TRIOLOGICAL SOCIETY

127TH ANNUAL MEETING AT COSM

The Triological Society
UPHOLDING THE NOBLE LEGACY

Hyatt Regency New Orleans | New Orleans
May 15-16, 2025

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127TH ANNUAL MEETING AT COSM

May 15-16, 2025 • Hyatt Regency New Orleans • New Orleans, LA

About the Triological Society
The American Laryngological, Rhinological and Otological Society, Inc., aka The Triological Society, was founded in 1895 in New York, NY. Since its founding, the Triological Society has attracted the best and brightest in academic and clinical otolaryngology. Membership in the Triological Society brings the distinction of being elected to the most prestigious society in otolaryngology. Active Fellowship is achieved by presenting a thesis in the field of otolaryngology considered acceptable to a panel of peers. For those entering the field of otolaryngology, the Society provides role models. For those who are committed to research and related scholarly activity, the Society offers fellowship with like-minded peers who share common values, interests, and concerns.

The Society disseminates scientific information by presenting the latest basic science and clinical information at scientific meetings and through publication of its scientific journals, The Laryngoscope and Laryngoscope Investigative Otolaryngology. The Society promotes research into the causes of and treatments for otolaryngic diseases by attracting promising physicians to scholarly otolaryngology research and supporting their development, providing financial support for the research efforts of young scientists, and promoting the highest standards in the field of otolaryngology-head and neck surgery.

Mission Statement
The mission of the Triological Society is to assist physicians and other health care professionals in maintaining and enhancing their knowledge of and skills in otolaryngology-head and neck surgery in pursuit of improved patient care.

Goals
- To continue the noble legacy of the Triological Society, which is to attract, develop and mentor the best otolaryngologists to become scholars and leaders.
- To encourage, support, and disseminate through meetings, print and electronic mediums the latest basic and clinical research findings and reports on evidence-based medicine pertaining to the diagnosis, treatment and prevention of the full spectrum of disorders of the head and neck and related structures.
- To seek out and encourage scientific and technical advances in otolaryngology-head and neck surgery.
- To provide a forum through meetings, print and electronic mediums for the international exchange of ideas and knowledge in otolaryngology-head and neck surgery and related fields of medicine and science.
- To provide for physician professional development through support of teaching and peer reviewed research.
- To encourage the highest ethical and professional standards in the delivery of patient care by otolaryngologist-head and neck surgeons.
- To promote academic excellence by requiring peer recommendations and an acceptable mentored thesis for admission to membership.
- To ensure that all educational activities comply with ACCME directives, and develop vehicles for otolaryngologist-head and neck surgeons to meet their Maintenance of Certification requirements.
- To enhance fellowship amongst members by creating social forums for interface and conversation.
- To maintain The Laryngoscope and Laryngoscope Investigative Otolaryngology as primary journals at the forefront of excellence as a resource and venue for scientific advancement of the profession.
- To advance the Society's standing outside the field of otolaryngology-head and neck surgery and promote across all types of practice environments.

- To facilitate the above goals, the Society sponsors educational meetings. The Society's journals, The Laryngoscope and Laryngoscope Investigative Otolaryngology serve as a means of disseminating the latest basic and clinical research results. The Society encourages research in otolaryngology-head and neck surgery by providing research grants and awards on a competitive basis.

In 2024, the Triological Society awarded:
- $480,000 in grant funds to otolaryngologist-head and neck surgeons to 1) help facilitate research career development in young otolaryngologists; and 2) further support otolaryngology clinical scientists with new or existing K08/K23 awards;
- $203,250 to residents, medical students, and Fellows who presented award winning posters at the Society's meetings.

Program Objectives
This activity is designed for otolaryngologists-head and neck surgeons and other health professionals. At the conclusion of this activity, the learner should be able to:
- Identify the causes of and recommend appropriate interventions for a variety of common and uncommon disorders affecting the ear, nose, throat, head, and neck.
- Integrate knowledge of new technologies to improve patient outcomes and optimize practice performance in otolaryngology.
- Recognize healthy versus unhealthy responses to negative patient outcomes to reduce dissatisfaction and burnout among physicians and other healthcare professionals.
- Effectively lead multidisciplinary teams by setting clear expectations for each team member, ensuring care is streamlined, efficient, and centered on the needs of patients and their families.
- Evaluate their own competence across clinical practice, education, research, and practice management in otolaryngology to identify and address knowledge gaps proactively.

Exhibits
Exhibitors will include representatives of pharmaceutical companies, instrument companies, diagnostic equipment companies, and others. We encourage attendees to visit the exhibit hall for information that may assist in their pursuit of improved patient care. Exhibitor arrangements are in compliance with the Accreditation Council for Continuing Medical Education (ACCME) Standards for Commercial Support.

Information presented by exhibitors and oral and poster presenters does not represent an endorsement by the Triological Society.

Disclosure Information
In accordance with the ACCME Accreditation Criteria, the American College of Surgeons must ensure that anyone in a position to control the content of the educational activity (planners and speakers/authors/discussants/moderators) has disclosed all financial relationships with any ineligible company held in the last 24 months. Please note that first authors were required to collect and submit disclosure information on behalf all other authors/contributors, if applicable.

Please see the insert to this program for the complete disclosure list.

Program Evaluation and CME Certificates
Participant comments on program evaluation forms assist Program Advisory Committees in determining the direction of future educational activities. We appreciate your input and request that you complete a program evaluation in exchange for a CME certificate of attendance. Records are maintained in the Administrative Office of the Society and maintained by the American College of Surgeons for Fellows of the College.

CME
Award of CME credits by ACS is based on compliance of the program with the ACCME accreditation requirements and does not imply endorsement by ACS of the content, the faculty, or the sponsor of the program.

Successful completion of this CME activity, which includes participation in the evaluation component, enables the learner to earn credit toward the CME requirements of the American Board of Surgery's Continuous Certification program.

By attending this activity, you give us permission to share your CME data with the CME Accrediting provider and the Accreditation Council for Continuing Medical Education.

Diplomates of the American Board of Surgery
If you are a physician and Diplomate of the American Board of Surgery (ABS) and you do not already have an American College of Surgeons (ACS) profile (Learner ID), you can create one through the ACS New User Registration Form on FACS.org. This is a free offering for those who have enrolled in an ACS- Accredited educational activity. The ACS ID will grant you access to MyCME where you can track, manage, and send your CME Data to the ABS.

Be certain to provide your ACS ID to this CME on provider in your session evaluation. For more information contact mycme@facs.org

If you need assistance with creating an ACS Learner ID or are not certain if you already have one, please contact Log-In Help on FACS.org

CONTINUING MEDICAL EDUCATION CREDIT INFORMATION

Accreditation
This activity has been planned and implemented in accordance with the accreditation requirements and policies of the Accreditation Council for Continuing Medical Education (ACCME) through the joint providership of American College of Surgeons and Triological Society. The American College of Surgeons is accredited by the ACCME to provide continuing medical education for physicians.

AMA PRA Category 1 Credits™
The American College of Surgeons designates this live activity for a maximum of **9.75** *AMA PRA Category 1 Credits™.* Physicians should claim only the credit commensurate with the extent of their participation in the activity.

ACS AMERICAN COLLEGE OF SURGEONS

ACCME ACCREDITED WITH COMMENDATION

Message from the President
Michael E. Hoffer, MD FACS

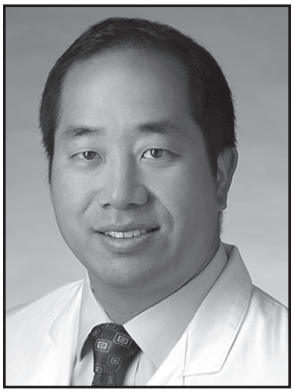
It's a tremendous honor to welcome you to the 127th Annual Meeting of the Triological Society in New Orleans! We have grown from a humble origin of 11 otolaryngologists in 1896 to the vibrant society we are today. The Triological Society honors our noble legacy by producing three different award winning publications, providing scholarships for students and trainees to attend our meetings, providing generous grants that help the careers of our surgeon scientists, and having engaging meetings that cover the entire field. At the same time, we seek to be a transformative society with changing faces of our leadership and opportunities for participation for all our members. Borrowing from the traditions of the past as we look forward to the future helps keep the Triologcal Society in the forefront of our specialty. Our goal is to continue to be a leader in advancing all aspects of our field and provide a place where all Otolaryngologists can enjoy fellowship, education, and the opportunity to influence the future or our field.

Our program Chair, Dr. Sonya Malekzadeh and her hardworking committee have designed a superb program. We have clinical and scientific discussions for all the subspecialties and a number of very interesting panels that examine other aspects of our specialty including training, certification, leadership, diversity, and cutting-edge technology. The meeting is designed to allow the participants to explore topics which they have asked for and do not find at other meetings.

Our society owes a tremendous debt of gratitude to our outstanding staff of Beth Faubel, Colleen Finnerman, and Beth Slovinski. We also want to recognize our outgoing Executive Vice President, Dr. Myles Pensak. His leadership, guidance, and counsel have helped transform this society and have touched the lives of many of our members. I look forward to welcoming you to New Orleans and if you are not a member yet we invite all of you to join our society. We represent the entire specialty and the entire range of practice environments. If you are an otolaryngologist, we have something for you.

Triological Society Honorees

PRESIDENTIAL CITATION
Michael Hoa, MD



Michael Hoa, MD received his B.A. from Boston University in 2001, his M.D. from BU School of Medicine in 2004, completed his residency in otolaryngology at Wayne State University in 2009 and completed a neurotology fellowship at the House Ear Clinic in 2012 and received research training under a NIH T32 research training program under Neil Segil, PhD in the USC/HEI Hearing and Communication Neurosciences Research Training Program. He subsequently moved to the NIDCD and Georgetown where he has crafted a career as a surgeon-scientist characterizing the role of the stria vascularis in hearing loss and adapting single nucleus transcriptome approaches for the adult mouse and human inner ear. His clinical research program at the NIDCD has focused on developing a better understanding of Meniere's disease and identifying novel and repurposable treatments for hearing loss in this setting. He has steadily risen to the rank of Professor at Georgetown University School of Medicine in the Department of Otolaryngology where he serves as both the director of the cochlear implant program and Director of Research along with other administrative roles and practices the breadth and depth of neurotology/otology. Nationally, Dr. Hoa currently serves as the Chair of the Research Committee for the American Cochlear Implant Alliance and the Chair of the ANS DI committee where has organized and implemented an annual outreach event to high schoolers in the context of the national AAO-HNSF meeting starting in Nashville in 2023.

PRESIDENTIAL CITATION
Meredith A. Holcomb, AuD

Meredith Holcomb, AuD is an Associate Professor and the Director of the Hearing Implant Program at the University of Miami Department of Otolaryngology. She has two decades of experience as a cochlear implant audiologist, specializing in both pediatric and adult patients. Dr. Holcomb is a current member of the Joint Committee on Infant Hearing and a faculty member for the Institute for Cochlear Implant Training courses. She serves as a consultant for Cochlear, Advanced Bionics, Med El, Akouos and Hemideina and is a Past-Chair of the American Cochlear Implant Alliance. Dr. Holcomb demonstrates a strong commitment to education, mentorship, and clinical research. She has authored numerous peer-reviewed journal articles and is regularly invited to speak at national and international conferences on cochlear implantation candidacy, outcomes and clinical efficiency.

PRESIDENTIAL CITATION
Peter A. Weisskopf, MD FACS

Dr. Weisskopf graduated from the University of Southern California School of Medicine. Following graduation he completed an internship and flight surgeon training in the U.S. Navy. After an operational tour as a flight surgeon, he completed his residency in Otolaryngology at the Naval Medical Center San Diego. He was then deployed overseas serving as the Department Head of Otolaryngology at the Naval Hospital Yokosuka, Japan. Following his tour in Japan, he entered his Neurotology Fellowship at the House Ear Clinic. He was in private practice in Phoenix, Arizona working as the Director of the Neurotology section of the Barrow Neurological Institutes. He recently left as Chair of the Otology Division at Mayo Clinic Arizona and is serving as founder and Director of EarVentures, a consulting and educational business focusing on ear and hearing technology as well as wilderness and austere medical care.

GUEST OF HONOR
Fred F. Telischi, MD FACS

Dr. Fred Telischi has practiced academic neurotology for more than 30 years at the University of Miami Ear Institute. His training began as a clinical neurotology fellow at the House Ear Institute in Los Angeles. He joined the faculty at the University of Miami Department of Otolaryngology-Head & Neck Surgery and helped to develop the comprehensive neurotology/lateral skull base/vestibular schwannoma surgery program with Dr. Thomas Balkany and colleagues. He has mentored residents, fellows, and Fullbright International Scholars in otology/neurotology related research. He was instrumental in establishing the nationally recognized UHealth Ear Institute's Children's Hearing Program. As Chairman of the UM Department of Otolaryngology-Head & Neck Surgery for the last dozen years, Dr. Telischi has overseen the development and growth of the UM Adult and Pediatric Auditory Implantation Program (cochlear and bone conduction), the Genetic Hearing Loss research laboratories, a new U.S. Auditory Brainstem Implantation site, inner ear drug delivery/cochlear preservation/auditory physiology laboratories, biomedical engineering innovation laboratory, auditory localization research booth, and the state-of-the-art microsurgical training facility. He and has also served in the following positions: President of the American Neurotology Society, Chairman of the Implantable Auditory Devices Committee of the American Academy of Otolaryngology, Board Member of the American Cochlear Implant Alliance (ACIA), and co-President of both the ACIA CI 2019 International Cochlear Implant Conference and the Osseo 2019 Biannual International Bone Conduction Scientific Symposium (both competitively awarded and held in Miami), Vice President Otological Rhinological Laryngological (Triological) Society, Southern Section.

The University of Miami Department of Otolaryngology ranks as one of the largest, most diverse, comprehensive Ear Nose Throat academic practices in the United States. Training programs include medical student intensive rotations, residency program with NIH funded research track, multiple subspecialty fellowship programs, unique international advanced otology and rhinology fellowships, observational mini-fellowships, and postgraduate courses. The Department consistently earns NIH research funding among the top 25 programs in the U.S. Clinical and research programs include all of the following: Otology/neurotology, head & neck cancer surgery/microvascular reconstruction, rhinology/anterior endoscopic skull base surgery, sleep surgery/medicine, laryngology/professional voice/speech pathology, facial plastic and reconstructive surgery, facial paralysis clinic, pediatric ENT, allergy, comprehensive audiology."

JOSEPH H. OGURA, MD, LECTURER
Cherie-Ann Nathan, MD FACS

Cherie-Ann Nathan, MD, FACS, is the Jack Pou Endowed Professor and Chair of the Department of Otolaryngology/Head and Neck Surgery at LSU-Health in Shreveport. She is also Director of Head and Neck Oncologic Surgery and Research at the Feist-Weiller Cancer Center and has a gratis appt. in the Dept. of Biochemistry & Molecular Biology. She completed her Otolaryngology/HNS residency and head and neck fellowship in 1995 at University of California, San Diego. She was a post-doctoral fellow at Johns Hopkins where she started her research career. Following her fellowship, she began her academic career at LSU-Health Sciences Center, Shreveport.

Her passion to improve outcomes for patients with head and neck cancer was the reason she moved from Mumbai India, where she went to medical school. She is a Surgeon-Scientist that maintains a busy practice treating head and neck cancer, thyroid, parathyroid, salivary gland tumors and skin cancer and she also leads an active research team. The National Cancer Institute has funded her translational research since 2000 and her work focuses on targeted therapy for head and neck squamous cell cancer patients. She is recognized nationally and internationally for her seminal work on molecular analysis of surgical margins. She has pioneered multi- institutional clinical trials using mTOR inhibitors in HNSCC patients. She has also received NIH funding for chemoprevention of cancer with curcumin and has a patent for a curcumin chewing gum. She has published extensively, has over 270 publications in peer-reviewed journals, and has authored multiple textbooks and encyclopedia chapters. She has given over 240 invited national and international lectures.

Dr. Nathan is the immediate Past President of the Association of Academic Depts. of Oto/HNS, the Past-President of the American Head and Neck Society and the Vice President Elect for the Southern Section of the Triological Society. She serves on many national committees some of which include the Board of Director for the American Board of Oto/HNS, American Academy of Oto/HNS Board of Directors, American College of Surgeons Board of Governors, Board of directors for the Head and Neck Cancer Alliance, Council Member for the Society of University Otolaryngology, Vice President of the US Collegium group, on the committee for Stand Up to Cancer and has served on the ACGME Review Committee, NCI Steering committee, the Larynx Preservation Guideline Panel for ASCO and the American Cancer Society-CDC HPV Steering Committee. She was chair for the ASTRO-ASCO-AHNS Multidisciplinary meeting. and was Section Editor for “Laryngoscope Investigative Otolaryngology”. At the local level she is active, having been on the board of directors for Shreveport Medical Society, Disaster Reform committee and the Science Museum.

Dr. Nathan was honored last year with two prestigious awards from the American Academy of Oto/HNS. She received the 2024 Living Legends Hall of Distinction Award, recognizing her extraordinary contributions to the field of Otolaryngology as well as the 2024 Women in Oto/HNS Helen F. Krause, MD Trailblazer Award for her role in paving the way for women in her specialty. She also received the 2020 Margaret Butler Outstanding Mentor of Women in Head & Neck Surgery Award from the American Head and Neck Society. The Shreveport-Bossier Commerce Department awarded her the Athena Award for community service and she was inducted into Shreveport’s 2019 Business Hall of Fame. She has been nominated as the
Champion of Hope” Honoree by the American Cancer Society, Northwest LA 2020. She received the Leonard Tow Humanism award from the Arnold Gold Foundation and was also nominated into AOA by the medical students. The Board of Regents in Louisiana established two professorships “Cherie-Ann Nathan Endowed Professorship in Otolaryngology/Head and Neck Surgery” and the Glass Nathan Endowed Professorship initiated by grateful patients to honor her dedication and expertise. She has consistently been recognized in the “Best Doctors of America” and received the AHNS, Academy of Oto/HNS and Western Section of the Triological society Presidential citation & Distinguished service awards.

2nd Annual Gerald B. Healy Panel
Continuing the DEI Conversation: A Deeper Dive

To honor the manifold contributions to Otolaryngology-Head and Neck Surgery; and in particular, The Triologic Society, the Executive Committee and Council have unanimously chosen to create the Gerald B. Healy MD, FACS Panel, The panel will convene at each COSM meeting wherein living into the ecumenical spirit championed by Gerry including: scholarship, fellowship, advocacy, and the promotion of specialty and subspeciality interaction- sharing knowledge to better the lives of patients and promote the ongoing education of physicians.

This year's dynamic panel will foster a robust, evidence-based discussion on advancing Diversity, Equity, and Inclusion (DEI) within our institutions and communities. Our expert panelists -- recognized leaders in DEI -- will examine the current climate, share strategies for developing action-oriented plans, and highlight the importance of clear outcome measures to drive meaningful and sustainable change. The session will be moderated by Dr. L.D. Britt, a renowned surgeon whose distinguished career and leadership in surgery have shaped generations of physicians and advanced the principles of equity and excellence.

L. D. Britt, MD MPH FACS

As the Henry Ford Professor and Edward J. Brickhouse Chairman of the Department of Surgery at Eastern Virginia Medical School, Dr. Britt is the first African-American in the country to have an endowed chair in surgery. Dr. Britt is the author of over 300 scientific publications (including 235 peer- reviewed articles in high-impact journals). He is the editor of four books, including the highly touted Acute Care Surgery (Lippincott, Williams & Wilkens, Medford, NJ). He serves on numerous editorial boards, including the Annals of Surgery, Journal of the American College of Surgeons (Deputy Editor), the American Journal of Surgery (Associate Editor), Archives of Surgery, Shock, the Journal of Trauma, Journal of Surgical Education and others. In addition, he is a reviewer for the New England Journal of Medicine. He is a member of several national and international organizations, including Alpha Omega Alpha Honor Society, Society of University Surgeons, Southern Surgical Association, Société International de Chirurgie, International Surgical Group (ISG), Halsted Society, American Surgical Association, and others. He has served on the National Institutes of Health study review panels. Dr. Britt has had many national and international leadership positions, including the following:

1. American College of Surgeons, President
2. Board of Regents of the American College of Surgeons, Chair
3. American Surgical Association, President
4. American Association for the Surgery of Trauma, President
5. Halsted Society, President
6. Society of Surgical Chairs, President
7. Southern Surgical Association, President
8. Southeastern Surgical Congress, President
9. National Medical Association, - Surgical Section, President
10. Society of Black Academic Surgeons, President (and current Executive Director)
11. ACGME Residency Review Committee, Chair
12. American Board of Surgery, Director

A Sincere Thank You
Myles L. Pensak, MD FACS, Executive Vice President

The Triological Society wishes to formally thank Myles L. Pensak, MD FACS, for his stewardship of our organization over the last two decades as Vice President, President, Treasurer, and Executive Vice President. His frank and plain-speaking communication style, his wisdom, and his integrity have been inspirational to all. Although his direct guidance will be sorely missed, his counsel and his perspective will continue to benefit the society in his new role as Executive Vice President (Emeritus). Myles- thank you for your dedication and for your service!

Program Planning Committee

Sonya Malekzadeh, MD FACS
Program Chair

Michael E. Hoffer, MD FACS
President

Seilesh C. Babu, MD

Sarah N. Bowe, MD FACS

Jolie L. Chang, MD FACS

Susan R. Cordes, MD FACS

Maura K. Cosetti, MD BA

Francis X. Creighton, MD

Sigsbee W. Duck, MD RPh FACS

Peter H. Hwang, MD FACS

Todd T. Kingdom, MD FACS

Miriam Lango, MD FACS

Christopher G. Larsen, MD MS FACS

Scott L. Lee, MD FACS

Robin W. Lindsay, MD BA

Anna H. Messner, MD

Luc G.T. Morris, MD FACS MSc

Larry L. Myers, MD FACS

Jay F. Piccirillo, MD FACS

Reza Rahbar, MD FACS

Karthik Rajasekaran, MD FACS

Anais Rameau, MD MPhil

Evan R. Reiter, MD FACS

David E. Rosow, MD FACS

Samuel A. Spear, MD

Peter C. Weber, MD FACS

Brian J.F. Wong, MD PhD FACS

VyVy N. Young, MD FACS

Chad A. Zender, MD FACS

2025 Thesis Award Winners

Harris P. Mosher Award

Amal Isaiah, MD PhD

Apolipoprotein E (APOE) Genotype and Cognitive Outcomes of Sleep Disordered Breathing in a Large Cohort of Adolescents

Edmund Prince Fowler Award

Lauren T. Roland, MD MSCI

The Role of Proteases in Epithelial Dysregulation in Invasive Fungal Sinusitis

Maureen Hannley Alternative Science Award

Deepa Shivnani, MBBS DNB ENT

Role of Pediatric Otolaryngologist in Pediatric Tracheostomy Code Blue Cases - A New Safety Initiative

Honorable Mention for Basic Science Award

Milan R. Amin, MD

Chemoradiation Effects on Rat and Human Muscle Related to Swallowing

Honorable Mention for Clinical Research Award

Stephen R. Chorney, MD MPH

Cost Utility Analysis of Intracapsular and Extracapsular Techniques for Pediatric Tonsillectomy

With Distinction Award

Mursalin M. Anis, MD PhD

RNA Sequencing Provides Insight into Idiopathic Subglottic Stenosis

With Distinction Award

John P. Giliberto, MD

Gender and Academic Rank Disparities in Electronic Health Record Burden in Otolaryngologists from 46 Academic Institutions

With Distinction Award

Denis C. Lafreniere, MD MS

Development of an Endotracheal Tube to Measure Posterior Laryngeal Pressure Related to Tube Size and Hypopharyngeal Laryngeal Angle

With Distinction Award

Mirabelle B. Sajisevi, MD

Practice Patterns in Management of Low to Intermediate Grade Salivary Gland Carcinoma: A Multi-Institutional, Multi-National Study

With Distinction Award

Seckin O. Ulualp, MD FACS

Assessment of Positional Obstructive Sleep Apnea in Children Undergoing Adenotonsillectomy for Obstructive Sleep Apnea

New Fellows to Be Inducted

The New Fellows Ceremony followed by the reception with Triological Fellows is scheduled on Friday, May 16 from 7:00 am to 8:30 am in Celestin ABC.

Nicole L. Aaronson, MD FACS MBA

Milan R. Amin, MD

Mursalin M. Anis, MD PhD

Ameya A. Asarkar, MD MHA FACS

Matthew A. Bromwich, MD FRCSC BSc

Andres M. Bur, MD FACS

Cristina E. Cabrera-Muffly, MD FACS

Stephen R. Chorney, MD MPH

Brad W. deSilva, MD

Karuna Dewan, MD BA FACS

John Paul Giliberto, MD

Nazaneen N. Grant, MD

Michael S. Harris, MD

Tina C. Huang, MD MS

Colin T. Huntley, MD FACS

Margaret N. Huston, MD

Amal Isaiah, MD PhD MBA

Gina D. Jefferson, MD FACS

Paul E. Johnson, MD FACS

Denis C. Lafreniere, MD MS

R. Peter Manes, MD FACS

Gauri S. Mankekar, MD PhD DNB

Jason G. May, MD MS MDiv

Kevin Christopher McMains, MD

Stephanie N. Misono, MD MPH FACS

Zara M. Patel, MD

John D. Prosser, MD BS

Nikhila P. Raol, MD MPH

Lauren T. Roland, MD MSCI

Mirabelle B. Sajisevi, MD

Gopi B. Shah, MD MPH

Deepa Shivnani, MBBS DNB ENT

Elizabeth H.Y. Toh, MD MBA

Ching Lick Charles Tong, MD

Seckin O. Ulualp, MD FACS

Nancy M. Young, MD FACS

Harris P. Mosher Award

Given in recognition of the excellence of the Candidate's Thesis in Clinical Research. This honor was created to perpetuate the ideals of the great teacher for whom it was named and to bestow upn a worthy recipient the responsibility of furthering the highest standards of perfection in the study, teaching and practice of Otolaryngology.

Harris P. Mosher • 1867-1954

Highly respected, feared, and revered by his students, Dr. Mosher attended Harvard College and the Harvard Medical School, receiving his MD degree in 1896. There were no formal residency training programs then, so he sought training at the best ear, nose and throat centers in Germany, namely, with Jansen in Berlin and Grunert in Halle. After returning home, Mosher became an instructor in the department of anatomy at the Massachusetts Eye and Ear Infirmary and the Harvard Medical School.

He started the first course in sinus anatomy in the United States. This course was to become famous for its content and its progenitor and was appropriately named "Mosher's course". It endured for 35 years.

In 1919 he was appointed Professor of Laryngology at the Harvard Medical School and Chief of Laryngology at the Massachusetts General Hospital. In 1932 he was appointed to the Walter Augustus LaCompte Chair of Otology at Harvard and at age 66 became the second individual to hold two chairs at Harvard. Dr. Mosher was a member and became the president of all of our prominent national otolaryngology societies. When the American Board of Otolaryngology was formed in 1924 (the second certification board after ophthalmology in 1917*) he was chosen as its president and served in that capacity for 25 years. He was the recipient of the Semon Medal from the Royal Society of Medicine of London, the Gold Medal from the American Laryngological Association, and a service medal from the American Academy of Ophthalmology and Otolaryngology. He is known for his intranasal ethmoidectomy technique and his method for the removal of safety pins swallowed by babies, for which he was given a citation by the American College of Surgeons in 1934.

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*Deliberations and progress in our specialty were interrupted by World War I. Also, there was growing resistance to authority to regulate specialty education and training--in essence, the transition from apprenticeships to formal training programs as we know them today. The need was urgent because some form of evaluation of physicians was needed to supplement the general licensing regulations of the various states' Boards of Public Health.

Mosher Award Recipients

1957 . . . . . Harold G. Tabb, MD
1958 . . . . . Jack V.D. Hough, MD
. . . . . John A. Kirchner, MD
1959 . . . . . Maurice Schiff, MD
1960 . . . . . Walter A. Petryshyn, MD
. . . . . Alex Weisskopf, MD
1961 . . . . . Godfrey E. Arnold, MD
1962 . . . . . Wesley E. Compere, MD
1963 . . . . . Edward G. McCoy, MD
. . . . . William W. Montgomery, MD
. . . . . Henry J. Rubin, MD
1964 . . . . . Hugh O. Barber, MD
1965 . . . . . Brian F. McCabe, MD
1966 . . . . . No award
1967 . . . . . Frank N. Ritter, MD
. . . . . George T. Singleton, MD
1968 . . . . . Leslie Bernstein, MD
1969 . . . . . David A. Hilding, MD
. . . . . Lindsay L. Pratt, MD
1970 . . . . . Herbert H. Dedo, MD
1971 . . . . . Byron J. Bailey, MD
1972 . . . . . Hugh F. Biller, MD
1973 . . . . . Mark May, MD
. . . . . Andrew W. Miglets, MD
1974 . . . . . Robert W. Cantrell, MD
1975 . . . . . Donald G. Sessions, MD
1976 . . . . . No award
1977 . . . . . Donald B. Hawkins, MD
1978 . . . . . Robert A. Jahrsdoerfer, MD
1979 . . . . . Arnold M. Noyek, MD
1980 . . . . . H. Bryan Neel III, MD PhD
1981 . . . . . Bruce A. Feldman, MD
1982 . . . . . Roger L. Crumley, MD
1983 . . . . . S. George Lesinski, MD
1984 . . . . . Irwin F. Stewart, MD
1985 . . . . . Frank E. Lucente, MD
1986 . . . . . Harold C. Pillsbury, MD
1987 . . . . . James N. Thompson, MD
1988 . . . . . Thomas V. McCaffrey, MD
1989 . . . . . Arnold Komisar, MD
. . . . . Bernard R. Marsh, MD
1990 . . . . . Patrick J. Gullane, MD
1991 . . . . . Robin T. Cotton, MD
1992 . . . . . Myles L. Pensak, MD
1993 . . . . . Ronald A. Hoffman, MD
1994 . . . . . Robert Sofferman, MD
1995 . . . . . Fred Herzon, MD
1996 . . . . . Stimson P. Schantz, MD
1997 . . . . . Scott C. Manning, MD
1998 . . . . . No award
1999 . . . . . Dennis S. Poe, MD
2000 . . . . . Lyon L. Gleich, MD
. . . . . David J. Terris, MD
2001 . . . . . Joseph G. Feghali, MD
2002 . . . . . Wendell G. Yarbrough, MD
2003 . . . . . Edwin M. Monsell, MD PhD
2004 . . . . . Craig A. Buchman, MD
2005 . . . . . Francisco J. Civantos, MD
2006 . . . . . Henry T. Hoffman, MD
. . . . . Dana M. Thompson, MD
2007 . . . . . Erin D. Wright, MD
2008 . . . . . Robert C. O'Reilly, MD
2009 . . . . . Steven J. Wang, MD
2010 . . . . . Adrian L. James, MD
2011 . . . . . Robert L. Ferris, MD PhD
2012 . . . . . Nira A. Goldstein, MD MPH
. . . . . Judith E.C. Lieu, MD MSPH
2013 . . . . . Joseph M. Chen, MD
. . . . . Adam M. Zanation, MD
2014 . . . . . George B. Wanna, MD FACS
2015 . . . . . Lisa E. Ishii, MD MHS
2016 . . . . . Giovana R. Thomas, MD FACS
2017 . . . . . Jonathan M. Bock, MD
2018 . . . . . Aaron C. Moberly, MD
2019 . . . . . David P. Goldstein, MD MSc FACS
2020 . . . . . Farrel J. Buchinsky, MBChB FACS
2021 . . . . . Kevin D. Brown, MD PhD
2022 . . . . . Theodore R. McRackan, MD
2023 . . . . . Brianne B. Roby, MD
2024 . . . . . Keith A. Chadwick, MD MS
2025 . . . . . Amal Isaiah, MD PhD

Edmund Prince Fowler Award

Given in recognition of the excellence of the Candidate's Thesis in Basic Research. This honor was created to perpetuate the ideals of the great teacher for whom it was named and to bestow upon a worthy recipient the responsibility of furthering the highest standards of perfection in the study, teaching and practice of Otolaryngology.

Edmund Prince Fowler • 1872-1966

It says something about the intellectual wealth of the Triological Society that Edmund Prince Fowler Sr., MD, succeeded Max Goldstein, MD, as president in 1932. Both were giants in otology, prolific authors and advocates for the hard of hearing. In honor of Dr. Fowler's contributions to otolaryngology, the Society established The Edmund Prince Fowler Award in 1971, given each year for the best thesis in basic research.

After earning his MD from Columbia University, Dr. Fowler joined the Manhattan Eye and Ear Hospital and became a clinical professor at Columbia University in 1933. He was a decorated colonel of World War I. He was president of the American Otological Society in 1937, recipient of the first Award of Merit from that society in 1952 and founder of the first hearing center in the United States (in New York City). To the legacy of the prodigious researcher and "Dean of Audiology", as he was called, we attribute the invention of the modern clinical audiometer. He tested many patients and soon became aware of the fact that some patients with severe or unilateral losses had suprathreshold hearing values, a condition he coined as "recruitment". This clinical finding resulted in the Alternate Binaural Loudness Balance test, the first to separate cochlear from retrocochlear losses.

In his address to the sections in January 1932, Dr. Fowler described specific recommendations for hearing tests on schoolchildren. He also asked his colleagues to be thoughtful: "Let us not forget to treat the patient as a sensitive human being," he said, "and aid him in surmounting the drawbacks and psychological reactions to his disability."

At the 38th Annual Meeting in Atlantic City, NJ, in 1932, Dr. Fowler shared the spotlight with Edward B. Dench, MD, first president of the Triological, then 72 years old. (Dr. Dench had been named Honorary President of the Society in 1931 until his death in 1936.) At the meeting, George Richards, MD, editor of the Transactions, outlined a list of guidelines for submissions. During the same meeting the council approved a resolution supporting the ABO and its work in raising educational standards in the specialty as part of an effort to stem the tide of proposals for examinations for specialists by each of the 48 states.

Dr. Fowler died in 1966, six months after the last of his 113 papers was presented (at 94 years of age!) at a meeting of the American Otological Society.

Fowler Award Recipients

1971 . . . . . Richard R. Gacek, MD
1972 . . . . . Duane W. Nagle, MD
. . . . . Raimund G. Rueger, MD
1973 . . . . . Robert J. Ruben, MD
1974 . . . . . Robert I. Kohut, MD
. . . . . Willard B. Moran, Jr., MD
. . . . . Gershon J. Spector, MD
1975 . . . . . Gregory J. Matz, MD
. . . . . Richard L. Vorhees, MD
1976 . . . . . Shokri Radpour, MD
1977 . . . . . LaVonne Bergstrom, MD
1978 . . . . . Diran O. Mikaelian, MD
1979 . . . . . William L. Meyerhoff, MD
. . . . . Clarence T. Sasaki, MD
1980 . . . . . Robert A. Schindler, MD
1981 . . . . . Don E. Gebhart, MD
1982 . . . . . Michael E. Johns, MD
1983 . . . . . Bruce W. Jafek, MD
1984 . . . . . David E. Schuller, MD
1985 . . . . . Marvin P. Fried, MD
1986 . . . . . Michael Friedman, MD
1987 . . . . . Stanley M. Shapshay, MD
1988 . . . . . Timothy T.K. Jung, MD
1989 . . . . . Robert T. Sataloff, MD
1990 . . . . . Soly Baredes, MD
1991 . . . . . Douglas E. Mattox, MD
1992 . . . . . Vanessa G. Schweitzer, MD
1993 . . . . . Ralph F. Wetmore, MD
1994 . . . . . Paul Lambert, MD
1995 . . . . . Michael Pratt, MD
1996 . . . . . P. Ashley Wackym, MD
1997 . . . . . Allen Hillel, MD
. . . . . D. Bradley Welling, MD
1998 . . . . . No award
1999 . . . . . Debra L. Tucci, MD
2000 . . . . . Rick A. Friedman, MD
. . . . . Michael D. Seidman, MD
2001 . . . . . J. Christopher Post, MD
2002 . . . . . Richard D. Kopke, MD
2003 . . . . . Chung-Ku Rhee, MD PhD
2004 . . . . . Shawn D. Newlands, MD
2005 . . . . . Steven W. Cheung, MD
2006 . . . . . Alan G. Micco, MD
2007 . . . . . Bradley W. Kesser, MD
2008 . . . . . Eric M. Genden, MD
. . . . . Marlan R. Hansen, MD
2009 . . . . . Ravindhra G. Elluru, MD PhD
. . . . . Andrew P. Lane, MD
2010 . . . . . Philip D. Littlefield, MD
2011 . . . . . Stacey L. Halum, MD
2012 . . . . . Quyen T. Nguyen, MD PhD
2013 . . . . . Subinoy Das, MD FACS
2014 . . . . . Hinrich Staecker, MD PhD
2015 . . . . . Bradford A. Woodworth, MD
2016 . . . . . Gregory A. Grillone, MD FACS
2017 . . . . . Syed F. Ahsan, MD FACS
2018 . . . . . Murugappan Ramanathan, MD
2019 . . . . . Amber U. Luong, MD PhD FACS
2020 . . . . . Alexander Gelbard, MD
2021 . . . . . Adam J. Luginbuhl, MD
2022 . . . . . Steven J. Eliades, MD PhD
2023 . . . . . Thomas J. Ow, MD MS FACS
2024 . . . . . Devyani Lal, MD MBBS MS
2025 . . . . . Lauren T. Roland, MD MSCI

Maureen Hannley Award

Given in recognition of the excellence of the Candidate's Thesis in an Alternative Science category. This honor was created in 2016 to honor Dr. Hannley's contributions and legacy to the Triological Society. She was the Society's Thesis and Research Grants consultant from 2006 to 2015. Dr. Hannley assisted young researchers and mentored candidates for Triological Fellowship, assisting them with preparation of their theses.

Maureen Hannley • 1942-2015

Maureen Hannley, PhD, was a dedicated advisor and respected for her commitment to advance the mission of the Society to attract the best minds in otolaryngology. Her tireless work assured that the quality of the contributions of the candidates reflected the honor and prestige of membership. As the diversity of the academic and scientific work of the otolaryngology community evolved, Dr. Hannley acknowledged the importance of alternative scholastic contributions to our Society that fall outside the traditional basic and clinical research paradigms. This award is annually bestowed upon the candidate whose thesis represents an outstanding contribution in the alternative science category of Technology/Procedure Development, Otolaryngology Status and Trends, Health Services Research, or Historical Perspectives.

Maureen Hannley, PhD received her MA from the University of Arizona and a PhD in Hearing Science and Biocommunication from Baylor College of Medicine. Throughout her academic and research career, she held appointments at Louisiana State University, Kresge Hearing Research Laboratory, Stanford University School of Medicine, Duke University, Medical College of Wisconsin and, most recently, was a Professor in the Department of Otolaryngology at University of Arizona. Dr. Hannley held many administrative appointments, including that of Chief Research Officer at the AAO-HNSF and Health Services Administrator and Director of the Hearing Research Program at NIDCD. She lent her expertise to numerous advisory boards including NIH, ARO, SUO, and Boys Town National Research Hospital, to name a few. She was elected as an Honorary Triological Society Fellow in 2009.

Hannley Award Recipients

2016 . . . . . Paul Hong, MD FRCSC
2017 . . . . . Kofi D. Boahene, MD FACS
2018 . . . . . James C. Denneny, MD FACS
2019 . . . . . Alexander J. Langerman, MD FACS
2020 . . . . . Jennifer M. Lavin, MD
2021 . . . . . David W. Jang, MD
2022 . . . . . Antoine Eskander, MD FRCSC
2023 . . . . . Jose L. Mattos, MD, MPH
2024 . . . . . Francis X. Creighton, MD
2025 . . . . . Deepa Shivnani, MBBS DNB ENT

Honorable Mention for Basic Science Award

Given in recognition of the excellence of the Candidate's Thesis in Basic Science.

1998 . . . . . Perry M. Santos, MD, MS
1999 . . . . . Saumil N. Merchant, MD
2000 . . . . . Jennifer R. Grandis, MD
2001 . . . . . .William H. Lindsey, MD
2002 . . . . . .No Award
2003 . . . . . Sujana S. Chandrasekhar, MD
2004 . . . . . Joseph Sniezek, MD
2005 . . . . . .Cliff A. Megerian, MD
. . . . . Brian Nussenbaum, MD
2006 . . . . . Eben Rosenthal, MD
. . . . . .Richard L. Scher, MD
2007 . . . . . Joseph E. Kerschner, MD
. . . . . .J. Paul Moxham, MD
2008 . . . . . .No Award
2009 . . . . . .No Award
2010 . . . . . Seth H. Dailey, MD
2011 . . . . . Norman D. Hogikyan, MD FACS
. . . . . Maie A. St. John, MD
2012 . . . . . Adrien Eshraghi, MD, MSC
2013 . . . . . .John D. Macias, MD FACS
2014 . . . . . Kenneth H. Lee, MD PhD
2015 . . . . . Eunice Y. Chen, MD PhD
. . . . . Ian N. Jacobs, MD FACS
2016 . . . . . Lamont R.D. Jones, MD
2017 . . . . . .Devraj Basu, MD PhD FACS
2018 . . . . . Alexander T. Hillel, MD
2019 . . . . . .Ravi N. Samy, MD FACS
2020 . . . . . Ronna Hertzano, MD PhD
2021 . . . . . David G. Lott, MD
2022 . . . . . .Trung N. Le, MD PhD
2023 . . . . . .Konstantina M. Stankovic, MD PhD
2024 . . . . . Joshua M. Levy, MD MPH MS
2025 . . . . . Milan R. Amin, MD

Honorable Mention for Clinical Research Award

Given in recognition of the excellence of the Candidate's Thesis in Clinical Research.

1998 . . . . . Kenneth M. Grundfast, MD
1999 . . . . . Randal Paniello, MD
2000 . . . . . Seth I. Rosenberg, MD
2001 . . . . . Mark S. Courey, MD
2002 . . . . . .Christopher J. Linstrom, MD
2003 . . . . . .Phillip K. Pellitteri, DO
. . . . . .James C. Alex, MD
2004 . . . . . .Donald T. Weed, MD
2005 . . . . . .George T. Hashisaki, MD
. . . . . .Judith C. McCaffrey, MD
2006 . . . . . Neil Bhattacharyya, MD
2007 . . . . . Joel A. Ernster, MD
. . . . . .Natasha Mirza, MD
2008 . . . . . Marshall E. Smith, MD
2009 . . . . . .Stephen F. Conley, MD FACS
. . . . . .David R. Friedland, MD PhD
2010 . . . . . Peter C. Belafsky, MD PhD
. . . . . .Seth M. Cohen, MD MPH
. . . . . .Jeffrey H. Spiegel, MD
2011 . . . . . Carol R. Bradford, MD FACS
. . . . . Gregory J. Wiet, MD FACS
2012 . . . . . Bruce H. Haughey, MBChB FACS
2013 . . . . . Amy Y. Chen, MD FACS
. . . . . .Sam J. Daniel, MD MSC
. . . . . .Tanya K. Meyer, MD BS
2014 . . . . . Andrew R. Scott, MD FACS
2015 . . . . . Oliver F. Adunka, MD
. . . . . Hamid R. Djalilian, MD
. . . . . Brett A. Miles, MD DDS FACS
2016 . . . . . .No Award
2017 . . . . . Daniel H. Coelho, MD FACS
2018 . . . . . Paul C. Bryson, MD FACS
2019 . . . . . Hadi Seikaly, MD
2020 . . . . . Reena Dhanda Patil, MD MBA
2021 . . . . . .Cecelia E. Schmalbach, MD FACS
2022 . . . . . .Karla D. O'Dell, MD
2023 . . . . . .Jennifer A. Villwock, MD
2024 . . . . . .Adele K. Evans, MD
2025 . . . . . .Stephen R. Chorney, MD MPH

Honorable Mention Award

Given in recognition of the excellence of the Candidate's Thesis.

1982 . . . . . Joseph B. Nadol Jr., MD
1983 . . . . . No award
1984 . . . . . No award
1985 . . . . . George P. Burns, MD
. . . . . Wayne F. Larrabee Jr., MD
. . . . . Richard T. Miyamoto, MD
. . . . . Leonard P. Rybak, MD
1986 . . . . . Paul J. Donald, MD
. . . . . Jack L. Gluckman, MD
. . . . . Jeffery P. Harris, MD
1987 . . . . . Frederick M.S. McConnell, MD
1988 . . . . . C. Gary Jackson, MD
1989 . . . . . Samuel R. Fisher, MD
. . . . . Joan T. Zajtchuk, MD
1990 . . . . . David M. Barrs, MD
. . . . . James A. Koufman, MD
1991 . . . . . Gary L. Schechter, MD
1992 . . . . . Lawrence P.A. Burgess, MD
. . . . . William W. Shockley, MD
1993 . . . . . C. Ron Canon, MD
. . . . . Gerald E. Merwin, MD (posthumous)
. . . . . James L. Netterville, MD
. . . . . K. Thomas Robbins, MD
1994 . . . . . Arthur S. Hengerer, MD
. . . . . Larry A. Hoover, MD
. . . . . Richard W. Waguespack, MD
. . . . . Steven M. Zeitels, MD
1995 . . . . . Kevin A. Shumrick, MD
. . . . . Robert C. Wang, MD
1996 . . . . . Author Unknown
1997 . . . . . George S. Goding Jr., MD
. . . . . Joseph Haddad Jr., MD
. . . . . Sigsbee W. Duck, MD

With Distinction Award

Given in recognition of the excellence of the Candidate's Thesis.

2011 . . . . . Julie L. Wei, MD
2012 . . . . . Daniel D. Lydiatt, DDS MD FACS
2013 . . . . . Joseph A. Brennan, MD FACS
2014 . . . . . Howard W. Francis, MD
2015 . . . . . Wade W. Chien, MD
. . . . . Noam A. Cohen, MD PhD
2016 . . . . . No Award
2017 . . . . . Matthew L. Bush, MD FACS
. . . . . David Goldenberg, MD FACS
2018 . . . . . David J. Eisenman, MD
. . . . . Jose P. Zevallos, MD MPH FACS
2019 . . . . . Mark J. Jameson, MD PhD FACS
2020 . . . . . Christopher G. Tang, MD
2021 . . . . . Maria V. Suurna, MD FACS
2022 . . . . . Joseph M. Curry, MD FACS
. . . . . Charles J. Limb, MD
2023 . . . . . Taher S. Valika, MD FACS
2024 . . . . . Michael B. Gluth, MD FACS
. . . . . M. Elise Graham, MD FRCSC
. . . . . Robert S. Hong, MD PhD
. . . . . Matthew R. Naunheim, MD MBA
. . . . . Jonathan R. Skirko, MD MHPA MPH
2025 . . . . . Mursalin M. Anis, MD PhD
. . . . . John P. Giliberto, MD
. . . . . Denis C. Lafreniere, MD MS
. . . . . Mirabelle B. Sajisevi, MD
. . . . . Seckin O. Ulualp, MD FACS

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	Southern ● J. Madison Clark II, MD FACS
	Western ● Steven J. Wang, MD
Thesis Chair	Daniel G. Deschler, MD FACS
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Laryngoscope Investigative Otolaryngology Editor-in-Chief	Romaine F. Johnson, MD MPH
ENTtoday Physician Editor	Robin W. Lindsay, MD BA

The Laryngoscope

Editor-in-Chief	Samuel H. Selesnick, MD FACS
Managing Editor	Kylie Bade thelaryngoscope@gmail.com
Website	www.laryngoscope.com

ENTtoday

Physician Editor	Robin W. Lindsay, MD BA enttodaychief@gmail.com
Editor	Lisa Casinger lcasinger@wiley.com
Website	www.enttoday.org

Laryngoscope Investigative Otolaryngology

Editor-in-Chief	Romaine F. Johnson, MD MPH Romaine.Johnson@UTSouthwestern.edu
Managing Editor	Emily Kane investigativeotolaryngology@gmail.com
Website	www.investigativeoto.com

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Coordinators	Colleen Finnerman 630-365-7574 colleen@triological.org
	Beth Slovinski 630-365-7576 beth@triological.org
Website	www.triological.org

127th Annual Meeting at COSM
Thursday - Friday, May 15 - 16, 2025 | New Orleans, LA

THURSDAY, MAY 15, 2025

Celestin ABC

1:00 **Welcome by President**
Michael E. Hoffer, MD FACS, Miami, FL

1:10 **Introduction of Presidential Citations and Guest of Honor**
Citation Awardees
Michael Hoa, MD, Washington, DC
Meredith A. Holcomb, AuD, Miami, FL
Peter A. Weisskopf, MD FACS, Phoenix, AZ

Guest of Honor
Fred F. Telischi, MD FACS, Miami, FL

1:30 **Presidential Address**
Hay Pacientes
Michael E. Hoffer, MD FACS, Miami, FL

1:50 **Introduction of Joseph H. Ogura, MD Annual Lecturer**
Michael E. Hoffer, MD FACS, Miami, FL

JOSEPH H. OGURA, MD, LECTURE
From Anatomy to AI: Evolutionary Lessons in Otolaryngology - Head and Neck Surgery
Cherie-Ann Nathan, MD FACS, Shreveport, LA

2:30 **Introduction of 2025 Thesis Award Presentations**

HARRIS P. MOSHER AWARD
Apolipoprotein E (APOE) Genotype and Cognitive Outcomes of Sleep Disordered Breathing in a Large Cohort of Adolescents
Amal Isaiah, MD PhD, Baltimore, MD

Objective: To investigate whether apolipoprotein E (APOE) ε4 genotype is associated with lower cognitive performance in children with habitual snoring and to determine if APOE could stratify children with snoring by their risk for adverse cognitive outcomes. Methods: We performed a secondary analysis of the Adolescent Brain Cognitive Development (ABCD) dataset, which included approximately 12,000 children aged 9-10 years recruited between June 2016 and October 2018, with follow-up data from years 1 and 3. Cognitive performance was assessed using the National Institutes of Health Toolbox (NIH-TB) Cognitive Battery. Snoring frequency was evaluated using the Sleep Disorders Scale for Children and categorized as none, non-habitual (<3 nights/week), or habitual (≥3 times/week). APOE genotypes were identified using Plink 2.0. Linear mixed effects models examined interaction effects between APOE genotypes, time, and snoring on age-adjusted Crystallized Cognition Composite scores, adjusting for demographic and clinical variables. Secondary outcomes included other NIH-TB domain scores. Results: Of 11,725 children (52.2% female) in year 1, 6.9% were habitual snorers. APOE genotype distribution was 69.8% ε3ε3, 2.7% ε3ε4/ε4ε3, and 27.5% ε4ε4. No significant interaction effects were found between genotype and snoring or between genotype, snoring, and time. Significantly, the APOE genotype did not modify the relationship between the frequency of snor-

ing and the NIH-TB Crystallized Composite score, either at a single point or over time. Conclusion: APOE genotype was not associated with worsening cognition in habitually snoring children over time. More extended followup periods may be necessary to detect potential chronic cognitive decline in this population.

EDMUND PRINCE FOWLER AWARD
The Role of Proteases in Epithelial Dysregulation in Invasive Fungal Sinusitis
Lauren T. Roland, MD MSCI, St. Louis, MO

Objectives: To examine differential gene expression and quantify protein in sinonasal tissue between two immunosuppressed patient cohorts, those with and without invasive fungal sinusitis (IFS). We hypothesized that disrupted epithelial integrity in sinonasal mucosa of immunosuppressed IFS patients may allow for tissue invasion. Methods: Bulk RNA sequencing was performed on tissue from eight patients from each cohort. Evaluation of protein expression for select proteases and their inhibitors was performed on all sinonasal tissue using multiplex western blotting. Immunostaining for matrix metalloproteinase (MMP)3 and Claudin 1 was performed and visualized using confocal microscopy. Results: Bulk RNA sequencing identified 33 genes that were differentially regulated in immunosuppressed IFS tissue compared to those without IFS. Multiplex western blot revealed several proteases, including MMPs, with increased expression in the immunosuppressed IFS cohort compared to those without IFS. Tissue inhibitors of MMPs (TIMPs) were proportionally lower in IFS patient tissue compared to the control cohort. Representative immunostaining revealed increased MMP3 staining and decreased Claudin 1 staining in immunosuppressed IFS tissue compared to control cohort tissue without IFS. Conclusions: Several proteases with increased expression in immunosuppressed IFS patients may be responsible for both an appropriate immune response to pathogen as well as epithelial barrier breakdown and subsequent fungal invasion.

MAUREEN HANNLEY ALTERNATIVE SCIENCE AWARD
Role of Pediatric Otolaryngologist in Pediatric Tracheostomy Code Blue Cases - A New Safety Initiative
Deepa Shivnani, MBBS DNB ENT, Bengaluru, Karnataka India

Objectives: A “Pediatric Code Blue (PCB)” is a term to activate an alarm for the resuscitation team for a patient who has a cardiopulmonary arrest. Although resuscitation teams are formed for medical, surgical, and intensive care units in different institutions, the exact role of a Pediatric Otolaryngologist in a tracheostomy-related code blue case is not clearly defined. We aim to describe the utility and clinical outcomes of a Pediatric Otolaryngologist in Pediatric Tracheostomy Code Blue (PTCB) situations in tracheostomized children and those with a history of significant airway surgeries. Study Design: Retrospective chart review Methods: This study involved a retrospective analysis of pediatric code blue cases collected from patient’s electronic records in a tertiary care hospital over four years (January 2019 to December 2022). Out of all these pediatric code events, the analysis focused on those involving tracheostomized children and where the pediatric otolaryngologist/ENT was assigned as part of the resuscitation team. The primary outcome variables included: response time, survival rate of patients, and overall effectiveness of airway management. Results: The most common reasons for code activation were reduced oxygen saturation followed by tachypnea. The majority of code activations occurred in the ward followed by the Pediatric Intensive Care Unit (PICU) & Emergency Room (ER). This distribution showed a significant association with outcomes ($p = 0.011$). The leading cause of ENT consultations in the ward and ICU was tube blockage followed by tube displacement. Tracheostomy tube change was the most common intervention used over the flexible laryngoscopy. The mean time of ENT arrival was significantly decreased from 14.6 ± 3.500 minutes pre-implementation to 4.3 ± 1.144 mean minutes post-implementation ($p < 0.001$). Overall, there was a significant reduction in the mortality rate post-implementation of Pediatric Tracheostomy Code Blue (PTCB) alerts. (p value=0.037). Conclusions: Immediate identification of tracheostomy emergencies can significantly reduce mortality in pediatric patients. The presence of a pediatric otolaryngologist on the resuscitation team has been associated with improved clinical outcomes compared with resuscitation efforts conducted by standard pediatric code blue teams, including improved airway management, reduced critical events, and improved survival.

3:10 Star Reviewer Acknowledgement
Samuel H. Selesnick, MD FACS, New York, NY

3:15 BREAK/VISIT EXHIBITORS/VISIT POSTERS

PANEL

3:35 - 4:25 So You Want to Be a Leader…

Moderator:

Sarah K. Rapoport, MD, Washington, DC

Panelists:

Joseph E. Kerschner, MD FACS, Milwaukee, WI
Bert W. O'Malley Jr., MD FACS, Baltimore, MD
Rahul K. Shah, MD FACS, Alexandria, VA
Maie A. St. John, MD PhD, Los Angeles, CA

Session 1: Facial Plastic & Reconstructive Surgery

Moderators
Robin W. Lindsay, MD BA, Boston, MA
Maya G. Sardesai, MD MEd, Seattle, WA

4:25 The Toxicity of Doxycycline as a Sclerosing Agent in Rhinoplasty

Ellen M. Hong, BA, Nutley, NJ; Elizabeth Lee, MD, Irvine, CA; Sina J. Torabi, MD, Orange, CA; Jessica R. Salas, PhD, Irvine, CA; Brian J.F. Wong, MD PhD, Irvine, CA

Educational Objective: At the conclusion of this presentation, the participants should be able to understand the toxicity of doxycycline on cultured cells to consider its use as a sclerosing agent in facial plastic surgery

Objectives: To study the toxic effect of doxycycline on chondrocytes and fibroblasts to evaluate its role as a sclerosing agent in facial plastic surgery. Study Design: In vitro tissue study. Methods: Human septal cartilage was prepared in 2x2mm samples. Fibrocyte cell lines were prepared in a 24 well plate with DMEM media. Short term cells were exposed to concentrations of 5, 10, 20 mg/mL of doxycycline for 0.5, 1, or 2 hours. Long term cells were exposed to concentrations of 0.05, 0.5, 5, 50, 250, and 1250 ug/mL for 6 days. Viability analysis was performed using live/dead assay and phase contrast microscopy. Results: When assessed by one way ANOVA, there was a statistical difference in cell death between the short term chondrocytes (p less than 0.001). When exposure time was held, differences in survival in samples were statistically significant between 5 and 20 mg/mL concentrations (55.53 vs. 105.85 um, p equals 0.020; 132.53 vs. 245.42 um p equals 0.004; and 18.95 vs. 395.16 um, p less than 0.001 at 0.5, 1, and 2 hours respectively). There was no difference between long-term chondrocytes (p equals 0.093). Short term fibroblasts remained dead at all concentrations by day 6. Long term fibroblasts experienced cell death at 1250 and 250 ug/mL by day 2. Conclusions: Chondrocytes and fibroblasts were affected by doxycycline toxicity, and fibroblasts demonstrated sensitivity to chronicity and dose dependence. Doxycycline is used as an antibiotic and a sclerosing agent for pleurodesis and was recently demonstrated to reduce surgical dead space in rhinoplasties. This study highlights the need for caution when using doxycycline as a sclerosing agent in vivo to achieve the narrow therapeutic window and avoid tissue necrosis.

4:31 The Safety and Efficacy of Perioperative NSAID Usage in Rhinoplasty -- A Systematic Review and Meta-Analysis

Emmi Deckard, BS, Riverside, CA; Ketan Jain-Poster, MD, Oakland, CA; Alexander Rivero, MD, Oakland, CA

Educational Objective: At the conclusion of this presentation, participants should be able to identify the benefits of using NSAIDs for pain relief in rhinoplasty patients and compare the associated risks with postoperative opioid consumption.

Objectives: In the current opioid epidemic, physicians are seeking other forms of multimodal analgesia for postoperative patients including revisiting NSAIDS. Nonsteroidal anti-inflammatory drugs (NSAIDs) have long been argued to increase the risk of bleeding in the postoperative patient. In rhinoplasty, reducing this risk may result in more desirable outcome and less patient morbidity. The goal of this study is to review the primary literature around NSAID use in rhinoplasty and meta-analyze postoperative outcomes. Study Design: This study is a systematic review and meta-analysis of randomized controlled trials and cohort studies evaluating the safety and efficacy of perioperative

NSAID use in rhinoplasty patients. Methods: PubMed, Cochrane, and Web of Science databases were queried for all English language studies containing original data on perioperative NSAID administration in patients undergoing rhinoplasty between 1990 and 2024. Primary outcomes reviewed were postoperative pain, postoperative nausea and vomiting (PONV), postoperative bleeding, and postoperative opioid use. Exclusion criteria included studies without outcome measures. Two investigators independently reviewed all manuscripts and performed quality assessment. Results: Of 620 abstracts identified, 10 studies fulfilled eligibility: 9 randomized control trials and 1 cohort study. Of these, 6 underwent meta-analysis including a total of 470 patients (260 receiving NSAIDs, 210 receiving placebo). Rhinoplasty patients receiving perioperative NSAIDs demonstrated significantly lower postoperative pain (standard mean difference (SMD)=1.20 [95% CI:2.01-0.39, p=0.004]) and total opioid consumption (SMD=1.43 [95% CI:2.23-0.62, p=0.0005]) when compared to controls. Moreover, the occurrence of postoperative nausea and vomiting was 27% less likely in the perioperative NSAID group (odds ratio (OR)=0.27 [95% CI:0.17-0.44, p=0.00001]) when compared to controls. There was no significant difference in bleeding between the perioperative NSAID and control groups (OR=1.28 [95% CI:0.34-4.87, p=0.71]) on meta-analysis. Quality assessment indicated a low risk of bias for all studies. Conclusions: Our systematic review and meta-analysis suggest that NSAIDs are a safe and effective first line analgesic agent for patients undergoing rhinoplasty. NSAID use was not associated with an increased risk of bleeding in the post-surgical timeframe. Importantly. NSAID use is associated with less postoperative opioid consumption, pain, and nausea or vomiting after rhinoplasty. More research is needed to further elaborate the benefits and risks for a broader variety of NSAID agents.

4:37 Functional Comparison of Motor Neurotization with Conventional Nerve Repairs

Randal C. Paniello, MD PhD, St. Louis, MO

Educational Objective: At the conclusion of this presentation, the participants should be able to describe neurotization as an option for repair following nerve injury and compare it with commonly used methods.

Objectives: Motor nerve injuries are often encountered in otolaryngologic practice, including facial nerve, laryngeal nerves, and others. The surgeon may have a choice of nerve grafting or other repair techniques. “Neurotization”, in which a nerve ending is implanted directly into a muscle belly, has received little attention in the literature. This study sought to compare functional results of this approach with more common nerve repair techniques. Study Design: Animal (rat) study. Methods: The right tibial nerve was explored in 48 rats, then treated in 5 randomly assigned study groups: 1) transection with primary reanastomosis (n=12); 2) transection with interposition autograft (n=12); 3) transection with autograft neurotization of tibialis anterior muscle (n=12); 4) transection with no repair (control, n=6); and 5) exploration only (sham control, n=6). At 16 weeks postop, contractile forces of both left (untreated control) and right (experimental) anterior tibialis muscles were measured. Walking track analysis and measures of wet muscle weight were also collected. Histology was completed for axon counts. Results: Muscle strength ratios (experimental vs normal) for groups 1-5 were 78.3%, 56.0%, 44.1%, 8.9%, and 90.8%, respectively. Wet muscle weights, axon counts and walking track measures also followed this pattern. Conclusions: Neurotization with an autograft is a viable method of restoring innervation to a muscle when necessary, but nerve repair and grafting methods provide more viable axons and better functional results and are thus preferred whenever possible.

4:43 The Impact of Social Media on Rhinoplasty Literature: Analyzing the Correlation between Altmetrics and Traditional Bibliometrics

Hannah D. Fleming, BS, Omaha, NE; Rahul Varman, MD, Omaha, NE

Educational Objective: At the conclusion of this presentation, the participants should be able to understand what factors contribute to the altmetric attention score, and how this relates to the scientific value of an article about rhinoplasties.

Objectives: This study aims to investigate the relationship between social media presence and scientific literature on rhinoplasty, and to determine whether a correlation exists between altmetrics and bibliometrics in rhinoplasty research. Study Design: A retrospective review was conducted, analyzing citation data and altmetrics of rhinoplasty related articles using PubMed, Altmetric explorer, and NIH iCite. Methods: A comprehensive literature search was performed on PubMed using “rhinoplasty” as a MeSH or as part of the title/abstract. The search yielded 1,366 articles published between 2010 and 2023. The top 100 articles were selected based on the number of citations in PubMed, listed in descending order. Articles not centrally focused on rhinoplasty were excluded. Results: The three articles with the highest Altmetric Attention Score (AAS) as determined by the altmetrics website were all published

in JAMA Facial Plastic Surgery between 2016 and 2018, with citation counts ranging from 25 to 104. Of the top 100 most cited rhinoplasty articles included, the maximum citation count was 153, minimum 19, average 33.38, median 27, 25th percentile 21.25, and 75th percentile 36.75. The top three AAS values were 126, 123, and 96, placing them in the top 5% of all research outputs scored by altmetric. The elevated AAS was primarily driven by mentions from news outlets and social media platforms like X (formerly Twitter). The correlation coefficient between total citations and AAS of the top 100 articles was 0.23, indicating a weak positive association between AAS and citation count. Conclusions: Although the three articles with the highest AAS were published in JAMA Facial Plastic Surgery, several other articles from the same journal had significantly lower altmetric scores despite higher citation counts. This suggests that high altmetrics may not consistently reflect the scientific impact or value of an article. Nonetheless, authors might consider the altmetric performance of similar articles in their field as a strategy to enhance online visibility.

4:49 Longitudinal Evaluation of Graded Sciatic Nerve Injury and Treatment: Electrophysiology and Functional Recovery

Sachin Narayan, BS, Stanford, CA; Kirin Debnath, Stanford, CA; Katherine Guo, BS, Stanford, CA; Lili He, PhD, Stanford, CA; Jon-Paul Pepper, MD, Stanford, CA

Educational Objective: At the conclusion of this presentation, the participants should be able to understand the time course of recovery after mouse sciatic nerve injuries of varying grades. Electrophysiology and functional recovery have been previously used to evaluate nerve recovery in mice but often only at single timepoints/terminal experiments or as standalone methodologies. By comparing the nerve conduction studies, sciatic functional index, and gait analysis results longitudinally, we can build a more comprehensive picture of recovery that can be used as a benchmark for future evaluation of therapeutics targeted peripheral nerve injury in mouse models.

Objectives: Mouse sciatic injury is an important foundational model to study all peripheral nerve injuries due to common mechanisms of Wallerian degeneration and neuronal cell recruitment. We aim to benchmark recovery following sciatic nerve injuries of graded severity using electrophysiology and functional recovery. Study Design: We subjected three cohorts of FVB mice (N = 12) to increasing grades of sciatic nerve injury: suture repair of transection, nerve conduit repair of transection, and chronic injury without repair. Repair groups were longitudinally evaluated for 10 weeks, while chronic injury mice were analyzed 3 months post-transection. Methods: Nerve conduction studies (NCS) using sciatic notch and supramalleolar stimulation with gastrocnemius and foot recording captured conduction velocity, latency, amplitude, and waveform quality (Nicolet VikingQuest). NCS results were benchmarked against contralateral uninjured nerves. Functional recovery was quantified by the sciatic functional index (SFI) and gait analysis (Kron Technologies Chronos 1.4 high speed camera). SFI represents foot muscle activation on scale of 0 (healthy) to -100 (fully impaired). Gait analysis through DeepLabCut and supervised learning computer vision models evaluated the swing phase, foot strike, and horizontal displacement of each step. Results: Chronic injury mice remained persistently impaired at 3 months post-transection (SFI -82.2 +/- 5.12). NCS identified compensatory nerve conduction pathways, absent sciatic nerve conduction, and increased latency. Preliminary analysis reveals the highest rates of functional (SFI -78.76 +/- 5.44 [wk.1] to -39.24 +/- 6.54 [wk.7]) and electrophysiological recovery for suture repaired mice, while recovery in conduit repaired mice plateaus by wk.5 electrophysiology and wk.8 SFI (-62.67 +/- 3.99). 33% of mice exhibited extensive autotomy of the injured foot, confounding SFI calculations and thereby prioritizing gait analysis. Conclusions: We established longitudinal benchmarks of functional recovery and electrophysiology of mice undergoing three grades of sciatic nerve injury and treatment common within clinical practice. These results underpin future studies evaluating neurotrophic drug treatments for nerve injury.

4:55 Using Artificial Intelligence to Perform Measurements of Facial Rejuvenation Surgery Values

Ziyang Li, MS, Lubbock, TX; Reesha Yadav, BS, Omaha, NE; Markus Ma, MS, Philadelphia, PA; Rahul Varman, MD, Omaha, NE

Educational Objective: At the conclusion of this presentation, the participants should be able to 1) describe/understand the advantages and limitations in the application of artificial intelligence (AI); and 2) explain the significance of integrating AI framework into future surgical practice.

Objectives: This study investigates whether artificial intelligence models can perform accurate measurements used in facial rejuvenation surgery by training a deep learning framework and comparing manual measurements with automated machine learning measurements. Study Design: Retrospective cohort study. Methods: We utilized a

dataset of 500 preoperative and postoperative images of facial paralysis reconstruction measured using both ImageJ manually and a trained deep learning model. Data processing was performed using OpenCV. Feature extraction was performed using Dlib for facial landmark detection, followed by training a convolutional neural network (CNN) using TensorFlow. Measurements of the pre and postoperative photos include cheek peak position, cervicomental angle, facial symmetry, skin laxity, and volume loss. Manual measurement and automated machine learning measurements were compared. Results: Pending. Preliminary data indicated significant measurement differences initially (between 5 to 10 degrees), however, measurement differences were reduced as more images were inputted when training the deep learning model. There is no significant difference in the types of facial metrics measured. Conclusions: Traditional computing applications for facial metrics measurements take extensive time and labor. Trained deep learning models can be used to objectively provide measurements that assist both surgeons and patients in achieving a better outcome.

5:01 Rethinking the Nasal Valve: A Proof of Concept Fluid Structure Interaction Analysis

Derek H. Liu, MD, Orange, CA; Brian J.F. Wong, MD PhD, Orange, CA

Educational Objective: At the conclusion of this presentation, the participants should be able to understand the significance of the relationship between dynamic valve collapse and nasal airway resistance

Objectives: Computational fluid dynamics (CFD) models of nasal airway obstruction, which use CT based patient specific 3D models, assume a rigid, static geometry that ignores the role of dynamic valve collapse. By incorporating the deformation of the nasal valve, this fluid structure interaction (FSI) study extends upon previous CFD models to characterize the effect of dynamic valve collapse on nasal airway resistance. Study Design: Computational two way FSI model. Methods: Using an average 3D nasal cavity geometry, an anterior region of deformation was defined from the nares to the head of the inferior turbinate and was modeled using mechanical properties of nasal soft tissue. Posteriorly, the nasal airway was defined as a rigid body. Airflow velocity was simulated as a sinusoid with a peak outlet velocity of -350mL/s (resting inspiration) and -1000mL/s (forceful inspiration) at the choana. These models were then repeated with the nasal airway defined entirely as a rigid body. Results: Under forceful inspiration conditions, the maximum deformation was 0.17mm. At the internal nasal valve, the bilateral total cross-sectional area (CSA) decreased from 1.693cm2 to 1.660cm2, a difference of 0.033cm2. Nasal airway resistance measured 0.0339Pa/cm3/s, a 3.1% increase compared to 0.0329Pa/cm3/s in a rigid model. Under resting inspiration conditions, maximum deformation was 0.02mm and INV CSA decreased by 0.004cm2. Nasal resistance of the deformable model was 0.0188Pa/cm3/s, a 0.3% increase compared to 0.0187Pa/cm3/s for the rigid model. Conclusions: This proof of concept model of a deformable nasal airway estimates changes in CSA during inspiration which are similar to in vivo values previously obtained using optical coherence tomography. Our results suggest that dynamic valve collapse may not significantly increase nasal airway resistance.

5:07 A Longitudinal Assessment of Patient Reported Appearance, Aesthetic Satisfaction, and Social Functioning following Head and Neck Microvascular Free Flap Reconstruction

Reta Behnam-Hanona, BA, San Francisco, CA; Nina Patel, MS MPhil, San Francisco, CA; Aarti Agarwal, MD, San Francisco, CA; Andrea M. Park, MD, San Francisco, CA; P. Daniel Knott, MD, San Francisco, CA

Educational Objective: At the conclusion of this presentation, the participants should be able to understand the relationship between time and long term aesthetic satisfaction and appearance related psychosocial functioning after head and neck microvascular reconstruction.

Objectives: There are a paucity of longitudinal data describing aesthetic outcomes following head and neck microvascular reconstruction and no data comparing preoperative satisfaction with long term postoperative appearance. As patient survival improves for HNC, it is critical to understand the impact of surgical treatment upon aesthetic outcomes over the patient's life course. Study Design: 455 web based FACE-Q surveys were prospectively collected, both pre and postoperatively, at an academic tertiary care center from June 2018-July 2024. Methods: Three FACE-Q scales were used to evaluate patient reported outcomes: satisfaction with facial appearance, appearance related psychosocial distress, and social function scales. Univariable and multivariable analyses were conducted. Results: Two hundred and sixty-eight subjects (64.7 +/- 14.7 years of age) were enrolled with 408 unique face scores, 406 stress scores, and 419 social function scores. Mean pre and postoperative facial appearance satisfaction scores were 26.6 and 27.6, respectively. Mean pre and postoperative social function scores were 22.2 and 22.1, respectively. Mean pre and postoperative psychosocial distress scores were 15.6 and 16.1, respectively. Over time, the mean postoperative

facial appearance satisfaction scores at less than 1 month postoperatively were 30.7 ($p<0.015$), 27.8 at 1-3 months, 27.4 at 3-6 months, 26.4 at 6-12 months, 27.2 at 12-24 months, and 29.2 at greater than 24 months. Besides facial appearance satisfaction scores at <1month postoperatively, there were no significant statistical differences in FACE-Q scores across all three scales over time, even when accounting for complications. Conclusions: The findings of this longitudinal study indicate that after 1 month patients' postoperative satisfaction returns to preoperative levels. This suggests that microvascular reconstruction patients may be more resilient over time in regard to aesthetic outcomes than previously anticipated.

5:13 Q&A

5:18 ADJOURN

FRIDAY, MAY 16, 2025

7:00 Business Meeting / New Fellow Ceremony and Reception

Concurrent Sessions 8:30 - 10:15

Session 2: Head and Neck
Celestin ABC

PANEL

8:30 - 9:15 Molecular Tests for Thyroid Nodules: Meaningful or Misleading?

Moderator:

Luc G.T. Morris, MD FACS MSc, New York, NY

Panelists:

Elizabeth E. Cottrill, MD, Philadelphia, PA
Allen S. Ho, MD, Los Angeles, CA
Marika D. Russell, MD FACS, Boston, MA

Moderators
Miriam Lango, MD FACS, Houston, TX
Pierre Lavertu, MD FACS, Cleveland, OH

9:20 Online Video Training for Management of Postoperative Neck Hemorrhage
Takeshi Takahashi, MD PhD, Niigata, Japan; Arata Horii, MD PhD, Niigata, Japan

Educational Objective: At the conclusion of this presentation, the participants should be able to utilize the online video training to become familiar with the management of postoperative neck hemorrhage.

Objectives: Postoperative neck hemorrhage (PNH) and following hematoma formation is a well documented complication of head and neck surgeries, which can result in serious airway stenosis. Rapid response is necessary as a team from co-medicals to surgeons to the fatal situation. For this purpose, we built up and evaluated an online training video designed to help participants easily grasp the key points described in the consensus statement on the management of PNH published by the Japanese Center for Medical Safety and Assistance. Study Design: The prospective cohort study. Methods: This prospective study was conducted remotely at the otorhinolaryngology department from seven hospitals (two university hospitals and five general hospitals) from January to March 2023. Several data were collected and compared between before and after viewing the video program. Results: A total of 101 nurses were involved in the study. Before viewing the video, there were significant differences in a notice of the risk of asphyxia and knowledge of its causes between those with and without experience of PNH ($p = 0.01$ and < 0.01, respectively). After viewing the video, recognition of oxygen saturation and hematoma removal significantly improved ($p < 0.01$), and their confidence in PNH management significantly increased, regardless of prior PNH experience ($p < 0.01$). Conclu-

sions: As part of the training to facilitate management of PNH, we built up an online training system using a self-made video. This video training was found to be useful for learning the knowledge highlighted in the consensus statement on the management of PNH, which increased confidence for managing PNH. We hope that the online training using this video will be widely implemented and that it will help to save patients' lives by providing appropriate and prompt management of PNH emergencies.

9:26 Social Vulnerability Index as a Tool to Evaluate the Distribution of Head and Neck Oncology Surgeons in the United States

Asher C. Park, BS, Chicago, IL; Milan P. Fehrenbach, BS, Bowling Green, KY (Presenter); Los Angeles, CA; Katelyn O. Stepan, MD, Chicago, IL

Educational Objective: At the conclusion of this presentation, the participants should be able to understand associations between the geographic distribution of head and neck oncology surgeons (HNS) in relation to social determinants of health (SDoH) as measured by the Social Vulnerability Index (SVI) across the U.S.

Objectives: To assess associations between the geographic distribution of head and neck oncology surgeons (HNS) in relation to social determinants of health as measured by the Social Vulnerability Index (SVI). Study Design: Cross-sectional study. Methods: A dataset of U.S. based HNS and their practice addresses were obtained from the American Academy of Otolaryngology-Head and Neck Surgery (AAO-HNS) directory, American Head & Neck Society (AHNS) fellowship graduate list, and institutional websites. U.S. Census tracts were scored on a continuous scale of social vulnerability (0-1) across overall SVI and its four subthemes: socioeconomic status (SS), household composition and disability status (HH), racial ethnic minority status (RE), and housing and transportation status (HT). The distance from each census tract centroid to the nearest HNS were calculated, and univariable linear regression analyses were performed to assess associations between SVI scores and these distances. Results: This study included 609 head and neck surgeons. Higher overall social vulnerability (β = 12.9, [95% CI: 11.05 to 14.69]), SS (β= 11.5, [95% CI: 9.67 to 13.32]), HH (β= 10.4, [95% CI 8.61 to 12.27]), and HT (β= 18.2, [95% CI: 16.42 to 20.06]) were associated with significantly increased distance to the nearest HNS. In contrast, higher social vulnerability in RE was associated with significantly decreased distance to the nearest HNS (β= -25.8, [95% CI: -27.64 to -24.01]. Conclusions: SVI may serve as a potential tool to help identify socially vulnerable areas lacking access to head and neck cancer care.

9:32 Associations between Non-Tobacco Nicotine Use and Free Flap Complications in Head and Neck Cancer

Larry W. Wang, MS, Chicago, IL; Asher C. Park, BS, Chicago, IL; Milan P. Fehrenbach, BS, Lexington, KY; Oluwatobiloba Ayo-Ajibola, BS, Los Angeles, CA; Katelyn O. Stepan, MD, Chicago, IL

Educational Objective: At the conclusion of this presentation, the participants should be able to understand associations between non-tobacco nicotine use and free flap repair complications in head and neck cancer (HNC) patients.

Objectives: To assess associations between non-tobacco nicotine usage and free flap repair complications in HNC patients. Study Design: Retrospective cohort study. Methods: This study queried the TriNetX health database for HNC patients who underwent free flap procedures using CPT and ICD-10 codes. Cohort A included those that had a nicotine dependence, but no use of cigarettes, chewing tobacco, or other tobacco products. Cohort B included patients with no nicotine dependency before surgery. Following patient identification, the cohorts were propensity matched based on age, sex, ethnicity, and comorbidities (cardiovascular diseases, diabetes, obesity, nutritional deficiencies, kidney diseases, and factors influencing health). Risk difference (RD), relative risk (RR), 95% confidence intervals (CI), and associated p values were used to evaluate associations. Primary outcomes were receipt of a secondary free flap procedure (or blood vessel repair) or another revisionary procedure within 30 days of the primary flap. Secondary outcomes included infection, pneumonia, or cardiopulmonary complications within 30 days. Results: Following propensity matching, 2336 patients were included in this study. No significant differences in the incidence of secondary free flap procedures or blood vessel repair were observed between cohorts. However, the incidence and relative risk of revisionary procedures were significantly higher among cohort A (RD, 0.045; 95% CI, 0.018-0.071; $p<0.001$; RR, 1.47; 95% CI, 1.170-1.843; $p<0.001$). For secondary outcomes, cohort A also demonstrated significantly greater incidence and relative risk of pneumonia (RD, 0.033; 95% CI, 0.013-0.052; $p<0.001$; RR, 1.76; 95% CI, 1.256-2.467; $p=0.001$). Conclusions: Non-tobacco nicotine use is associated with increased risk of postoperative free flap revision procedures and pneumonia in HNC patients following free flap reconstruction.

9:38 Intraoperative Surgical Microbreaks Improve Physical and Mental Workload Burden without Prolonging

Operative Time in Head and Neck Endocrine Surgery

Maria Anna Mavrommatis, MD, New York, NY; Brian Deutsch, MD, New York, NY; Maura K. Cosetti, MD, New York, NY; Raymond L. Chai, MD, New York, NY

Educational Objective: At the conclusion of this presentation, the participants should be able to understand the utility of intraoperative microbreaks in head and neck endocrine surgery as it relates to physical and mental workload burden and operative time.

Objectives: Our objectives were twofold: 1) to determine whether intraoperative microbreaks (MBs) prolong operative time; and 2) to examine the impact of MBs on mental and physical workload burden among otolaryngology residents performing head and neck endocrine surgery. Study Design: Prospective, observational case crossover study. Methods: Each resident's rotation is divided evenly into non-MB and MB periods. In the latter, surgeons take a 60 second unstructured intraoperative microbreak every 30 minutes during 4 candidate endocrine procedures: total thyroidectomy, hemithyroidectomy, completion thyroidectomy, and parathyroidectomy. Case length, number of MBs taken, type of procedure, and order of case within the day were recorded. At the end of each week in both periods, participants complete the NASA Task Load Index (NASA-TLX) survey. Participants complete an additional survey addressing their subjective MB experience at the end of their rotation. Demographic information including age, sex, post-graduation year (PGY) level, home exercise practice, and meditation practices were also collected. Our main outcome measures were operative time and NASA-TLX survey results. Results: 13 otolaryngology residents (30.8% female with a median age of 30 years old) participated in this study. There were 230 procedures meeting inclusion criteria during the study period with 104 (45.2%) occurring during the MB period. There was no significant difference in operative time between periods for all 4 procedures (p=0.25-0.83). Total NASA-TXI score was significantly lower in the MB period compared to the non-MB period ($p<0.0001$). All 13 residents endorsed an improvement or no change in physical and mental workload metrics: 77% noted improvement in physical performance, 92% in mental focus, 92% in sense of psychological fatigue, 92% in sense of musculoskeletal fatigue, and 77% in sense of stress. All participants expressed interest in incorporating MBs into their future practice. Conclusions: Intraoperative MBs can decrease physical and mental workload burden without prolonging operative time in head and neck endocrine surgery.

9:44 RAI Is Superior to mFI-5 in the Prediction of Postoperative Adverse Outcomes in Thyroidectomy and Parathyroidectomy Surgeries

Akshay Kumar Warrier, BA, Newark, NJ; Rohan Singh, BS, Newark, NJ; Christian Bowers, MD, Flint, MI; Richard K. Gurgel, MD, Salt Lake City, UT; Hilary McCrary, MD MPH, Salt Lake City, UT

Educational Objective: At the conclusion of this presentation, the participants should be able to understand the comparative benefit of the Risk Analysis Index (RAI) over the Modified Frailty Index-5 (mFI-5) in predicting adverse outcomes in patients undergoing thyroidectomy and parathyroidectomy surgeries.

Objectives: Evaluate and compare the use of RAI vs. mFI to predict postoperative outcomes following thyroid and parathyroid resections. Study Design: Retrospective database study. Methods: Patients undergoing thyroidectomy or parathyroidectomy from the 2005-2020 NSQIP dataset were analyzed. Frailty was measured using RAI and mFI-5, and patients were categorized as prefrail, frail, or severely frail. Univariate and multivariate analyses were performed, and receiver operating characteristic (ROC) curves compared the indices' predictive capabilities. Results: A cohort of 30,362 patients (mean age 55 years, 75.9% female, 58.8% white) was identified. Both RAI and mFI-5 were significant predictors of mortality (RAI OR: 15.508, mFI-5 OR: 19.189, $p<0.001$), Clavien-Dindo complications, extended length of stay (RAI OR: 9.480, mFI-5 OR: 10.539, $p<0.001$), and non-home discharge (RAI OR: 15.897, mFI-5 OR: 17.037, $p<0.001$). RAI, but not mFI-5, predicted organ/space infection (OR 5.487, $p<0.05$). RAI demonstrated superior discrimination for extended length of stay (C-stat RAI:0.677, mFI:0.596), non-home discharge (C-stat RAI:0.730, mFI:0.639), Clavien-Dindo II events (C-stat RAI:0.707, mFI-5 0.566), and infection (C-stat RAI:0.703, mFI-5:0.519) ($p<0.05$). Conclusions: Both the RAI and mFI-5 frailty indices are significant predictors of adverse events in thyroidectomy and parathyroidectomy surgeries. While the mFI-5 has stronger associations with these outcomes, the RAI demonstrates superior predictive accuracy for predicting postoperative morbidity in this patient population. This suggests RAI may be a better tool for identifying high risk patients and informing perioperative decision making, patient counseling, and resource allocation. Further research should explore RAI's predictive utility in other otolaryngology populations.

9:50 Therapeutic Utility of Contemporary Infusion Submandibular Sialography

Evgeniya Molotkova, BS, Iowa City, IA; Piper Wenzel, BS, Iowa City, IA; Kailey Henkle, MS, Iowa City, IA; Joan Maley, MD, Iowa City, IA; Henry Hoffman, MD, Iowa City, IA

Educational Objective: At the conclusion of this presentation, the participants should be able to examine the therapeutic value of diagnostic digital infusion submandibular sialography.

Objectives: Contemporary sialography (salivary duct cannulation, dilation, and radiocontrast insufflation) couples mechanical ductal dilation with hydrodilation and utilizes iodinated contrast with antimicrobial properties to generate diagnostic data. This procedure has been reported to have therapeutic value that has not been investigated in a large series. Study Design: Retrospective chart review of a consecutive series of submandibular sialograms from April 2008 to June 2024. Methods: Review focused on symptomatic response to sialography. Results: Review identified 125 submandibular sialograms with followup addressing post-study symptom assessment available in 64. Indications for sialography in this group included pain (6/64), swelling (23/64), or both (35/64). Symptomatic improvement following sialography was reported in 67% of cases (43/64). Timing of symptomatic assessment ranged from immediately after sialography to 3,244 days after (median = 125 days). The diagnosis of a distal stricture was associated with a higher rate of symptom improvement (80%) when compared to other diagnoses (49%) (p=0.048). The complete relief of symptoms following sialography was highly associated with the diagnosis of a distal stricture (p = 0.008). Those reporting initial complete relief of symptoms rarely (12%) required additional treatment during the followup period (p = 0.018). Conclusions: Diagnostic submandibular sialography is often therapeutic. Study is ongoing to prospectively evaluate the impact of this procedure on symptom relief.

9:56 Quantification of Post-Resection Tissue Deformation in the Oral Cavity: A Cadaveric Study

Sindhura Sridhar, BS, Nashville, TN; Qingyun Yang,, Nashville, TN; Kyvia Pereira, Nashville, TN; Michael I. Miga, PhD, Nashville, TN; Jie Ying Wu, PhD, Nashville, TN; Michael C. Topf, MD, MSCI, Nashville, TN

Educational Objective: At the conclusion of this presentation, the participants should be able to understand how tissue shrinkage can impact the planning of oral cavity surgical margins.

Objectives: Margin status is an important prognostic factor in oral cavity cancer with clear margins typically defined as greater than 5 mm from invasive carcinoma. Wide resection margins must be balanced with the anatomic confines of the oral cavity and need to preserve normal tissue. Tissue shrinkage can make the planning of surgical margins challenging. In this fresh cadaveric study, we aim to quantify mucosal shrinkage in cautery based oral resections. Study Design: Observational cadaveric study. Methods: Three cadavers were used to perform eleven resections of the oral cavity with monopolar electrocautery. Resection sites included the oral tongue, buccal mucosa, and lip. Reference points were marked with sutures indicating the anterior, posterior, superior, and inferior margins. Specimen and resection cavity measurements in the anterior posterior and superior inferior dimensions were recorded immediately before and after resection. Mean percent change between pre- and post-excision measurements was calculated in each dimension for each specimen and the resection bed. Paired sample t-tests were used to compare pre-excision and post-excision measurements. Results: The overall mean shrinkage of the resected specimens was 23.2% (95% CI 17.4-28.9%, p <0.01). Shrinkage was greatest in the anterior posterior dimension (25.2%) compared to the superior inferior (21.1%). Buccal mucosa had the greatest mean shrinkage (32.4%), followed by the oral tongue (15.6%) and lip (15.5%). The mean increase in resection cavity size was 6.5% (p = 0.64, 95% CI -9.9-22.9%). Mean increase in the resection bed defect in the anterior posterior dimension was 17.8%. The superior inferior dimension demonstrated mean shrinkage (4.8%). The lip resection bed had the greatest mean increase in size (15.2%), followed by buccal (7.2%), and oral tongue (2.4%). Conclusions: In this fresh/frozen cadaveric study, oral cavity mucosa of the resection specimen had a mean shrinkage of 23.2% after resection with monopolar electrocautery. Mucosal shrinkage is an important consideration in the planning of oral cavity surgical margins.

10:02 Machine Learning Based Predictions of Long Term Improvement following Sialendoscopy for Nonobstructive Chronic Sialadenitis

Yeo Eun Kim, BA, New York, NY; Sanjana Kaza, BS, New York, NY; Nicolas Mjaess, BS, New York, NY; Xiaoxuan Chen, BA, New York, NY; David I. Kutler, MD, New York, NY

Educational Objective: At the conclusion of this presentation, the participants should be able to predict and identify key factors contributing to long term improvement in patients undergoing sialendoscopy for nonobstructive chronic sialadenitis, using machine learning (ML) methods and statistical analysis.

Objectives: To predict and identify key factors contributing to long term improvement in patients undergoing sialendoscopy for nonobstructive chronic sialadenitis, using machine learning (ML) methods and statistical analysis. Study Design: Retrospective study with prospective follow-up by questionnaire. Methods: Adult patients who underwent sialendoscopy for nonobstructive chronic sialadenitis were retrospectively identified and sent questionnaires to assess symptom control and overall long term improvement. Clinicodemographic data and improvement outcomes were collected. Student's t-test and Fisher's exact testing were used to compare cohorts with and without long term improvement. ML methods, including CatBoost, LightGBM, and random forest, and statistical analysis using logistic regression were performed. Results: Sixty-three patients were included (mean age: 52 +/- 16 years; 47 (75%) female). Median followup time was 57 months (range: 18-133 months). Fifty-one patients (81%) achieved short term improvement, while 41 (65%) achieved long term improvement. Of the patients who achieved long term improvement (mean age: 55 +/- 16 years), 29 (71%) were female and 8 (20%) had radioactive iodine (RAI) induced sialadenitis. Compared to the non-improvement cohort, there were no significant differences in age (49 +/- 15 years; p=0.1650), sex (18 female (81%); p= 0.3815), and etiology of chronic sialadenitis (5 RAI (24%); p=0.7552). Postoperative long term improvement was poorly predicted using statistical analysis (AUROC=0.59, F1-score=0.72). Of the ML methods, CatBoost showed improved performance (AUROC=0.68, F1-score=0.76) in terms of predicting long term improvement post-surgery. Conclusions: This is the first study to predict long term outcomes in patients undergoing sialendoscopy for nonobstructive chronic sialadenitis. The rate long term improvement was 65%. Machine learning methods showcase the potential to predict long term improvement post-sialendoscopy using short term outcomes and clinicodemographic data.

10:08 Q&A

Session 3: Pediatric Otolaryngology
Celestin D

Moderators
Sarah N. Bowe, MD FACS, Ft. Sam Houston, TX
Anna H. Messner, MD, Houston, TX

8:30 Factors Associated with the Transition from CPAP to Hypoglossal Nerve Stimulation in Pediatric Patients with Down Syndrome

J.B. Eyring, BS, Salt Lake City, UT; Christopher Stewart, BA, Joplin, MO (Presenter); Brandon M. Hemeyer, BS, Salt Lake City, UT; Tanner B. Heaton, BS, Salt Lake City, UT; Jill S. Jeffe, MD, Salt Lake City, UT; Jeremy D. Meier, MD, Salt Lake City, UT

Educational Objective: At the conclusion of this presentation, the participants should be able to identify demographic and otolaryngological factors influencing the transition from CPAP to hypoglossal nerve stimulation (HGNS) in light of the recent FDA approval of HGNS for adolescents with Down syndrome.

Objectives: This study aimed to identify demographic factors and otolaryngological conditions associated with the need for HGNS in pediatric patients who initially received CPAP for obstructive sleep apnea (OSA). Study Design: A retrospective cohort study using a multicenter database including 29 health systems across the United States (TriNetX Research Network). Pediatric Down syndrome patients who transitioned from CPAP to HGNS were compared to those treated with CPAP alone. Methods: We identified 914 pediatric patients (<18 years old) with Down syndrome treated with CPAP for OSA, 18 of whom later required HGNS. Demographic variables (race, gender, age) and otolaryngological conditions (tonsillar hypertrophy, eustachian tube disorders) were analyzed to determine their association with the transition to HGNS. Results: Patients who transitioned to HGNS were more likely to be White non-Hispanic (82% vs. 62%, p<0.01), older (15.6 +/- 2.79 years vs. 10.5 +/- 4.7 years, p<0.0001), and male (82% vs. 55%, p<0.05) compared to those who remained on CPAP. Tonsillar hypertrophy (71% vs. 39%, p<0.01) and eustachian tube disorders (82% vs. 53%, p<0.05) were also significantly more prevalent in the HGNS group. Conclusions: To our knowledge, this is the first study of predisposing factors to progression to HGNS therapy in pediatric Down syndrome patients. These findings suggest that patients who are white, older, or male, or have been diagnosed with tonsillar hypertrophy or eustachian tube dysfunction are more likely to transition from CPAP to HGNS. This is likely multifactorial, influenced by clinical guidelines, likelihood of CPAP failure, access to high cost procedures, and shared decision

making. Further research is needed to understand how these factors influence the transition to HGNS in this high risk population.

8:36 Housing and Economic Insecurity Leads to Decreased Rates of Tympanostomy Tube Placement

Allison Epstein, BS, Cleveland, OH; Jamil Hayden, MD, Cleveland, OH; Ross Rosen, BS, Cleveland, OH; Emily Youner, MD, Cleveland, OH; Todd Otteson, MD MPH, Cleveland, OH

Educational Objective: At the conclusion of this presentation, the participants should be able to assess socioeconomic differences in tympanostomy tube placement (TTP) for pediatric patients with otitis media (OM).

Objectives: The primary objective is to determine if there is a lower rate of TTP for children with OM and housing and economic insecurity (HEI). The secondary objective was to assess rates of concurrent speech delay. Study Design: Retrospective study using a multicenter research network database. Methods: The TriNetx Analytics Network was queried using CPT and ICD-10 codes for pediatric patients with a history of OM. An analysis using propensity matched cohorts was performed to assess the relationship between HEI and the rates of TTP and speech delay. Results: A total of 1,978,773 pediatric patients with OM were identified. Of those, 13,030 patients were identified as having HEI. After matching by demographics, patients with HEI were less likely to undergo TTP than those without HEI (2.93% vs. 6.15%, $p<0.001$). Housing insecurities had the greatest association with decreased TTP (OR 0.449, 95% CI 0.362,0.557), followed by transportation insecurities (OR 0.545, 95% CI 0.39,0.762) and financial insecurities (OR 0.907, 95% CI 0.691, 1.193). Patients with HEI had higher odds of having speech delays prior to TTP (OR 1.8171, $p<0.0001$) rather than those without HEI. Conclusions: Patients with housing and economic insecurity have significantly lower rates of tympanostomy tube placement after otitis media, but higher rates of speech delay prior to tympanostomy tube placement.

8:42 Intraprocedural Complications and Operating Room Conversion Rates Associated with In Office Automated Tympanostomy Tube Delivery Systems in Pediatric Patients: MAUDE Database Analysis and Literature Review

Emily Antoinette Clementi, BA, Washington, DC; Seetha Aribindi, BA, Washington, DC; Earl Herberto Harley, MD, Washington, DC

Educational Objective: At the conclusion of this presentation, the participants should be able to recognize complications that necessitate the conversion of tympanostomy tube placement from in office procedures using automated delivery systems to operating room interventions employing standard surgical techniques in pediatric patients.

Objectives: To identify complications leading to unsuccessful procedures in pediatric patients undergoing tympanostomy tube (TT) placement with automated delivery systems, and to determine the incidence at which these complications warrant transitioning from in office procedures to operating room (OR) interventions. Study Design: A systematic review of the literature and an analysis of the Manufacturer and User Facility Device Experience (MAUDE) database were conducted from January 1, 2010, to August 15, 2024. Methods: A systematic approach following PRISMA guidelines was used to identify publications related to in office automated tympanostomy tube delivery systems from the Medline, Embase, Cochrane CENTRAL, and Web of Science databases. The MAUDE database was queried using the product class “tympanostomy tube delivery system with drug” and relevant manufacturers. The primary outcomes extracted from these sources were adverse events contributing to procedural failure and the rate of escalation from in office to operating room procedures. Results: Across five manuscripts involving 668 patients and 16 MAUDE entries, the overall complication rate was 10%. The most common adverse events leading to procedural failure were excessive movement or behavioral intolerance (43%), inadequate anesthesia (23%), and difficult anatomy or lack of visualization (13%). Of the 69 intraprocedural complications where the automated system failed to independently deliver TTs, 33 patients required surgical intervention in the OR, while traditional instruments were used to treat 13 ears in the office. The overall rate of escalation from in office to OR procedures was 4.8%. Conclusions: Patients, parents, and providers should be informed of the potential risks associated with in office automated tympanostomy tube delivery systems, particularly factors that can lead to premature case abortion and warrant conversion to the OR. Understanding these challenges can help guide a more informed shared decision making process, ensuring that the approach is tailored to the individual needs and comfort of each patient.

8:48 The Effect of Adenotonsillectomy on Sleep Architecture in Pediatric Patients with Obstructive Sleep Apnea

Basir S. Mansoor, BS, Dallas, TX; Matthew Zhang, BS, Dallas, TX; Varun Pasapula, BS, El Paso, TX; Romaine F. Johnson, MD MPH, Dallas, TX

Educational Objective: At the conclusion of this presentation, the participants should be able to gain an understanding of the complex relationship between adenotonsillectomy (T&A) and sleep architecture in pediatric patients.

Objectives: To evaluate the impact of pediatric T&A on sleep architecture (e.g., sleep stages, sleep efficiency, arousals) in children with obstructive sleep apnea (OSA). Study Design: Retrospective case series. Methods: We analyzed 300 consecutive children (ages 1-18) who underwent full night polysomnography (PSG) pre- and post-T&A from January 2021 to March 2022. Patients were stratified into severe and very severe OSA groups. Significant correlations were assessed using Pearson correlation coefficients. Results: The study included 233 (77.7%) severe and 80 (27%) very severe OSA patients preoperatively, with a cohort average age of 6.85 +/- 4.83 years, BMI of 24 +/- 9.12, 61% male, and 55% Hispanic. T&A reduced the mean AHI from 23.51 to 6.25 ($p<0.001$). Postoperatively, patients with persistent severe OSA (23.3%) continued to show significantly reduced total sleep time (TST) (350.54 vs. 413.73 minutes, $p<0.001$), lower N2 and N3 sleep (176.13 vs. 199.3 minutes, $p=0.002$; 89.54 vs. 109.63 minutes, $p=0.001$), decreased REM sleep (69.56 vs. 91.43 minutes, $p<0.001$), and increased arousal index (15.65 vs. 10.34, $p<0.001$) compared to those without severe OSA. Patients with persistent very severe OSA (6.3%) postoperatively showed even more pronounced differences in sleep architecture, particularly in N3 sleep (75.37 vs. 106.94 minutes, $p=0.003$) and REM sleep (55.11 vs. 88.42 minutes, $p<0.001$). Pearson correlation coefficients revealed that changes in TST were strongly associated with changes in stage N2 and N3 sleep ($r = 0.74$; 95% CI, 0.68 to 0.79, $p<0.001$; $r = 0.34$; 95% CI, 0.23 to 0.44; $p<0.001$) as well as REM sleep ($r = 0.68$; 95% CI, 0.61 to 0.74, $p<0.001$). Conclusions: T&A improved sleep architecture and reduced AHI in pediatric OSA patients, though some continued to show impaired sleep postoperatively, highlighting the need for further interventions. These findings emphasize the importance of individualized care and future research to optimize outcomes in severe cases.

8:54 Parental Decision Making in Management of Childhood Hearing Loss: A Scoping Review

Amy E. Ensing, BS, St. Louis, MO; Meha Pandya, BS, St. Louis, MO; Richard B. Speaker, MBBCh, St. Louis, MO; Judith E.C. Lieu, MD MSPH, St. Louis, MO

Educational Objective: At the conclusion of this presentation, the participants should be able to 1) recognize common themes when parents choose a hearing device for their child; and 2) understand key differences in how parents make decisions regarding cochlear implants vs other hearing devices.

Objectives: When counseling parents regarding management of their child's hearing loss (HL), understanding parents' motivations is paramount. Our objective is to synthesize factors in parental decision making for HL management in the existing literature. Study Design: Scoping review. Methods: A medical librarian conducted a literature search for publications on parental decision making in their child's HL management. Two reviewers independently assessed studies and extracted representative quotes for thematic analysis. Results: From 404 abstracts, 145 were potentially relevant, and 41 studies were included. Of these, 25 (61%) discussed cochlear implants (CIs), 8 (19.5%) discussed other hearing devices, and 8 (19.5%) addressed both. Three broad themes emerged: practical considerations, value based considerations, and information gathering. Key subthemes in CI decision making were child autonomy (15/33; 45%), potential complications (15/33; 45%), oral communication (20/33; 61%), and the child's future development/opportunities (15/33; 45%). Parents considering other hearing devices were concerned about device aesthetics and bullying/stigmatization (8/16; 50%). Experiences of other families were more important in CI decision making (19/33; 58%) than for other hearing devices (5/16; 31%). Parents reported that medical professionals were biased towards CI (9/33; 27.3%) and felt overtly rushed and pressured. Parents considering other hearing devices reported that information was one sided (5/16; 31%), but did not often feel pressured. Conclusions: Parents considering hearing devices for their children assess practical considerations, personal values, and varied information sources in decision making. Subthemes within these categories differed by device type. Medical professionals should elicit parental values and consider what sources of information parents trust during conversations about hearing devices.

9:00 Factors Influencing Likelihood of Frenotomy in Newborns with Ankyloglossia

Jonathan M. Carnino, BS, Boston, MA; Sanjeev Rampam, BS, Boston, MA; Lindsay R. Salvati, BS, Boston, MA; Jessica R. Levi, MD, Boston, MA

Educational Objective: At the conclusion of this presentation, the participants should be able to identify the demo-

graphic, socioeconomic, and regional factors influencing the likelihood of frenotomy in newborns diagnosed with ankyloglossia and recognize the disparities in treatment based on these factors.

Objectives: This study investigates the factors influencing the likelihood of undergoing frenotomy among newborns diagnosed with ankyloglossia (tongue tie), using data from the 2016 Kid Inpatient Database (KID). Study Design: A retrospective cohort analysis was conducted to assess demographic, socioeconomic, and regional factors associated with frenotomy. Methods: Data were extracted from the KID, which includes information on pediatric inpatient admissions across the United States. Newborns diagnosed with ankyloglossia were identified using ICD-10 codes. The study cohort comprised 47,663 newborns, of which 34.8% underwent frenotomy during newborn admission. Chi square tests were employed to analyze categorical variables, followed by logistic regression to identify factors independently associated with frenotomy. Results: Of the 47,663 newborns diagnosed with ankyloglossia, 16,569 (34.8%) underwent frenotomy. Significant factors associated with increased likelihood of frenotomy included female sex (OR = 1.54, 95% CI: 1.47-1.61), residing in the Midwest (OR = 3.08, 95% CI: 2.93-3.23), and a higher number of ICD-10 procedure codes on discharge (OR = 2.73, 95% CI: 2.66-2.79). In contrast, lower odds of frenotomy were observed among Black (OR = 0.65, 95% CI: 0.61-0.68), Hispanic (OR = 0.73, 95% CI: 0.70-0.77), and Asian or Pacific Islander (OR = 0.823, 95% CI 0.77-0.879) newborns, as well as those from higher income ZIP codes (OR = 0.86, 95% CI: 0.80-0.92). Conclusions: Sociodemographic and regional factors significantly influence the likelihood of frenotomy in newborns with ankyloglossia. These findings highlight disparities in the treatment of tongue tie, suggesting a need for further investigation into the underlying causes of these variations.

9:06 Characterization of Head and Neck Complications in Pediatric Patients with Acute Myeloid Leukemia
Leyn Bashar Shakhtour, BS, Memphis, TN; Aran Sullivan, BA, Memphis, TN; Christina Ward, MD, Memphis, TN; Joshua Wolf, PhD MBBS, Memphis, TN; Seth Karol, MD, Memphis, TN; Celine Richard, MD PhD, Memphis, TN

Educational Objective: At the conclusion of this presentation, the participants should be able to 1) identify common and rare otolaryngologic complications in pediatric patients with acute myeloid leukemia; 2) understand the significance of early diagnosis and management of these complications to improve patient outcomes; and 3) evaluate the relationship between cytogenetic abnormalities, otolaryngologic findings, and treatment strategies on the development of head and neck complications in this patient population.

Objectives: To explore the associations between otolaryngologic complications and the management of acute myeloid leukemia (AML) in children. Study Design: Retrospective cohort study. Methods: Retrospective review of pediatric patients (0-18 years) diagnosed with AML and concurrent otolaryngologic conditions from 2010 to 2024 at a quaternary pediatric oncologic center. Key outcomes assessed included presenting symptoms, cytogenetic abnormalities, otolaryngological findings and imaging, and treatment strategies. Results: Eighty-one out of 440 pediatric patients with AML were identified to have an otolaryngologic condition. The median age was 9.5 years, with a male to female ratio of 1.79:1. Complications included sinusitis (33%), hearing loss (23%), chloroma (18%), epistaxis (8%), facial palsy (6%), thyroid cancer (3%), vocal fold impairment (3%), and neck mass (1%). Among patients with chloroma, the median age was 3 years and 39% required surgery. The median time from AML diagnosis to chloroma diagnosis was 32 days. Development sites included lymph nodes, scalp, sinuses, cranium, middle ear, and mandible. Among sinusitis patients, 26% were diagnosed with invasive fungal sinusitis (IFS) necessitating urgent debridement. 50% of IFS patients and 39% of non-IFS patients died due to refractory AML. Among patients with hearing loss, 65% were sensorineural and 35% were conductive. Ototoxic medication exposure was 35%, with cisplatin (50%), carboplatin (17%), and amikacin (17%) being the most common. Conclusions: The study characterizes the evaluation and treatment of otolaryngologic complications found in children with AML. Early identification of high risk groups and management are key to improving outcomes.

9:12 Drug Induced Sleep Endoscopy Findings in Children: A Systematic Review and Subgroup Analysis
Elise Marianne Krippaehne, BS, Portland, OR; Derek Lam, MD MPH, Portland, OR

Educational Objective: At the conclusion of this presentation, participants should be able to (1) understand the utility of drug induced sleep endoscopy (DISE) in identifying obstructive sites in pediatric obstructive sleep apnea (OSA) patients; (2) recognize the most common sites of obstruction in both surgically naive children and those with post-adenotonsillectomy OSA; (3) identify common surgical interventions based on DISE findings; (4) assess the impact of patient subgroups (age, syndromic conditions, obesity) on the distribution of obstructive sites; and (5) apply these

insights to tailor individualized treatment strategies for pediatric OSA patients based on DISE results.

Objectives: Drug induced sleep endoscopy (DISE) has gained popularity for evaluating obstructive sleep apnea (OSA) in pediatric patients, particularly in those with significant comorbidities or residual disease after adenotonsillectomy (T&A). This study aimed to systematically review and analyze DISE findings in pediatric OSA patients, focusing on obstructive sites across subgroups including age, syndromic conditions, surgically naive patients, and those with post-T&A OSA. Study Design: This study is a systematic review with descriptive analysis. A meta-analysis will be performed on the obstructive sites across subgroups. Results will be available by time of presentation. Methods: A literature search was conducted in Ovid Medline with the assistance of a medical librarian, using terms related to "Sleep Apnea Syndromes", "Pediatrics", "Sedation", and "Endoscopy", covering the database until September 2024. Strict inclusion and exclusion criteria were applied, and study quality was assessed using the Newcastle-Ottawa Scale for bias and the Oxford Centre for Evidence Based Medicine (CEBM) Levels of Evidence for overall quality. Results: The search identified 162 articles, with 35 meeting the inclusion criteria, involving 2,713 pediatric patients. The main reasons for exclusion were adult populations, non-DISE studies, and absence of detailed DISE findings. The overall prevalence of obstruction observed during DISE at specific sites was: nasal airway (43%), nasopharynx (47%), soft palate (37%), oropharynx (48%), tongue base (33%), epiglottis (28%), and arytenoids (15%). Multi-level obstruction was noted in 57%. In post-T&A OSA, the most common obstruction sites were the tongue base (73%) and epiglottis (65%), with 82% showing multi-level obstruction. Following DISE, the most common interventions were revision T&A (69%), epiglottopexy/epiglottoplasty (33%), and tongue base reduction (29%). In surgically naive children, 28% underwent non-T&A procedures, primarily tongue base reduction (11%) and nasal surgery (6%) (turbinate reduction or septoplasty). The highest obstructive rate among different age groups included nasal airway (87%) in infants, nasopharynx (76%) in toddlers, tongue base in preschoolers (56%), young school aged children (54%) and teens (80%). In overweight or obese children, lateral wall and tonsillar obstruction was most prominent (84%). The quality of studies was moderate, mainly due to small sample sizes, nonrandomized designs, and selection bias. Conclusions: DISE provides valuable insight into the distribution of obstructive sites in pediatric OSA patients, with multi-level obstruction being particularly common. These findings may help to inform individualized treatment recommendations based on patient-specific characteristics.

9:18 Q&A

PANEL

9:25 - 10:05 Otolaryngology Aspects of Vaccine Preventable Diseases
Moderator:
Anna H. Messner, MD, Houston, TX
Panelists:
Daniel C. Chelius, MD, Houston, TX
Jill D'Souza, MD, New Orleans, LA
Romaine F. Johnson, MD MPH FACS, Dallas, TX

10:15 BREAK/VISIT EXHIBITORS/VISIT POSTERS

Concurrent Sessions 10:40 - 12:20

Session 4: General
Celestin ABC

PANEL

10:35 - 11:30 Big Data in Otolaryngology
Moderator:
Jennifer A. Villwock, MD, Kansas City, KS
Panelists:
Andres M. Bur, MD FACS, Kansas City, KS
Anais Rameau, MD MPhil, New York, NY
Matthew Shew, MD, St. Louis, MO

Moderators
Christopher G. Larsen, MD MS FACS, Kansas City, KS
Jay F. Piccirillo, MD FACS, St. Louis, MO

11:30 Three Solutions to Reduce Medicare Part D Spending in ENT over 30%: Comparison of Direct to Consumer, Discount Pharmacy, and Federally Negotiated Drug Prices
Thriaksh Rajan, BA, Cleveland, OH; Humzah Quereshy, MD MBA, Cleveland, OH; Johnnie Rose, MD PhD, Cleveland, OH; Todd Otteson, MD MPH, Cleveland, OH

Educational Objective: The educational objective of discussing "Three Solutions to Reduce Medicare Part D Spending in ENT Over 30%: Comparison of Direct-to-Consumer, Discount Pharmacy, and Federally Negotiated Drug Prices" could be to provide healthcare professionals, policymakers, and medical students with a comprehensive understanding of the economic factors affecting Medicare Part D expenditures in ENT care. Key goals would include 1) understanding cost drivers: explore the primary drivers of Medicare Part D spending in otolaryngology, identifying high cost drugs and patterns of prescription that disproportionately contribute to overall expenditure; 2) evaluating cost reduction strategies: analyze the potential impact of three cost-reduction approaches--direct to consumer advertising restrictions, utilization of discount pharmacies, and the implementation of federally negotiated drug prices--on reducing drug costs by over 30%; and 3) comparative effectiveness: compare and contrast the effectiveness of each solution in achieving cost savings, considering economic feasibility, patient access to medications, and potential tradeoffs in quality of care.

Objectives: We compare three alternative models for reducing out of pocket prescription drug costs for Medicare eligible Americans: direct to consumer pharmacies with transparent pricing of generic drugs (e.g., MCCPDC), discount pharmacies offering lower prices through third party negotiations for both generics and brand name drugs (e.g., GoodRx), and federally negotiated pricing that reduces costs by negotiating directly with manufacturers (e.g., VA). By evaluating these models, the study aims to identify cost saving opportunities and enhance Medicare Part D's effectiveness for beneficiaries. Study Design: This retrospective observational analysis used the 2021 Medicare Part D Prescribers data to identify the 25 highest unit price drugs prescribed by ENT physicians, calculating the average cost per 30 day fill to determine expenditures for each drug. Methods: To provide the most conservative estimate of potential savings, pricing for the highest dosage, most expensive formulation of each drug was sourced from MCCPDC, GoodRx, and the VA, with all prices adjusted for monthly wastage rounded to the nearest whole package. The estimated potential cost savings for Medicare were calculated as the difference between what is paid by Part D and the prices under each of the potential alternatives considered. Results: In 2021, ENT physicians totally prescribed 5.7M standardized 30 day fills for Part D drugs and cost Medicare $1.9B, of which the top 25 highest spend drugs account for 78.04% of fills and 79.04% of the cost. Medicare could save $425M annually with MCCPDC drug prices (28.3% reduction) or $452M with VA FSS prices (30.1% reduction). GoodRx pricing could yield $523M in savings annually (34.8% reduction) if Medicare used its lowest prices. However, beneficiaries should be cautious as in the worst case scenario, 18 of the top 25 ENT drugs on GoodRx exceed Medicare costs, potentially increasing expenditures by $622M annually. Conclusions: The three alternative models for sourcing prescription drugs indicate an average 31.1% cost reduction based on lower unit prices, suggesting that Medicare Part D currently pays over 30% more than available market prices. Reducing drug prices through these models would ease government healthcare spending and patient financial burdens, addressing medication nonadherence, drug rationing, and health disparities.

11:36 Geographical and Temporal Trends in Industry Engagement among Otolaryngologists 2017-2023
Christie Hung, AB, New York, NY; Andrew B. Yang, BS, New York, NY; Elliot Morse, MD, New York, NY

Educational Objective: At the conclusion of this presentation, the participants should be able to understand trends in industry payments in otolaryngology.

Objectives: To identify trends in industry payments (IPs) to otolaryngologists from 2017- 2023. Study Design: Cross-sectional retrospective analysis. Methods: We analyzed non-research payments to otolaryngologists 2017-2023 from the Open Payments database, characterized by census region, nature of payment, and temporal trends. Results: 448,093 transactions to 12,879 otolaryngologists worth $85.6 million were found with a median payment per physician of $47.81. Since the COVID-19 pandemic, the total number of payments to otolaryngologists decreased from a mean of 70,903/year ($13.1 million/year) in 2017-2019 to 37,244 in 2020 ($7.7 million) and increased to

66,046 ($12.8 million/year) in 2021-2023. Food and beverage were the most frequent payment type (88% for 17% of total value), but the greatest payment value came from consulting fees (2.6% for 36% of total value). The top 5 states in IPs from 2017-2023, California, Texas, New York, Florida, and Pennsylvania, accounted for 45% of nationwide IPs. While the South had the highest number of individual transactions (42%), mean payment per otolaryngologist was typically higher in the Midwest, Northeast, and West ($1502, $1379, $1374 in 2022, respectively) and lower in the South ($1236), with some varied differences by year. Conclusions: The number of IPs decreased during COVID-19 but has recovered to pre-pandemic levels. While IPs are a key driver of innovation in otolaryngology, there is geographical heterogeneity in otolaryngology non-research payments. The South received lower proportions of payments despite having the most otolaryngologists who receive IPs. Further study is warranted to understand how this impacts regional access to otolaryngology technologies.

11:42 Promoting ENT-erest: Evaluating the Effect of Early, Focused Exposure to Otolaryngology

Kayla B. Hicks, MD, Chapel Hill, NC; Makayla R. Matthews, BS, Chapel Hill, NC (Presenter); Robert Buckmire, MD, Chapel Hill, NC; Rupali Shah, MD, Chapel Hill, NC; Christine DeMason, MD, Chapel Hill, NC

Educational Objective: Participants should understand the components of a focused otolaryngology exposure curriculum including anatomy demonstrations, surgical simulation sessions and career exploration lectures. Participants should understand the impact that this exposure can have on all preclinical medical students.

Objectives: Exposure to otolaryngology throughout medical school is variable, with the majority of students receiving their first exposure in clerkships. This shortens the match timeline for students who pursue otolaryngology and decreases learning opportunities for all students. The aim of the current study is to assess the impact of an otolaryngology curriculum for preclinical medical students. Study Design: Students participated in an otolaryngology education curriculum including a surgical simulation session, anatomy demonstrations, and career exploration lectures. Methods: Session participants were given a survey before and after the final simulation session to assess understanding of otolaryngology concepts and procedures and interest in otolaryngology, consisting of a combination of multiple choice and Likert scale questions (1= strongly disagree or not at all familiar, 5= strongly agree or extremely familiar). Pre- and post-survey results were compared. Results: A total of 39 students completed the pre-survey and 37 completed the post-survey. Roughly half of these students (58%) had prior exposure to otolaryngology, most commonly research (34.6%) and shadowing (30.8%). Of those that completed both surveys, there was a statistically significant improvement in understanding of otolaryngology concepts and procedures ($p<0.05$). Students report that these sessions increased their interest in (4.25/5) and understanding of (4.375/5) otolaryngology, anatomy (3.875/5) and ENT conditions (4.16/5). Conclusions: Early, intentional exposure to otolaryngology not only fosters student interest in the specialty but also improves their understanding of otolaryngologic care. Medical educators should aim to provide focused, early exposure to medical students regardless of their specialty interest to enhance both specialty knowledge and general medical competence.

11:48 Impact of Publishing Models and Cost on Academic Journal Quality Bibliometrics in Otolaryngology - Head and Neck Surgery

Bailey H. Duhon, MS, Houston, TX; David Z. Allen, MD, Houston, TX; Christopher B. Bankston, BS, Houston, TX; Eric K. Kim, MD, San Francisco, CA; Kunal Jain, MD, Houston, TX

Educational Objective: At the conclusion of this presentation, the participants will be able to identify validated bibliometrics in otolaryngology-head and neck surgery and understand their relationship to publishing models and costs. Additionally, attendees will gain insight into how artificial intelligence can assist in the journal selection process.

Objectives: Otolaryngology-head and neck surgery (OHNS) relies on high quality research to implement evidence based patient care. However, the lack of standardized quality metrics in an ever evolving publishing landscape limits comparisons and complicates journal selection for authors. This study aims to validate quality bibliometrics in OHNS journals, analyze the bibliometrics relationship to publishing models and cost, and determine the feasibility of artificial intelligence assisted journal selection. Study Design: Retrospective observational study with artificial intelligence validation. Methods: Bibliometrics, publication model, and article processing charges (APCs) were analyzed for OHNS journals. Linear regression and comparative analyses were conducted to explore their relationship. Lastly, we investigated the effectiveness of ChatGPT-4o in recommending suitable OHNS journals for manuscript submission by comparing its suggestions to where abstracts from top ranked OHNS journals were published. Results: 101 OHNS journals were included (n=51 hybrid, 47 open access, 3 subscription). We validated Scimago Journal Rank (SJR),

CiteScore, and Journal Impact Factor (IF) as reliable, non-manipulated bibliometrics, with SJR strongly correlating with CiteScore (R=0.95, p=0.001) and IF (R=0.89, p=0.001). Hybrid journals outperformed open access journals in SJR scores (650.4 v. 350.8, p=0.001) along all other metrics. Moreover, cost was moderately correlated with bibliometric scoring, with SJR and APCs demonstrating an R=0.52 (p=0.001). Lastly, Chat-GPT4o performed well (76% accuracy) when matching abstracts to the correct journals. Conclusions: We validated SJR, CiteScore, and IF as reliable bibliometric in OHNS. Hybrid journals outperformed open access journals in the studied metrics, and higher APCs were associated with better bibliometric performance. Additionally, ChatGPT-4o demonstrated strong accuracy in journal selection, suggesting its utility in aiding the manuscript submission process.

11:54 Gender Representation of Principal Investigators of Otolaryngologic Clinical Trials in the United States

Tiffany Win, BA, Albany, NY; Jaclyn Preece, MD, Albany, NY; Melissa Mortensen-Welch, MD, Albany, NY; Lara Reichert, MD MPH, Albany, NY

Educational Objective: At the conclusion of this presentation, the participants should be able to recognize gender disparities in otolaryngology clinical trial leadership, identify factors contributing to these disparities, and discuss strategies to enhance mentorship and career development for female otolaryngologists in research.

Objectives: This study investigates gender representation among principal investigators (PIs) leading otolaryngology clinical trials in the United States, with a focus on their educational and professional backgrounds and the characteristics of the trials they lead. Study Design: A retrospective observational analysis was conducted on otolaryngology clinical trials registered on ClinicalTrials.gov between 2000 and 2024. Methods: A total of 190 otolaryngology trials with 243 PIs were identified. Data were collected on PI gender, educational background, academic position, years of experience, and trial characteristics such as sample size, funding source, and study design. Chi squared tests were performed with $p < 0.05$ set for significance. Results: Women comprised only 10.2% of otolaryngology PIs, significantly lower than the 19% of practicing female otolaryngologists and the 26% in academic positions. Female PIs were more likely to hold combined degrees (e.g., MD/PhD) and hold junior academic positions than senior academic positions. In terms of the trials they lead, they tended to be more multi-institutional and industry funded than male led trials, with 88% of all trials initiated within the past six years. Conclusions: Gender disparities were seen among otolaryngology PIs, with women making up nine times fewer PIs than men, despite the increasing participation of women in the field. Female otolaryngologists are less likely to hold full professorship despite having more degrees on average. Continued efforts to enhance mentorship, sponsorship, and career development are needed to close the gender gap in otolaryngology research.

12:00 The Quitting Quandary: When Things Get Stuffy

Amanda J. Bastien, MD, Los Angeles, CA; Janice L. Farlow, MD PhD, Indianapolis, IN; Mia E. Miller, MD, Los Angeles, CA; Priya Krishna, MD, Loma Linda, CA; Anca Barbu, MD, Los Angeles, CA

Educational Objective: At the conclusion of this presentation, the participants should be able to 1) encourage peer sharing: promote the sharing of personal experiences with quitting and setbacks among peers to cultivate empathy and understanding; and 2) enhance resilience: understand how discussing setbacks can enhance personal resilience and motivate individuals to persist in the face of challenges.

Objectives: Success is celebrated, but the lessons learned from failure are equally, if not more, valuable. However, we rarely openly discuss our setbacks. By openly addressing setbacks, individuals and organizations can create a culture of learning, encourage risk taking, and reduce the stigma associated with failures and mistakes. In this qualitative study we asked chairs of otolaryngology to describe a time they contemplated quitting. Study Design: This is a grounded theory qualitative study of 16 chairs in otolaryngology-head and neck surgery. Methods: This is a grounded theory qualitative study of 16 chairs in otolaryngology-head and neck surgery. The authors designed a semi-structured in depth interview template based on the literature and research team consensus. After verbatim transcription and translation of the one hour virtual interviews conducted from November 2023 to December 2023, the data was thematically analyzed using Braun and Clarke's six step process. Atlas.ti version 7 was used to enhance analysis. Results: In total 37.5% of chairs who had kids during training and/or as faculty members reported considering quitting. Barriers discussed included pregnancy related stigma, postpartum challenges, and childcare. Advice these surgeons give now: My resident looked at me and said "I'm a new mom. I won't be a good mom or as good as a surgeon because I now have children." Her response: "I reject that. I think I was a good mom and the best possible surgeon I could be because of that." And "If you do plan to have kids, take time off and don't apologize to

anyone about it." 37.5% of chairs shared navigating a patient complication as a temptation to quit. "I've never felt more incompetent in my entire life. I've never felt more questions about who I was and what I was doing there. . . it shook me. It shook me to the core . . . now it's 20 something years later, and I still remember those emotions clearly." Conclusions: These narratives are powerful and serve as a reminder everyone has faced adversity. By openly sharing these stories, it builds motivation and confidence especially in trainees as they realize that successful people often start with similar doubts and difficulties. This study offers valuable insight from role models in our field, demonstrating that with dedication and the right mindset others can achieve their goals professionally and personally too. Career paths are rarely linear.

12:06 Developing Nontechnical Skills in Otolaryngology Residents: Outcomes from a Novel Leadership Curriculum

Taylor S. Erickson, MD, San Francisco, CA; Yasmin Eltawil, BS, San Francisco, CA; Jolie Chang, MD, San Francisco, CA; Megan L. Durr, MD, San Francisco, CA

Educational Objective: At the conclusion of this presentation, the participants should be able to appreciate the role of needs based leadership training in enhancing resident nontechnical skills and consider how similar educational initiatives may be implemented for residents across various surgical training programs.

Objectives: To develop and evaluate a novel leadership curriculum for otolaryngology head and neck surgery (OHNS) residents, addressing key skills in leadership adaptation, managing difficult interactions and public speaking. Study Design: Prospective pre- and post-implementation surveys of OHNS residents at a single tertiary academic center who participated in a novel leadership curriculum. Methods: A novel OHNS resident leadership curriculum was developed based on a prior needs assessment. Three sessions were offered to OHNS residents covering the following topics: 1) understanding your own leadership style; 2) navigating difficult conversations; and 3) public speaking. All sessions were led by content experts. Pre and post surveys were conducted to understand the effectiveness of individual sessions. Questions were structured using a five point Likert scale which were converted to a 1-5 scale (1 = strongly disagree; 3 = neither agree nor disagree; 5 = strongly agree). Wilcoxon rank tests were used to compare pre- and post-session survey data. Results: 25 residents were eligible for participation in the sessions and surveys. Survey data demonstrated significant improvements across multiple areas. Participants reported increased comfort in adapting leadership styles (pre: 3.28; post: 4.52, $p < 0.0001$) and a better understanding of diverse communication preferences (pre: 3.81; post: 4.24, $p < 0.033$). Participants also reported improved comfort in initiating difficult conversations (pre: 2.88; post: 3.81, $p < 0.045$). Across the three sessions, more than 90% of respondents agreed or strongly agreed that each session was a good use of their time and valuable to their future practice. Conclusions: This leadership curriculum, designed based on resident feedback, effectively enhanced participants' abilities to adapt their leadership styles, understand diverse communication preferences, and navigate difficult conversations. This training addresses a notable gap in traditional surgical training by integrating leadership development into resident education.

12:12 Q&A

Session 5: Otology
Celestin D

Moderators
Seilesh C. Babu, MD, Farmington Hills, MI
Maura K. Cosetti, MD BA, New York, NY

10:35 WITHDRAWN - Radiotherapy for Growing Vestibular Schwannomas: Tumor Control Rates in an International Multicenter Cohort - Presenter: Shravan Gowrishankar, MD, Cambridge, UK

10:41 Management of Cochlear Implant Complications: A Comprehensive Review of Treatment Modalities and Outcomes

Jasmine Gulati, MAPP, Washington, DC; James Johns, MD, Washington, DC (Presenter); George O'Hara, BS, Washington, DC; Callie Fernandez, BS, Washington, DC; Michael Hoa, MD, Washington, DC

Educational Objective: At the conclusion of this presentation, the participants should be able to identify common complications associated with cochlear implants, such as infections, cerebrospinal fluid (CSF) leaks, electrode malposition, and facial nerve injury, and explain the evidence based management strategies for each. They should also understand the importance of tailoring management approaches to individual clinical scenarios in order to optimize patient outcomes and apply standardized protocols or individualized strategies to reduce complication related morbidity.

Objectives: Cochlear implants (CIs) have become a widely accepted treatment for patients with moderate to profound sensorineural hearing loss. While these devices significantly improve hearing, complications can arise, necessitating effective management strategies to optimize outcomes. This systematic review aims to examine the range of CI complications--including infection, cerebrospinal fluid (CSF) leaks, device extrusion, electrode malposition, facial nerve injury, bleeding/seroma, and device failure--and the effectiveness of their respective management techniques. Study Design: Systematic review. Methods: Following PRISMA guidelines, a systematic review was conducted using five major databases (Ovid Medline, Ovid Embase Classic, Ovid EBM Reviews, CINAHL, and Web of Science Core Collection) from January 2013 to March 2024. Search terms included "cochlear implant", common complications (e.g., hematoma, infection), and management strategies. Of the 1,170 articles identified, 185 studies met the inclusion criteria, reporting on complications and management approaches. Data extracted included patient demographics, complication type, management strategies, and outcomes. Results: Infections (64 studies) were the most commonly reported complication, managed with antibiotics and surgical interventions when necessary. CSF leaks (40 studies) were typically treated with tissue sealants and lumbar drainage. Electrode malposition (40 studies) often required revision surgery, while device extrusion (22 studies) necessitated surgical repositioning or reimplantation. Facial nerve injury (38 studies) was managed with decompression or nerve repair, and hematomas/seromas (38 studies) with needle aspiration or conservative treatment. Device failure (25 studies) frequently led to explantation and reimplantation. Conclusions: As the indications for cochlear implantation have expanded to include children, individuals with residual hearing, and adults and children with single sided deafness, the potential for complications has similarly broadened. In light of this, understanding the landscape of complication management is essential to establishing best practices. This review underscores the need for tailored strategies to mitigate morbidity and improve patient outcomes. While standardized protocols exist for some complications, such as infections and CSF leaks, others require more individualized approaches depending on clinical circumstances. The findings provide clinicians with a comprehensive, evidence based resource for managing complications associated with cochlear implants.

10:47 Scala Tympani Volume Predicts Hearing Preservation following Cochlear Implantation

Kevin D. Brown, MD PhD, Chapel Hill, NC; Michael W. Canfarotta, MD, Nashville, TN; Margaret T. Dillon, AuD PhD, Chapel Hill, NC; Morgan A. Selleck, MD, Chapel Hill, NC

Educational Objective: At the conclusion of this presentation, the participants should be able to understand what cochlear microanatomy refers to and which metrics of cochlear microanatomy predict better hearing preservation.

Objectives: To examine the relationship between scala tympani (ST) volume, angular insertion depth (AID), and low frequency hearing preservation for cochlear implant (CI) recipients of lateral wall electrode arrays. Study Design: Retrospective review. Methods: 45 adult CI recipients of 24-, 28-, or 31.5-mm lateral wall electrode arrays with preoperative unaided hearing thresholds </= 45 dB HL at 250 Hz. All patients underwent preoperative and postoperative computed tomography to evaluate cochlear morphology and electrode position. A linear mixed model evaluated effects of ST volume, AID, age at surgery, and biological sex on the postoperative change in the low frequency pure tone average (LFPTA; 125, 250, and 500 Hz) at activation and 6 months post-activation. Results: There were significant main effects of ST volume ($p = 0.010$), age ($p = 0.030$), and biological sex ($p = 0.001$), indicating better low frequency hearing preservation for CI recipients with larger ST volumes, younger age at surgery, and female biological sex. A broad range in AID of the most apical electrode contact was observed (301.4° to 681.8°); however, there was no significant main effect of AID on low frequency hearing preservation ($p = 0.161$). Conclusions: These findings suggest that intrinsic factors such as cochlear morphology may have a greater impact on low frequency hearing preservation than apical positioning of a flexible lateral wall electrode array when using soft surgical techniques.

10:53 Otologic Symptoms in Patients Treated with Teprotumumab (Tepezza): A Propensity Score Matching Analysis

Kaitlin Hori, BS, Los Angeles, CA; Albert Li, BA, Los Angeles, CA; Talia Wenger, BA, Los Angeles, CA; Janet S. Choi, MPH MD, Los Angeles, CA

Educational Objective: At the conclusion of this presentation, the participants should be able to recognize the association between the thyroid eye disease medication, teprotumumab, and the development of hearing loss, tinnitus, and eustachian tube disorders. This is significant because these otologic symptoms can be irreversible and there should be greater utilization of interval otologic monitoring while patients are on teprotumumab.

Objectives: Teprotumumab is a monoclonal antibody introduced to treat thyroid eye disease in 2020 with known adverse effects on cochlea and fat tissue around eustachian tube. The purpose of this study was to investigate the incidence rate and risks of developing hearing loss, tinnitus and eustachian tube disorders associated with teprotumumab use. Study Design: Cross sectional analysis. Methods: TriNetX, a multi-institutional health research database, was queried for U.S. adults (18 years and older) with thyroid eye disease. Patients who were and were not prescribed teprotumumab were matched using a propensity score by demographics and comorbidities. The outcomes were queried based on ICD-10 codes: hearing loss (conductive, sensorineural and unspecific), tinnitus, and eustachian tube disorders (including patulous eustachian tube). Risk ratios (RR) were calculated using Poisson regression. Results: In this cohort, 1,124 patients with TED used teprotumumab (age 48.3 +/- 16.5). 1,021,973 patients with TED did not use teprotumumab (age 47.8+/- 20.4). After propensity score matching, each analytic cohort included 957 patients. The incidence rates of hearing loss in the teprotumumab use and non-use group were 27.7% and 8.9%, respectively. TED patients treated with teprotumumab demonstrated higher risks of hearing loss (RR, 3.12; 95% CI 2.47-3.94) and tinnitus (RR, 2.30, 95% CI 1.64-3.24) compared to TED patients not treated with teprotumumab. There was no significant association between patulous eustachian tube or other unspecified eustachian tube disorders with teprotumumab use (RR, 1.00; 95% CI 0.42-2.4 and RR, 1.38; 95% CI 0.84-2.27, respectively). Conclusions: Teprotumumab use was significantly associated with development of hearing loss and tinnitus among thyroid eye disease patients. Patients on teprotumumab should be closely monitored for otologic outcomes to avoid possible irreversible damages. Screening, monitoring, and prevention guidelines are needed.

10:59 Real Time Computer Vision for Automated Performance Assessment in an Endoscopic Ear Surgery Trainer

Obinna I. Nwosu, MD, Boston, MA; Alicia M. Quesnel, MD, Boston, MA; Michael S. Cohen, MD, Boston, MA; Daniel J. Lee, MD, Boston, MA; Matthew G. Crowson, MD, Boston, MA

Educational Objective: At the conclusion of this presentation, the participants should be able to appreciate how computer vision can be used to automated performance assessment in an endoscopic ear surgery trainer.

Objectives: Endoscopic ear surgery (EES) trainers have been shown to accelerate EES skill acquisition in novice surgeons. However, most commercially available EES trainers lack an integrated, validated, and objective method for assessing the performance on trainer tasks. Given the ongoing need for objective, efficient methods of performance assessment, we developed a scalable computer vision method for objective, automated performance assessment on an EES trainer. Study Design: Proof of concept study describing a deep learning, computer vision approach for automated performance assessment on a EES surgical trainer task of placing six stapes prostheses onto adjacent incus pegs. Methods: Image frames from video recordings of the task being completed were used to train a custom object tracking model to track the location of the endoscope and instrument and to detect the placement of a prosthesis on the incus in a video stream. Model object detection performance was assessed on a held-out test dataset of images using recall and precision metrics. The model also computed the mean velocity and distance traveled by the instrument and endoscope and task completion time, providing these metrics to the trainee immediately upon completion. Results: The model demonstrated excellent detection performance with 98% recall and 99% precision. The model ran with minimal latency, in real time on the camera feed of an iPhone, attached to a commercially available EES trainer, using a custom 3D printed mount. Conclusions: This proof of concept demonstrates the feasibility of a computer vision approach for automated performance assessment in a commercially available EES trainer. Future work will assess the model's construct validity and utility in differentiating skill level between novice and experienced surgeons, as well as the development of additional CV models for other EES trainer tasks.

11:05 Overdiagnosis of Acute Mastoiditis in Emergency Department Settings

Lisa Zhang, MD, Columbus, OH; Robert J. Macielak, MD, Columbus, OH; Oliver F. Adunka, MD FACS, Columbus, OH; Yin Ren, MD PhD, Columbus, OH

Educational Objective: At the conclusion of this presentation, the participants should be able to discuss healthcare

utilization of patients presenting to the emergency department (ED) with reported acute mastoiditis.

Objectives: To identify healthcare utilization of patients presenting to the emergency department (ED) with reported acute mastoiditis. Study Design: Retrospective review of the National Emergency Department Sample (NEDS) database from 2020-2021. Methods: A total of 1,360 patients presented with a primary diagnosis of acute mastoiditis without complications (H70.001-9). Patient demographics along with hospital characteristics associated with a primary diagnosis of acute mastoiditis were included. Results: Average patient age was 40.2 years old (SD 24 years, 53% females). Despite the assigned diagnosis, a total of 595 (43%) patients were discharged from the ED. Trauma hospitals and hospitals in the Northeast were much less likely to discharge patients with acute mastoiditis (OR [95%CI]; trauma OR 0.48 [0.38-0.61]; Midwest OR 1.8 [1.2-2.8], South 1.6 [1.1-2.2], West 1.5 [0.99-2.2] vs Northeast). Patient demographics did not predict disposition. The average cost in the ED was significantly higher for patients who were discharged compared to those admitted ($9,676 vs $5,354, p=0.0001). The average length of stay for admitted patients was 3.7 days (SD 3). A logistic regression with hospital characteristics demonstrated trauma designation and location continued to be predictive of discharge (overall p=0.0001; trauma hospital OR 0.5 [0.4-0.6]; Midwest OR 2.1 [01.4-3.2], South 1.7 [1.2-2.4], West 1.5 [1.03-2.3]). Conclusions: Rates of discharge from the ED for acute mastoiditis are higher than expected given treatment algorithms requiring admission, leading to concerns of overdiagnosis and inaccurate charting. Empiric antibiotics and imaging reliance for diagnosis by some providers may lead to significantly higher healthcare costs.

11:11 ELISA Quantified Serum Levels of Prestin, Otoferlin, Connexin 26, and Stereocilin -- A Biomarker Approach to Tinnitus

Patrick Adamczyk, BS, Farmington, CT; Zana Preniqi, BS, Farmington, CT; Sumeet Kadian, BS BA, Farmington, CT; Daniel Roberts, MD PhD, Farmington, CT; Erika Skoe, PhD, Storrs, CT; Kourosh Parham, MD PhD, Farmington, CT

Educational Objective: At the conclusion of this presentation, the participants should be able to understand that inner ear proteins affected by non-syndromic autosomal recessive disorders resulting in hereditary sensorineural hearing loss can be detected and quantified in the serum, and thus may serve as biomarkers.

Objectives: We hypothesize that otoferlin, connexin 26 (CX26), and stereocilin can be measured and quantified in the blood and that their levels correlate with auditory measures. Study Design: Prospective observational clinical trial involving 41 tinnitus and control participants. Methods: Participants underwent audiometric evaluation, completed one week of noise dosimetry, and provided a blood sample for ELISA based quantification of otoferlin, CX26, and stereocilin. Dosimetry results were summarized as the maximum 8 hour normalized A weighted equivalent continuous sound level (LAeq8h). Statistical significance was set at $p < 0.05$. Results: Bilateral pure tone average (BPTA) and LAeq8h were statistically significantly different between groups. Individual serum protein concentrations were not shown to be statistically significant between the tinnitus and control groups, but high frequency (4-10 kHz) BPTA was significantly correlated with tinnitus groups' otoferlin, CX26, and stereocilin levels (Rho = -.352, .396, and -.360, respectively). There was a significant difference between the tinnitus and control subjects for the ratio of the log (stereocilin)/LAeq8h. Conclusions: Levels of otoferlin, CX26, and stereocilin were detected and quantified in the serum. These levels were correlated with high frequency BPTA in tinnitus subjects who had elevated thresholds and lower noise exposures in comparison to control subjects. While the protein levels were not statistically significant between tinnitus and control groups, the correlations between tinnitus subjects' individual proteins' serum levels suggest they may act as meaningful biomarkers for sensorineural hearing loss and/or tinnitus and thus may have a role in assessing outcomes in gene therapy.

11:17 Evaluating Test-Retest Reliability of a Machine Vision Based Vestibular Rehabilitation System

Erin Williams, MSBE, Miami, FL; Felipe Echeverri Tribin, MSBE, Miami, FL; Luis Rodriguez-Diaz, BS, Miami, FL; Blaine Ayotte, PhD, Hanover, NH; Odile Clavier, PhD, Hanover, NH; Michael Hoffer, MD, Miami, FL

Educational Objective: At the conclusion of this presentation, the participants should be able to understand the test-retest reliability of an automated vestibular rehabilitation system (AVRS) using intraclass correlation coefficient (ICC) for various exercise conditions and intuit its potential application in clinical vestibular rehabilitation therapy.

Objectives: Assess the test-retest reliability (TRTR) of an automated, machine vision based rehabilitation system (AVRS) as a viable tool for clinical vestibular rehabilitation therapy (VRT). Study Design: The AVRS (Creare LLC, Ha-

nover, NH) employs a stereo vision system to monitor eye and head movements. An administrator controlled and operated wireless table controls the AVRS, which provides participants with instructional cues and visual feedback on a computer display to guide rehabilitation exercises. After obtaining informed consent (#20200839), participants (n=20) completed two vestibular rehabilitation exercises at physiologically relevant frequencies (0.5 - 2.0 Hz). These exercises involved axial head rotation while maintaining gaze on either a stationary target (X1) or a target moving in the opposite direction at the same frequency (X2) while sitting and standing. Methods: Gain was measured as the ratio of the relatively combined eye speed to the head speed when the head angle was near zero. Participants completed the exercises in sessions separated by greater than or equal to 2 weeks. TRTR of gain was evaluated using intraclass correlation coefficient (ICC). Results: Overall, our cohort included 40 healthy age and sex matched participants (21F/19M) with a mean age of 36 +/- 11. A subset of 20 subjects were selected (50% [10F/10M]) for gain TRTR during different exercise conditions: X1 and X2, sitting and standing, and all exercises simultaneously. ICC was 0.585 ($p < 0.01$) for X1, 0.812 ($p < 0.01$) for X2, 0.854 ($p < 0.01$) for sitting, and 0.723 ($p < 0.01$) for standing. All exercises scored an ICC of 0.775 ($p < 0.01$) between attempts 1 and 2. Conclusions: The AVRS demonstrated test-retest reliability across all exercises, highlighting its usefulness as an early therapeutic intervention.

11:23 Q&A

PANEL

11:30 - 12:20 Is This My Job or Is This My Calling? Reconciling the Physician Identity Dilemma

Moderator:

Nausheen Jamal, MD, Galveston, TX

Panelists:

Sujana S. Chandrasekhar, MD FACS, New York, NY
Valerie A. Flanary, MD FACS, Milwaukee, WI
Kevin C. McMains, MD, San Antonio, TX
Brian Nussenbaum, MD MHCM, Houston, TX

12:20 LUNCH/VISIT EXHIBITORS/VISIT POSTERS

1:05 TRIO Annual Business Meeting

1:25 Remarks /Announcements/Introduction of President-Elect
Alan G. Micco, MD FACS, Chicago, IL

Concurrent Sessions 1:30 - 3:10
Session 6: Laryngology
Celestin ABC

Moderators
David E. Rosow, MD FACS, Miami, FL
VyVy N. Young, MD FACS, San Francisco, CA

1:30 Evaluation of Dysarthria after Implantation and Activation of Hypoglossal Nerve Stimulator for OSA
Jaehee Kim, BA, Philadelphia, PA; Praneet C. Kaki, BS, Philadelphia, PA; Jenna MacKenzie, MS CCC-SLP, Philadelphia, PA; Kristin Odd, BA, Philadelphia, PA; Maurits Boon, MD, Philadelphia, PA; Colin Huntley, MD, Philadelphia, PA

Educational Objective: At the conclusion of this presentation, the participants should be able to understand the potential effects of hypoglossal nerve stimulation (HGNS) on speech articulation in patients with obstructive sleep apnea (OSA).

Objectives: Temporary tongue weakness has been reported in 18% of patients following hypoglossal nerve stimulation (HGNS) device placement for obstructive sleep apnea (OSA), with “lisp” noted as a possible adverse effect.

This study examines the relationship between HGNS device placement and activation and dysarthria. Study Design: Single institution prospective cohort-study. Methods: Patients undergoing HGNS placement were enrolled. Baseline voice recordings were obtained preoperatively and at 1 week, 1 month, and 6-12 months postoperatively. During each recording, patients read the Rainbow Passage and performed alternating and sequential motion rate (AMR/SMR) tasks. A blinded speech language pathologist (SLP) and SLP student graded the recordings based on: 1) the number of misarticulated phonemes during the reading; and 2) AMR/SMR task performances, which were evaluated based on previously established cutoffs. Fisher's exact and one way ANOVA tests were performed. Results: Fourteen patients (79% white, 57% male) were enrolled, and baseline recordings were obtained for all. Thirteen, seven, and nine patients completed the 1 week, 1 month, and 6-12-months followups, respectively. No patients met the dysarthria cutoff (greater than 10% misarticulated phonemes) at any timepoint. Task performance showed no significant differences between timepoints or pre/post-activation. One patient with abnormal baseline AMR later had normal AMR at all postoperative timepoints. Two patients with abnormal AMR at baseline and 1 week had normal range AMR at 6-12 months. One patient with normal baseline AMR had abnormal AMR at 1 week. Conclusions: Preliminary findings suggest that HGNS implantation and activation have a limited impact on speech articulation. Though a small percentage of patients exhibited temporary misarticulations, these were minor and resolved over time. While larger studies are warranted, our findings can be used to improve patient counseling for HGNS implantation and address concerns about speech related side effects.

1:36 A Low Cost Electrolarynx for Voice Rehabilitation following Total Laryngectomy: A Comparative Study in Voice Outcomes

Brendan D. McNeely, MD MSc, Vancouver, BC Canada; Ameen Amanian, MD MSc FRCSC, Vancouver, BC Canada; Dinusha Peiris, MSc, Vancouver, BC Canada; Oleksandr Butskiy, MD FRCSC MSc, Vancouver, BC Canada; Amanda Hu, MD FRCSC, Vancouver, BC Canada; Donald Anderson, MD FRCSC, Vancouver, BC Canada

Educational Objective: To share how a low cost alternative to the commercial electrolarynx is viable in low resource settings around the world.

Objectives: To demonstrate no clinical difference in the voice outcomes between a novel low cost prototype electrolarynx (LE) and the higher cost conventional electrolarynx (CE). Any identified differences will guide future device refinement. Study Design: Paired cohort study. Methods: Ten male participants (median age 69 years) underwent total laryngectomy for laryngopharyngeal malignancies at least 6 months prior to study participation. Paired perceptual voice analysis for LE and CE was performed using voice recordings (Rainbow Passage) and randomly presented to four blinded clinicians using the GRBAS and a validated 100mm visual analogue scale (VAS) for acceptability. Five blinded lay raters graded the voice samples with a validated 7 point intelligibility scale. Objective acoustic measures included fundamental frequency (FO), jitter, shimmer, and vocal intensity. Voice Handicap Index 10 (VHI-10) evaluated self-reported voice quality. Results: Mean difference between the CE and LE in FO was 19.3Hz (CI 1.5 - 37.1), jitter 0.038 (CI 0.009 - 0.085), shimmer 0.047dB (-0.038 - 0.132), and vocal intensity 1.0dB (CI -3.8 - 5.9). Mean difference with the four raters for perceptual analysis was: grade -0.9 (CI -0.54 - 0.10), roughness -0.8 (CI -0.54-0.14), breathiness 0.025 (CI -0.48 - 0.10), asthenia -0.3 (CI -0.29 - 0.34), strain -0.1 (CI -0.63 - 0.28), and VAS 7.7mm (CI 0.4 - 14.9). Mean VHI-10 was 15.3 (CI 11.95 - 18.65). Mean difference with the five lay raters was -0.7 (CI -1.37 - (-0.08)). Conclusions: Our study demonstrates the successful testing of a novel LE with minimal clinical difference in voice outcomes when compared to CE.

1:42 Evaluating the Utility of Mildly Thickened Liquids for Hospitalized Dysphagia Patients: A Single Center Study

Melodyanne Y. Cheng, MS, Los Angeles, CA; Sarah Panjwani, MA CC-SLP, Los Angeles, CA; Jennifer L. Long, MD PhD, Los Angeles, CA

Educational Objective: At the conclusion of this presentation, the participants should be familiar with the safe and temporary use of mildly thick liquids in patients in an acute hospital setting with oropharyngeal dysphagia. Participants should consider the beneficial impact of placing patients on mildly thick liquids rather than remaining NPO, given this study's reported outcomes and very low aspiration rates of 292 hospitalized dysphagia patients at a large tertiary care academic hospital center when placed on mildly thick liquids.

Objectives: This study aims to evaluate the utility and outcomes of temporary use of mildly thick liquids following

a bedside clinical swallow evaluation perusing institutional present guidelines for patients at risk for oropharyngeal dysphagia at a major tertiary care academic hospital center. Study Design: This study was approved by the institutional review board and conforms to the tenets of the Declaration of Helsinki. Over 1000 hospitalized patients who were seen by speech language pathology (SLP) for a bedside swallow evaluation during their hospital stay between December 2021 and December 2023 were initially included. Inclusion criteria involved a consult to SLP for clinical swallow evaluation and documented diet recommendation of mildly thick liquids by SLP. Exclusion criteria involved patients not evaluated by SLP at bedside, and patients with a history of lung/liver transplant, aphonia, or severe dysphonia. Methods: This retrospective chart review at a major tertiary care academic hospital center between December 2021 and December 2023 included 292 patients. All oropharyngeal dysphagia patients seen by SLP at bedside for potential mildly thick liquid recommendations were evaluated using a stringent set of institution wide guidelines for assessing need for a mildly thick liquid diet. Relevant demographic and clinical information (witnessed swallowing concern, history of head and neck cancer, hospital course) was documented. Initial SLP bedside evaluation, all followup assessments including repeat clinical evaluations and instrumental swallow evaluations, including modified barium swallow study (MBSS) or fiberoptic endoscopic evaluation of swallowing (FEES) during hospitalization were documented. Imaging (chest X-rays, CT chest, CT thorax/upper abdomen) were also reviewed within a 7 day timeframe before or after patients were recommended mildly thick liquid diets. Radiologic reads were reviewed for clinical language suggesting possible aspiration or aspiration pneumonia. Descriptive statistical analysis was conducted using Excel. Results: 292 patients were included in this study with a mean age (+/- SD) of 76 (+/- 17) years. All 292 patients received a recommendation for mildly thick liquid diet via bedside clinical swallow evaluation by a trained SLP. 162 (57.5%) were followed up with either repeat bedside clinical evaluation or an instrumental evaluation. The majority showed no evidence of aspiration on imaging after being placed on mildly thick liquid diets; 11 patients had CXR findings notable for aspiration after SLP evaluation. 138 (47.3%) did not receive a followup evaluation from SLP during the length of their hospital stay for various reasons. Conclusions: This is the first study to evaluate outcomes in an acute hospital setting for oropharyngeal dysphagia patients placed on mildly thick liquids via bedside clinical swallow evaluation. The safety and efficacy of mildly thick liquids is supported by the large majority of patients in this cohort demonstrating no radiologic evidence of aspiration on imaging. Also, there may be a potential implication for mildly thick liquids helping patients stabilize for discharge to a less acute level of care.

1:48 Testosterone Injections into the Vocal Folds: An Update to a Novel Approach to Gender Affirming Voice Care

Andrew Vahabzadeh-Hagh, MD, La Jolla, CA; Andi Docktor, CCC-SLP, La Jolla, CA; Benjamin Schiedermayer, CCC-SLP, La Jolla, CA

Educational Objective: At the conclusion of this presentation, the participants should be able to 1) describe the value of an alternative to traditional systemic testosterone therapy for pitch reduction; 2) list two voice related outcomes of testosterone injections into the vocal folds; 3) discuss the benefits of a multidisciplinary approach to gender affirming voice care.

Objectives: Voice is one of many ways to express gender, however, for many transgender individuals there may be an incongruence between voice presentation and gender identity. Having voice gender congruence has been shown to improve one's overall wellbeing. Transmasculine individuals often seek pitch reduction as part of their gender affirming care journey. The primary medical therapy for transmasculine patients is testosterone administered via intramuscular injection or topical gel/cream. However, traditional testosterone therapies may not yield desired outcomes or be the optimal choice. Here we present an update on our experience with direct vocal fold testosterone administration as an additional treatment option. Study Design: Prospective study. Methods: 6 patients were recruited. Targeted treatment regimen included: 4 injections of 25mg testosterone cypionate (200mg/mL) administered to each vocal cord over 6 weeks. Point touch transcricothyroid approach was used. Testosterone levels were checked and perceptual voice analysis was performed. Results: All patients experienced a more masculine timbre, less breathiness and more vocal confidence within 4 weeks. Satisfaction was uniform. Conclusions: Vocal fold testosterone injections may be a viable treatment option for individuals seeking pitch reduction. To provide culturally competent care, it is important to recognize the nuance in voice gender expression and strive to offer options that are tailored to the unique and personal needs of our patients. This study highlights work aimed at providing more individualized treatment options for pitch reduction which can provide meaningful outcomes and contribute to patients' voice gender congruence and overall wellbeing.

1:54 Development and Features of EMEREST--A Mobile Application Providing AI Derived Objective Outcome Measures in Gender Affirming Voice Care

Shane Vasile Simon, BS, Los Angeles, CA; Michael M. Johns, MD, Los Angeles, CA; Noah Millman, MD, Los Angeles, CA; Jeremy Pinto, MSc, Montreal, QC Canada; Nehal Kanetkar, BASc, Toronto, ON Canada; Yael Bensoussan, MD, Tampa, FL

Educational Objective: At the conclusion of this presentation, the participants will be introduced to the development and features of EMEREST, a mobile application that provides artificial intelligence (AI) derived objective outcome measures in gender affirming voice care (GAVC).

Objectives: An AI model was developed capable of holistically using voice to assess voice femininity with an accuracy of 92%. Herein, we present the development and features of EMEREST, an application using this algorithm to be used as a supplemental tool in GAVC and help patients track their progress in their GAVC journey. Study Design: Retrospective qualitative study. Methods: The AI algorithm was trained using a subset of 3,560 cisgender voice recordings from the Mozilla Common Voices dataset. Stakeholders (10 transgender and 2 nonbinary individuals and 7 speech language pathologists) were previously interviewed in focus groups to gain insight into the perspectives, concerns, and feedback on the use of the AI model. Development of the front and back end of the app was performed through an iterative process involving a multidisciplinary team with 2 expert laryngologists, 2 speech pathologists with expertise in GAVC, and patient partners. Results: The application was designed implementing the stakeholder feedback obtained and consists of three main parts: 1) real time AI based voice gender assessment tool; 2) a tracking log of prior voice assessments and recordings for progress; and 3) example voice samples with corresponding gender assessment scores to permit inclusiveness and broad examples of voices across gender identities. Conclusions: EMEREST is a promising application with AI based outcome measures in GAVC that was designed based upon stakeholder input. This application has potential to be used clinically to help guide GAVC and assess voice change.

2:00 A Novel Murine Model of Acute Laryngeal Injury after Intubation

Ruth J. Davis, MD, Madison, WI; Hannah Kreuser, BS, Madison, WI; Tadeas Lunga, MD PhD, Madison, WI; Ryan E. Schaub, PhD, Madison, WI; Susan L. Thibeault, PhD, Madison, WI

Educational Objective: At the conclusion of this presentation, the participants should be able to describe a novel mouse model of acute laryngeal injury after intubation.

Objectives: Acute laryngeal injury (ALgI) occurs in over 50% of patients after intubation and mechanical ventilation and is associated with significantly worse voice, breathing, and swallowing outcomes. Currently, there are no small animal models for the study of ALgI and its progression to glottic stenosis. The objective of this study was to develop and validate a novel mouse model of ALgI. Study Design: Basic science. Methods: 21 adult C57BL/6 mice underwent chemomechanical injury to the posterior glottis, and 16 control mice did not undergo injury. Glottic injury was performed under endoscopic guidance using a bleomycin dipped wire brush. Mice underwent repeat endoscopy at 14 or 21 days following injury, and the maximal interarytenoid angle during respiration was quantified using ImageJ to evaluate glottic mobility. Histologic and gene expression analyses were performed on larynges from each group. Results: The interarytenoid angle of injured mice was significantly reduced compared to controls at 14 (35 vs. 68 degrees, $p<0.001$) and 21 days post-injury (34 vs. 68 degrees, $p<0.001$). There was a significant increase in posterior glottic thickness in injured compared to control mice at 14 (90 vs. 20 um, $p=0.020$) and 21 days post-injury (146 vs. 20 um, $p=0.002$). Trichrome staining demonstrated collagen deposition in the posterior glottis of injured mice. There was 1 death following injury (4.8% mortality). Conclusions: Chemomechanical injury to the posterior glottis produces a novel mouse model of ALgI. This safe, reliable and feasible model lays the foundation for future translational study of ALgI and its progression to glottic stenosis.

2:06 Utilizing Artificial Intelligence to Reduce the Reading Grade Levels of Patient Education Materials in Laryngology

Andrew J. Rothka, BS, Hershey, PA; Andrew Meci, MPH, Hershey, PA (Presenter); Madison Hearn, MPH, Hershey, PA; F. Jeffrey Lorenz, MD, Hershey, PA; John P. Gniady, MD, Hershey, PA; Neerav Goyal, MD MPH, Hershey, PA

Educational Objective: At the conclusion of this presentation, the participants should be able to use artificial intelligence (AI) to improve the readability of patient education materials.

Objectives: 1) Identify grade levels of existing laryngology patient education materials; and 2) utilize natural lan-

guage processing AI to reduce the reading level of materials. Study Design: Cross-sectional study. Methods: Patient education materials for laryngeal conditions were identified from the American Laryngological Association (ALA) website. Education materials were scored with the Flesch-Kincaid calculator. AI was prompted to convert the materials to a fifth grade reading level by using ChatGPT version 4.0. The generated texts were then rescored using the Flesch-Kincaid scale. Results were compared between three main groups: voice, swallowing, and your care team (VST); common laryngeal disorders (CLD); and laryngeal procedures (LP). Results: Excluding duplicates, 37 patient education sheets were found on the ALA website. The mean grade level for VST materials was 11.4 as published and 6.53 after AI manipulation ($p<0.001$). The mean grade level for CLD materials was 10.78 as published and 7.78 after AI manipulation ($p=0.04$). The mean grade level for LP materials was 10.79 as published and 7.63 after AI manipulation ($p=0.01$). Conclusions: Patient education materials in laryngology were consistently above the recommended 6th grade reading level. ChatGPT 4.0 has the capacity to create a statistically significant reduction in the reading levels of education materials and has the greatest grade level reduction in materials about physiology and members of the care team. However, it did not possess the capability to reduce all materials to be below the recommended reading level. Therefore, experts can utilize AI as one of their tools to aid in reducing reading levels to make materials more accessible to patients.

2:12 Q&A

Session 8: Rhinology
Celestin ABC

Moderators
Devyani Lal, MD MBBS MS, Phoenix, AZ
Steven D. Pletcher, MD, San Francisco, CA

2:20 Evaluating Sinonasal Airspace Changes Pre- and Post-Treatment with Elexacaftor/Tezacaftor/Ivacaftor in Cystic Fibrosis
Michelle H. Kim, BA, Durham, NC; Nathan A. Luzum, BS, Durham, NC; Adam J. Kimple, MD PhD, Chapel Hill, NC; Anna C. Zemke, MD PhD, Pittsburgh, PA; Dennis O. Frank-Ito, PhD, Durham, NC

Educational Objective: At the conclusion of this presentation, the participants should be able to understand the benefits of elexacaftor/tezacaftor/ivacaftor (ETI) therapy for sinonasal airway patency in patients with cystic fibrosis from a volumetric quantification perspective.

Objectives: Patients with cystic fibrosis (CF) experience significant sinonasal airway opacification, leading to chronic airway related conditions. The triple combination therapy elexacaftor/tezacaftor/ivacaftor (ETI) has emerged as a therapeutic option for CF. This study uses volumetric quantification technique to evaluate changes in CF sinonasal airway patency pre-ETI and post-ETI. Study Design: Retrospective computational modeling study. Methods: Anatomically accurate patient specific three dimensional sinonasal airspaces were reconstructed from radiographical images of 19 patients (12 male, 7 female) with CF, pre-ETI and post-ETI. Sinonasal airspace surface area, volume, and surface area to volume ratio were calculated pre-ETI and post-ETI. Pre-ETI and post-ETI sinonasal airspace changes in these computed parameters were corrected with changes in both Lund-Mackay and SNOT-22 scores. Results: Average (+/- standard deviation) surface area and volume increased significantly from pre-ETI (surface area: 225.46 cm2 +/- 73.07; volume: 41.48 cm3 +/- 14.53) to post-ETI (surface area: 295.04 cm2 +/- 51.49; volume: 59.74 cm3 +/- 16.57), with respective $p<0.01$ per computed parameter. Furthermore, surface area to volume ratio was significantly different; pre-ETI: 5.78 cm-1 +/- 1.40; post-ETI: 5.14 cm-1 +/- 0.99; $p=0.02$. Pre-ETI to post-ETI improvement changes in surface area and volume significantly correlated with corresponding changes in Lund-Mackay scores (surface area: $R=0.71$, $p<0.01$; volume: $R=0.67$, $p<0.01$), but correlated weakly with corresponding changes in patient reported SNOT-22 scores (surface area: $R=0.11$, $p=0.65$; volume: $R=0.06$, $p=0.81$). Conclusions: Patients with CF treated with ETI exhibited a significant increase in sinonasal airway patency, as evidenced by volumetric quantification analysis of surface area and volume differences. These increases in both parameters showed strong significant correlations with Lund-Mackay scores; however, no such correlations were observed with patient reported subjective SNOT-22 scores.

2:26 Comparative Analysis of Cytotoxic Effects of Fine Versus Coarse Particulate Matter on Cultured Sinonasal Epithelial Cells In Vitro
Saroj K. Basak, PhD, Los Angeles, CA; Janice J. Chung, MD, Los Angeles, CA (Presenter); Seung-no Hong,

MD, Seoul, South Korea; Eri S. Srivatsan, PhD, Los Angeles, CA; Daniel S. Shin, MD, Los Angeles, CA; William Chen, Los Angeles, CA; Jivianne T. Lee, MD, Los Angeles, CA

Educational Objective: At the conclusion of this presentation, the participants will have learned about the differential impact of fine versus coarse particulate matter exposure on sinonasal epithelial cell proliferation.

Objectives: Environmental airborne pollutant exposures, including particulate matter (PM), have been postulated to contribute to the pathogenesis of chronic rhinosinusitis. Airborne particles are categorized by mean particle diameter, with PM4 denoting fine atmospheric particulate matter (less than 4μm) and PM10 denoting inclusion of larger particles (less than 10μm). The objective of this study was to investigate the differential impact of particulate matter size on human sinonasal epithelial cells (SNECs). Study Design: In vitro study of proliferation of cultured SNECs following exposure to PM4 or PM10 particulate matter. Methods: Sinus mucosa was collected from 4 patients who underwent transsphenoidal pituitary surgery without a history of chronic rhinosinusitis. Cultured SNECs (1000 cells/well, 96 well plate) were exposed to PM4 and PM10 at dosages ranging from 0.25 to 400μg/ml. Untreated SNECs without administration of particulate matter served as controls. SNEC growth patterns were evaluated over the ensuing 90 hours using the Incucyte Live Cell Imaging System. Each condition was completed as a triplicate, and the experiments were performed twice. Results: At higher doses (25-400 μg/ml), PM4 and PM10 exposures resulted in cell death with no evidence of cellular proliferation. At lower doses (0.25-2.5 μg/ml), there was a statistically significant ($p<0.05$) reduction in cellular proliferation with PM4 administration compared to control. However, lower doses of PM10 were without effect on SNEC proliferation. Conclusions: While exposures to fine and coarse particulate matter at higher dosages (25-400 μg/ml) resulted in SNEC death; at lower doses (0.25-2.5 μg/ml), fine particulate matter (PM4) resulted in greater cytotoxicity than coarse matter (PM10). This finding is consistent with recent clinical studies that have demonstrated an association of fine PM exposure with chronic rhinosinusitis and reduced postoperative improvement in sinonasal quality of life outcomes following endoscopic sinus surgery.

2:32 Characterization of Novel, Self-Administered Olfactory Assessments in a Young Adult Population
Tiana M. Saak, BA, New York, NY; Renjie Zhang, MA EdM, New York, NY; Matthew D.A. Spence, BA, New York, NY; Davangere P. Devanand, MD, New York, NY; Jeffrey N. Motter, PhD, New York, NY; Jonathan B. Overdevest, MD PhD, New York, NY

Educational Objective: At the conclusion of this presentation, the participants should be able to understand 1) the potential of novel, easy to use, and self-administered olfactory assessments to characterize unique domains of olfaction and cognition; and 2) the importance of validating these tools across age, olfactory ability, and cognitive status.

Objectives: Two novel olfactory assessments - matching (novel olfactory sorting task or NOST) and intensity sorting (IST) - allow for expanded evaluation of olfaction beyond conventional domain testing. There is interest in exploring the value of NOST and IST due to their ease of use, ability to be self-administered, and evaluation of odor memory and cognition. Characterizing performance among a normative young adult population provides a useful benchmark for subsequent evaluation in cognition impaired and normative aging cohorts. Study Design: Pilot phase of a cross-sectional prospective observational study. Methods: Individuals without perceived olfactory dysfunction or neurological/rhinological conditions (n=23) completed TDI testing, NOST, and IST. NOST involved matching twelve pairs of odorants, and IST required arranging five odorant concentrations by intensity. Scores were compared to TDI using Pearson correlations. Results: Of the 23 participants (mean age: 26; mean TDI: 35.46), 22 were normosmic (TDI greater than 30.75). NOST mean score was 7.61/12, while IST mean score was 0.73/1. NOST moderately correlated with TDI ($r=0.514$, $p=0.012$) and threshold ($r=0.474$, $p=0.022$), but not with discrimination or identification. IST performance did not correlate with TDI, individual subdomains, or NOST. Conclusions: Preferential correlation between NOST and the threshold domain of TDI in this young normosmic population may reflect an assessment of olfactory acuity beyond simple peripheral threshold detection. The NOST may provide insight into how an individual can centrally process, differentiate, and spatially represent odors. Perhaps there are further domains of smell and cognition probed by NOST and/or IST not fully captured by TDI. Moreover, IST may not offer additional insight when stratifying olfactory status among normosmic young adults. Continued validation of NOST and IST across adult lifespan, olfactory ability, and cognitive status is needed to explore the utility of these self-administered, low burden olfactory assessments.

2:38 Arthritis Related Adverse Reactions of Dupilumab in Treatment of Chronic Rhinosinusitis
Vivek S. Annadata, BS, Hempstead, NY; Jonathan Liang, MD MPH FACS FARS, Oakland, CA

Educational Objective: At the conclusion of this presentation, the participants should be able to understand the phenomenon of dupilumab associated arthritis specifically in the context of CRSwNP treatment.

Objectives: Dupilumab, a biologic medication approved for treatment of chronic rhinosinusitis with nasal polyps (CRSwNP) in 2019, has been shown to improve sinonasal outcomes and quality of life. Dupilumab associated arthritis (DAR) adverse events have been reported in clinical trials and case reports, but DAR risk for CRSwNP is unknown. Study Design: Retrospective cohort study. Methods: The FDA Adverse Events Reporting System (FAERS) database was used to evaluate DAR from 2020Q1 to 2024Q1. DAR was compared between 3 treatment groups (atopic dermatitis, asthma, and CRSwNP). Logistic regression was used to predict DAR. Disproportionality analysis (DPA) of DAR was performed using OpenVigil. Results: Of 207,370 total observations, 9,707 were treated for CRSwNP. DAR prevalence was 9.41%, 7.41%, and 4.60% for CRSwNP, asthma, and AD, respectively. The most commonly reported DAR were arthralgia (65.2%), arthritis (8.1%), and joint swelling (6.9%). The reported odds ratio (ROR) of DAR was 2.16 [1.77-2.60], 1.16 [1.08-1.25], and 0.76 [0.72-0.81] for CRSwNP, asthma, and AD, respectively. Women (ROR 1.18 [1.11-1.24]) and older adults (ROR 1.97 [1.86-2.09] were at higher risk for DAR. DPA yielded DAR ROR of 0.091 [0.086-0.097] and 0.97 [0.95-0.99] for CRSwNP and overall treatment, respectively. Conclusions: FAERS analysis showed that DAR was more common with CRSwNP treatment with 2 times higher odds of DAR compared to other treatment indications. Women and older adults were at higher risk of DAR. Otolaryngologists prescribing dupilumab for CRSwNP should be aware of the increased risk of arthritis, especially in the higher risk groups.

2:44 Opioid Utilization Trends and Outcomes following Sinus Surgery before and after the 2021 American Academy of Otolaryngology-Head and Neck Surgery (AAO-HNS) Opioid Prescribing Clinical Practice Guidelines

Heli Majeethia, BS, Houston, TX; Najm Khan, MBS, Piscataway, NJ; Faizaan Khan, BS, Houston, TX; Roshan Dongre, BS, Houston, TX; Masayoshi Takashima, MD, Houston, TX; Omar G. Ahmed, MD, Houston, TX

Educational Objective: At the conclusion of this presentation, participants should be able to quantify the change in opioid utilization following sinus surgery before and after the publication of the 2021 American Academy of Otolaryngology-Head and Neck Surgery (AAO-HNS) opioid prescribing guidelines. Participants will also be able to note that there are no significant differences between certain postoperative outcomes for those that manage pain with opioids versus nonopioid analgesics and conclude that opioid use may not confer any direct benefit as compared to use of other analgesics.

Objectives: In April 2021, the AAO-HNS published opioid prescribing guidelines amidst a national effort to combat the opioid epidemic in the United States. This study evaluates trends in opioid utilization following sinus surgery before and after these guidelines, as well investigates differences in postoperative outcomes for those that manage pain with opioids versus nonopioid analgesics. Study Design: This retrospective, cohort study included 118,297,237 patients from the TriNetX U.S. Collaborative Network. Two cohorts of patients that underwent sinus surgery from January 2013 to March 2021 and April 2021 to the current date were created. Additional cohorts of patients that received opioids or nonopioid analgesics within 5 days postop were created. Methods: Rates of opioid utilization within 5 days postop were analyzed between cohorts that underwent sinus surgery before and after guideline publication. Outcomes like postoperative pain, hospital visits, and stress or trauma related depression and anxiety episodes within 3 months of sinus surgery were evaluated between opioid and nonopioid analgesic groups. Risk rates were calculated with a p value of less than 0.05 considered significant. Results: Opioid utilization rates dropped significantly from 15.4% to 11.2% after guideline publication. Postoperative opioid users had a 5.1%, 30.8%, and 2.8% risk of postoperative pain, hospital visits, and stress or trauma related depression and anxiety episodes, respectively. Nonopioid analgesic users had 5.2%, 29.6%, 2.9% risk of postoperative pain, hospital visits, and stress or trauma related depression and anxiety episodes, respectively. There were no significant differences in outcomes. Conclusions: The AAO-HNS opioid prescription guidelines helped reduce rates of opioid utilization for sinus surgery pain management. Furthermore, there were no significant differences between patients who used opioids versus those who used nonopioid analgesics with regards to postoperative pain, hospital visits, and stress or trauma related depression and anxiety episodes, thus suggesting that opioids are not superior for postoperative recovery by certain measures.

2:50 Variations in Severity of Rhinitis Symptoms: A Systematic Review and Meta-Analysis

Asher T. Ripp, BS, Charleston, SC; Pranav A. Patel, BS, Charleston, SC; Shaun A. Nguyen, MD, Charleston, SC; Alexander N. Duffy, MD, Charleston, SC; Zachary M. Soler, MD MSc, Charleston, SC; Rodney J. Schlosser,

MD, Charleston, SC

Educational Objective: At the conclusion of this presentation, the participants should be able to characterize the prevalence and severity of presenting symptoms among adults with rhinitis, and to compare baseline presentation between different rhinitis subtypes.

Objectives: Key rhinitis symptoms include nasal obstruction, rhinorrhea, sneezing, and nasal itching. Different subtypes of rhinitis can have varying presentations, making it difficult to diagnose and categorize. Study Design: Systematic review and meta-analysis. Methods: A literature search was conducted from database inception to August 2024 for articles reporting baseline symptoms for adult patients with rhinitis. Specific questionnaires of interest were the Total Nasal Symptom Score (TNSS) and Visual Analogue Scale (VAS) equivalents of the four TNSS items. Rhinitis types included allergic (AR) and nonallergic rhinitis (NAR); allergic rhinitis was further subcategorized by intermittent (IAR) and persistent (PER) symptomatology. Primary outcome measures included proportions (%) and mean difference/proportion difference (Δ) with 95% confidence intervals. Results: A total of 89 studies (N=14,448 patients) were included for meta-analysis. Nasal congestion was the most severe symptom (2.03 [95% CI 1.91-2.15]) across all patients. Rhinorrhea was reported as moderate/severe (score of 2-3) at the highest frequency (93.21%). AR patients had higher total TNSS scores (7.31 vs. 5.22, [95% CI 1.84-1.91]), rhinorrhea and sneezing scores ($p<0.0001$) than NAR patients. NAR patients, however, had more severe nasal congestion (2.04 vs. 1.99 [95% CI 0.04-0.05]). PER patients recorded higher total TNSS scores than IAR patients (7.20 vs. 6.85, [95% CI 0.25-0.45), but IAR patients reported more severe individual symptoms scores for congestion, rhinorrhea, and nasal itching (all $p<0.0001$). Conclusions: Nasal congestion is the most severe symptom at baseline presentation for all subtypes of rhinitis. Allergic status and symptom duration influence both overall disease severity and individual symptom scores.

2:56 Chronic Rhinosinusitis and Access Disparity in Hispanic/Latino Patients

Janeth Garcia Swartwood, BS MS, Sacramento, CA; Aliyah Nicole Parker, BS, Sacramento, CA; Emily Grace Warda, BS, Sacramento, CA; Soroush Ershadifar, BS, Sacramento, CA; Anna Garcia Wertz, MD, Sacramento, CA

Educational Objective: At the conclusion of this presentation, the participants should be able to understand the influence of social determinants of health for our Hispanic/Latino population struggling with chronic rhinosinusitis.

Objectives: The goal of this study is to determine social determinants for the Hispanic/Latino community that influence receiving treatment for CRS. Study Design: Retrospective cohort study. Methods: Adult patients who underwent sinus surgery between 6/1/2019 to 6/1/2024 were analyzed. Demographics, SNOT-22 scores, symptom duration, CRS related healthcare visits, and ratio of urgent CRS visits were abstracted. Patients who did not have a SNOT-22 score or had prior sinus surgery were excluded. Variance was assessed using an f-test. A one tailed t-test was used to detect the presence of statistical significance for each variable. Results: A total of 85 patients were included, 21 of them identifying as Hispanic or Latino. Hispanic/Latino patients were more likely to experience CRS symptoms for 6 or more months as compared to non-Hispanic/Latino patients ($p=0.045$). Hispanics/Latinos also traveled a longer average distance to their surgery site (45.04 miles vs 23.11 miles; p less than 0.05). The average SNOT-22 score for Hispanics/Latinos compared to non-Hispanics/Latinos was not statistically different (53.25 vs 45.31; $p=0.068$). No statistical differences were shown for the average number of total CRS visits prior to surgery, visits prior to being evaluated by an otolaryngologist, visits with an otolaryngologist, number of primary care providers, ratio of urgent visits, or overall vulnerability between the groups' zip codes. Conclusions: Hispanic/Latino patients are statistically more likely to experience CRS symptoms longer than non-Hispanic/Latino patients prior to undergoing sinus surgery. A factor that may be contributing to disease burden in Hispanic patients is longer travel distances to their surgical site. Hispanic patients with CRS have a similar SNOT-22 score, zip code vulnerability, and number of visits prior to sinus surgery compared to non-Hispanic/Latino patients.

3:02 Association of Immunodeficiency with Endoscopic Sinus Surgery (ESS) Postoperative Healthcare Utilization

Jaynelle Gao, MS, Los Angeles, CA; Esther Wang, MD, Los Angeles, CA; Joshua Lin, MD, Los Angeles, CA; Kevin Hur, MD, Los Angeles, CA

Educational Objective: At the conclusion of this presentation, the participants should be able to appreciate that immunodeficiency is associated with an increased risk of post-ESS complications, including acute sinusitis, antibiotic

and steroid use, and revision surgery.

Objectives: To evaluate the association between immunocompromised status and postoperative healthcare utilization and complications in patients undergoing ESS. Study Design: Retrospective cohort study. Methods: The TriNetX U.S. Collaborative Network was queried for adult patients with a diagnosis of chronic sinusitis and receiving ESS. Patients with a history of sinonasal malignancy were excluded. Patients were stratified based on immunocompromised status (defined as being on immunomodulatory therapy or having a diagnosis of a primary immunodeficiency, an autoimmune disease, and/or a blood cancer prior to ESS). Measures of association were calculated after 1:1 propensity score matching for age, sex, race, and nasal polyps. Results: In the week following ESS, immunocompromised patients with CRS had an increased likelihood of experiencing a cerebrospinal fluid leak [OR 1.2, 95% CI (1.01, 1.45)] when compared to patients with CRS who were not immunocompromised. Immunocompromised patients also had a higher frequency acute sinusitis (8.7% vs. 6.8%, p<0.0001), antibiotic use (41.2% vs. 37.3%, p<0.0001), and oral steroid use (16.8% vs. 15.3%, p<0.0001). At one month, immunocompromised patients more frequently had an emergency department visit (3.1% vs. 2.1%, p<0.0001) and over five years, they were more likely to undergo revision ESS [OR 1.16; 95% CI (1.10,1.23)]. Conclusions: These results highlight the increased healthcare utilization and complication risks in this population, indicating a possible need for increased frequency and duration of followup in otolaryngology clinics in this population.

3:08 Q&A

Session 7: General and Sleep
Celestin D

PANEL

1:30 - 2:10 Understanding the Role of Soft Tissue Surgery for OSA in the Era of Hypoglossal Nerve Stimulation

Moderator:

Jolie L. Chang, MD FACS, San Francisco, CA

Panelists:

Colin T. Huntley, MD FACS, Philadelphia, PA
Maria V. Suurna, MD FACS, Miami, FL
Kathleen L. Yaremchuk, MD MSA, Detroit, MI

Moderators
M. Boyd Gillespie, MD MSc FACS, Memphis, TN
Maria V. Suurna, MD FACS, Miami, FL

2:20 Dietary Quality in Patients with Obstructive Sleep Apnea Presenting to a Sleep Surgery Clinic

Rachel B. Kutler, BA, New York, NY; Marie-Pierre St-Onge, PhD, New York, NY; Sanja Jelic, MD, New York, NY; Yi Cai, MD, New York, NY

Educational Objective: At the conclusion of this presentation, the participants should understand the dietary quality amongst patients within a sleep surgery clinic.

Objectives: Obstructive sleep apnea (OSA) increases cardiovascular (CV) disease risk. Though diet is foundational to CV health, there is limited knowledge about dietary quality (DQ) in OSA patients. This study evaluates DQ within sleep surgery clinic patients. Study Design: Cross-sectional. Methods: Patients with OSA or high risk for OSA (STOP-BANG scores at least 5) were recruited from an academic sleep surgery clinic (n=33, 67% male). Healthy Eating Index scores (HEIs) were obtained (below 61 considered unhealthy DQ; 61-69, intermediate; above 69, healthy) via Mini-EAT questionnaires. OSA status (treated versus untreated) and apnea hypopnea index (AHI) were determined from chart review. Linear regression, Welch's t-tests, and chi square tests were applied in analyses. Results: On average, participants were middle aged (52.8 +/- 13.9 years), overweight (BMI, 28.4 +/- 4.4), with moderate severe OSA (AHI, 29.0 +/- 23.1), and had intermediate DQ (HEI, 63.2 +/- 7.9). There was no association between HEI and baseline AHI after adjusting for BMI (p = 0.95). Of 25 participants with recent sleep studies, 16 had untreated OSA (AHI, 28.3 +/- 25.5 including 14 who failed medical treatments). Untreated versus treated subgroups did not differ in age (p =

0.66), sex (p = 0.44), or BMI (p = 0.65). Untreated patients had unhealthy DQ (HEI, 60.7 +/- 5.7) while treated patients had intermediate DQ (HEI, 67.1 +/- 10.1), though mean HEIs did not statistically differ between subgroups (p = 0.12). Conclusions: DQ could be substantially improved in sleep surgery clinic patients, especially among untreated OSA patients. This population, despite non-obese average BMI, may warrant nutritional intervention to alleviate CV risk.

2:26 Questionnaire Assessment of Surgeons' Intraoperative Troubleshooting of Hypoglossal Nerve Stimulator Cuff Placement

Nicole A. Derdzakyan, BS, Washington, DC; Jackson Randolph, MD, Washington, DC; Jessica H. Maxwell, MD MPH, Pittsburgh, PA; Michael Hoa, MD, Washington, DC; Sarah K. Rapoport, MD, Washington, DC

Educational Objective: At the conclusion of this presentation, the participants should be able to identify surgeons' intraoperative troubleshooting processes for cuff placement during hypoglossal nerve stimulator implantation.

Objectives: Assess surgeons' intraoperative decision making when facing issues with cuff placement and dysfunction during hypoglossal nerve stimulator (HGNS) implantation. Study Design: Retrospective study. Methods: A web based questionnaire was distributed between February 2024 to May 2024 to 1,208 surgeons who were certified to perform HGNS implantation. This 15 item questionnaire was comprised of Likert scale questions inquiring about surgeons' intraoperative troubleshooting processes during HGNS cuff placement and implant testing. Results: A total of 149 (12.3%) surgeons completed the survey. A majority of respondents (n=141, 94.6%) reported always resolving tongue retraction intraoperatively. Among these surgeons, 62 (49.3%) reported resolving such issues in under 15 minutes, whereas 16 (10.7%) respondents reported requiring more than 30 minutes to resolve issues of cuff dysfunction. When both tongue retraction and protrusion were observed during intraoperative HGNS implant testing, the first most common step respondents reported taking was to dissect the distal aspect of the hypoglossal nerve (HN) to exclude one or more nerve branches (n=69, 46.3%). The second most common first step taken was to stimulate superior and/or deep aspects of the HN (n=31, 20.8%). The third most common first step taken was to remove and replace the cuff (n=27, 12.8%). Among those who reported experiencing cases where they were unable to resolve tongue retraction (n=6, 4.0%), the most common first step taken to troubleshoot the issue was to dissect the distal aspect of the HN to exclude one or more nerve branches. Conclusions: As more surgeons pursue training in HGNS implantation, there is reason to optimize intraoperative efficiency of the surgery. While the steps for implantation are already quite streamlined, limited guidance exists for troubleshooting intraoperative issues of implant dysfunction. Our study underscores the variability among surgeons' decision making to resolve issues with cuff placement. Developing algorithms for management of these issues could help improve intraoperative troubleshooting and further optimize implant outcomes.

2:32 Effect of Positive Airway Pressure Device in High Risk Pregnancy Patients with Obstructive Sleep Apnea: A Systematic Review and Meta-Analysis

Thamiris Dias Delfino Cabral, MD, Rio de Janeiro, Brazil; Jaime Plane, MS, Santiago, Chile; Renata Knoll, MD, Boston, MA; Patricia Viana, MS, Criciuma, Brazil; Bruno Dalla Vecchia Vendramini, MS, Sao Joao Del Rei, Brazil; Phillip Huyett, MD, Boston, MA

Educational Objective: At the conclusion of this presentation, the participants should be able to comprehend the impact of positive airway pressure (PAP) devices on patients with high risk pregnancy and obstructive sleep apnea (OSA).

Objectives: To assess the effects of PAP devices in high risk pregnancy patients with OSA. Study Design: A systematic review and meta-analysis. Methods: Medline, Embase, Cochrane, and Web of Science databases were searched for studies comparing PAP devices to no treatment or non-PAP treatment modalities, such as waitlist, sham PAP, and nasal dilator strips in high risk pregnancy patients with OSA. Outcomes of interest included fasting plasma glucose (FPG), mean arterial pressure (MAP), Epworth Sleepiness Scale (ESS), preeclampsia (PE), cesarian section (C-section), birth weight (BW), Apgar at 1 and 5 minutes, preterm delivery, rate of small or large for gestational age (S or LGA), and neonatal intensive care unit (NICU) admission. Risk ratio (RR) and mean difference (MD) were used for binary and continuous outcomes, respectively. Results: Seven studies involving 631 patients were included, of which 291 received PAP therapy. PAP use was associated with lower FPG (MD -5.25, 95% confidence interval -6.58 to -3.91, p<0.00001, I2=0%). No significant difference was seen in MAP (p=0.05), ESS (p=0.13), PE (RR 1.00, p=1.00), C-section (RR 0.77, p=0.25), BW (p=0.27), Apgar 1 and 5 minute (p=0.46 and p=0.15, respectively), preterm delivery (RR 0.61, p=0.18), SGA (RR 0.40, p=0.24), LGA (RR 1.29, p=0.33), and NICU admission (RR 1.02, p=0.97). Conclusions: Our

findings suggest that PAP improves FPG in high risk pregnancy patients, although its impact on other pregnancy and neonatal outcomes appears to be limited.

2:38 Variability in Physical Exam Documentation for Obstructive Sleep Apnea

Jacob Hauser, BS, Loma Linda, CA; Alexandra Vacaru, BS, Loma Linda, CA; Nihal Punjabi, BS, Loma Linda, CA; Jared C. Inman, MD, Loma Linda, CA

Educational Objective: At the conclusion of this presentation, the participants should be able to recognize the variability in physical exam documentation for obstructive sleep apnea (OSA) across specialties and institutional settings and appreciate the need for standardized documentation to improve diagnostic accuracy and communication.

Objectives: This study aims to evaluate variability in obstructive sleep apnea (OSA) physical exam documentation, contrast documentation between institutional settings, and identify interspecialty differences in documentation. Study Design: Cross-sectional analysis of a widely used electronic medical record (EMR) system to assess OSA physical exam characteristics. Methods: The terms "sleep apnea" or "obstructive sleep apnea physical exam" were used to search the Epic community library, a shared database of user created documentation templates for 478 institutions using the Epic EMR. Physical exam templates assessing sleep apnea were identified. Each template was evaluated against a checklist of 25 'key' physical exam characteristics derived from a clinical guideline by the Adult OSA Task Force of the American Academy of Sleep Medicine. The institution name, specialty of the template, date, and clinical setting (academic, community, or health network) were also collected. Results: Of 6,621 templates from 478 institutions, 579 relevant templates were identified. The most documented features were vitals (89.1%), tonsil size (69.5%), and septal deviation (60.2%). Least frequently recorded were waist hip ratio (0.8%), hyomental distance (1.6%), and Cottle maneuver (1.6%). On average, each template documented 7.5 (SD 3.4) 'key' characteristics, with little consistency observed. Academic centers contributed 50% of unique exams, while community centers accounted for 16%. When comparing the two specialties with the most physical exam templates, sleep medicine documented neck circumference (58% vs 17%, p=0.0010) and Mallampati scores (71% vs 33%, p=0.0022) more often than otolaryngology, which documented more on nasal features: septal deviation (88% vs 58%, p=0.0106), nasal polyps (67% vs 21%, p=0.0001), turbinate hypertrophy (79% vs 29%, p=0.0001), nasal congestion/drainage (63% vs 29%, p=0.0059), and adenoids (50% vs 2%, p<0.0001). BMI was documented in 36.7% of exams. Conclusions: Significant variability in OSA physical exam documentation across institutions and specialties may contribute to disparities in patient evaluation and treatment. Standardized OSA physical exam templates could facilitate effective communication between subspecialty providers and result in better patient outcomes.

2:44 Suicidal Ideation and Behaviors in Adults with Obstructive Sleep Apnea: A Systematic Review and Meta-Analysis

Lauren R. McCray, BS, Charleston, SC; Anna J. Kulangara, BS, Charleston, SC; Shaun A. Nguyen, MD, Charleston, SC; Ted A. Meyer, MD PhD, Charleston, SC; Robert F. Labadie, MD PhD, Charleston, SC; Mohamed A. Abdelwahab, MD PhD, Charleston, SC

Educational Objective: At the conclusion of this presentation, the participants should be able to understand relations between obstructive sleep apnea (OSA) and suicidality.

Objectives: The goal of this systematic review is to demonstrate relations between OSA and suicidality including suicidal ideation, suicide attempts, and completed suicide. Furthermore, we want to highlight the clinical importance of relations between OSA and mental health. Study Design: A systematic review with meta-analysis. Methods: A search of CINAHL, Cochrane Library, PubMed, PsycINFO and Scopus was conducted according to PRISMA guidelines. Primary outcome measures included continuous measures (mean), proportions (%), and relative risks (RR) with 95% confidence intervals (CI). Results: Fifteen studies (n=1,438,523) pertaining to suicidality and OSA in an adult population were included. The mean age was 52.1 for the OSA group and 55.2 for the control group. The OSA group had a significantly higher prevalence of depression (12.6% vs. 5.3%), anxiety (15.9% vs. 5.9%), suicidal ideation (12.4% vs. 3.7%), suicide attempts (1.5% vs. 0.9%), and completed suicide (0.3% vs. 0.2%) than the control population ($p < 0.0001$). The OSA group also had a significantly higher risk of suicidal ideation (RR = 1.8, 95% CI: 1.5-2.1), suicide attempts (RR = 1.7, 95% CI: 0.3 -10.2), and completed suicide (RR = 1.9, 95% CI: 1.1-3.4) than the control group ($p < 0.0001$). Conclusions: OSA can significantly impact mental health, and the literature demonstrates a relationship between OSA and suicidality. Thus, we recommend that health providers interacting with these patients screen for mental health comorbidities and suicidality.

2:50 Comparing Non-Apneic Outcomes of CPAP and Hypoglossal Nerve Stimulation Using the Withings Sleep Analyzer (WSA)

Praneet Chandra Kaki, BS, Philadelphia, PA; Jaehee Kim, BA, Philadelphia, PA; Nicole L. Molin, MD, Philadelphia, PA; Erin Creighton, MD, Philadelphia, PA; Maurits Boon, MD, Philadelphia, PA; Colin Huntley, MD, Philadelphia, PA

Educational Objective: At the conclusion of this presentation, the participants should be able to understand the potential utility of the Withings sleep analyzer in tracking key non-apneic sleep metrics in patients with obstructive sleep apnea (OSA) being treated with CPAP or hypoglossal nerve stimulation (HGNS) therapy.

Objectives: Hypoglossal nerve stimulation (HGNS) is a treatment alternative for patients with obstructive sleep apnea (OSA) who are intolerant of or fail to respond to continuous positive airway pressure (CPAP) therapy. Using the Withings sleep analyzer (WSA), a nonintrusive unattended mattress device, we compare non-apneic sleep metrics between patients who received HGNS and CPAP treatment. Study Design: Single institution prospective cohort study. Methods: Patients undergoing treatment with either CPAP or HGNS were prospectively recruited. The WSA was used to assess sleep time, snoring episodes, and cardiopulmonary data using its built in proprietary algorithm. Patients with 30 days of sleep tracking and device usage data were included. Results: 23 patients (average age 57.4 years, 65% male, 87% white) with complete data were included, of which 11 patients were treated with CPAP and 12 with HGNS. Average baseline AHI across the patient population was 29.9 events/hour and did not differ between cohorts. Average baseline Epworth Sleepiness Scale (ESS) score was 9.00 across the cohort and decreased by 2.33 following therapy. Patients treated with HGNS experienced more snoring episodes/night compared to those undergoing CPAP (3.13 vs 2.08, p=0.027). Average usage/night (6.70h, p=0.4), heart rate (63.17 bpm, p=0.4) and respiratory rate (14.29, p=0.7), as determined by the WSA were similar between CPAP and HGNS patients. Conclusions: Patients undergoing treatment with CPAP experienced fewer snoring episodes/night as measured by the WSA compared to HGNS patients. Further study is warranted to determine the utility of the WSA in continuous monitoring and patient education in these patient populations.

2:56 Effect of Malocclusion on Patient Response to Hypoglossal Nerve Stimulator Therapy

Emily R. Baker, BS, Memphis, TN; Meghana Chanamolu, MD, Memphis, TN; Paul M. Putnam, BS, Memphis, TN; Marion B. Gillespie, MD, Memphis, TN

Educational Objective: At the conclusion of this presentation, the participants should be able to describe how taking the occlusal status of patients into account may be beneficial when evaluating candidacy for hypoglossal nerve stimulation.

Objectives: Variations in craniofacial anatomy have been associated with obstructive sleep apnea (OSA) development and may impact response to medical and surgical therapies. This study aims to evaluate the effect of malocclusion on the clinical response to hypoglossal nerve stimulator (HNS) therapy. Study Design: Retrospective cohort study. Methods: This is a retrospective cohort study evaluating patients with OSA who underwent HNS placement between May 2017 - December 2022. Occlusion was determined using Angle's classification criteria, and outcome measures including preoperative and postoperative apnea hypopnea index (AHI), lowest O2 saturation (SpO2), and Epworth Sleepiness Scale (ESS) were analyzed. Two cohorts were created by grouping patients with class I occlusion (normal) and those with class II or class III occlusion (malocclusion). Results: 118 patients were included in the analysis. 83 patients had class I occlusion and 25 patients had class II or class III occlusion. There was no significant difference in the average age (65.0 vs 64.7), BMI (29.2 vs 30.1), or preoperative AHI (37.3 vs 32.7) between these two groups. Those with normal occlusion experienced a significantly greater reduction in AHI than those with class II or class III occlusion (20.2 vs 7.2, p=0.03). The mean postoperative AHI in those with class I occlusion was reduced to 17.8, while the mean postoperative AHI in those with class II or class III occlusion was 24.8. Conclusions: This study suggests patients with malocclusion may experience diminished efficacy to HNS therapy. This information can assist healthcare professionals in identifying individuals who are most likely to benefit from HNS therapy or who may require more specific targeted therapy to address underlying structural abnormalities.

3:02 Evaluation of Sinonasal Function after Maxillomandibular Advancement

Nicolas S. Poupore, MD, Charleston, SC; Henry Butehorn, BS, Charleston, SC; Mohamed F. Kassir, PhD, Charleston, SC; Mohamed Abdelwahab, MD PhD, Charleston, SC

Educational Objective: At the conclusion of this presentation, the participants should be able to understand the effects of maxillomandibular advancement (MMA) on sinonasal function postoperatively

Objectives: To analyze the effects of MMA on sinonasal function postoperatively. Study Design: A prospective study at a tertiary referral center was performed starting January 2023. Methods: We performed nasal modifications to help mitigate adverse sinonasal outcomes. The SNOT-22 was collected preoperatively and one, three, and six months postoperatively. Preoperative and six month postoperative CT scans were compared using the Lund-Mackay scoring system. Paired t-tests and one way ANOVA with repeated measures were performed for total score, total sinonasal score (sum of questions 1-12), and each symptom. Results: Thirty-two patients were included. Median age was 53.0 years (range 20-68). Preoperative AHI (50.8 +/- 26.4) and SpO2 Nadir (74.07 +/- 18.4%) improved to 15.1 +/- 11.5 and 84.2 +/- 3.8%, respectively. Total SNOT-22 significantly decreased postoperatively at one month (46.9 +/- 20.8 vs. 17.3 +/- 16.8, p=0.001) and three months (13.5 +/- 15.8, p=0.039), with scores stabilizing at six months (15.0 +/- 15.7, p=0.999). Total sinonasal scores significantly decreased at one month (15.8 +/- 12.2 vs. 8.5 +/- 8.3, p=0.002), approached significance at three months (6.3 +/- 7.6, p=0.071), and stabilized at six months (7.9 +/- 7.6, p=0.999). Nasal blockage, cough, and dizziness significantly improved at one month, and the need to blow nose, sneezing, runny nose, postnasal drip, and ear pain significantly improved at three months. Facial pain/pressure significantly worsened after one month, with a return to baseline at three months. All symptoms did not significantly worsen at six months. Lund-Mackay scores significantly improved at six months (2.3 +/- 1.6 vs. 0.8 +/- 0.9, p=0.004). Conclusions: Patients who underwent MMA did not show worsening sinonasal function, with evidence of significant improvement with at least six month stability after MMA. Continued followup and further patient stratification are needed to support these findings.

3:08 Q&A

3:10 BREAK/VISIT EXHIBITORS/VISIT POSTERS

Concurrent Sessions 3:35 - 5:25

Session 9: General
Celestin ABC

Moderators
Susan R. Cordes, MD FACS, Stockton, CA
Ashutosh Kacker, MD FACS, New York, NY

3:35 Venous Thromboembolism in Otolaryngology-Head and Neck Surgery Procedures: Systematic Review and Meta-Analysis
Shannon S. Wu, MD, Palo Alto, CA; Mikhail Saltychev, MD, Turku, Finland; Steven Losorelli, MD, Palo Alto, CA; Cherian K. Kandathil, MD, Palo Alto, CA; Sam Most, MD, Palo Alto, CA

Educational Objective: At the conclusion of this presentation, participants will have an improved understanding of the existing evidence for rates of VTE, and risk factors for VTE, among otolaryngologic procedures.

Objectives: Venous thromboembolism (VTE) is a serious perioperative complication that is associated with morbidity and mortality. This study aims to evaluate the evidence on the incidence of VTE and to summarize reported rates of VTE as well as associated risk factors specifically for surgical procedures in otolaryngology-head and neck surgery. Study Design: Systematic review and meta-analysis. Methods: The databases of Medline, Embase, Cinahl, Central, Scopus, and Web of Science were searched from inception through August 1, 2024, for clinical and observational studies of adult patients who underwent any type of otolaryngologic surgery. Studies published in peer reviewed academic journals with abstracts available and without restrictions on language or time of publication were included. Pilot reports, case reports, case series (<10 patients), descriptive publications on surgical techniques, theses, conference proceedings, letters (except research letters and brief reports), and editorials were excluded. Results: A total of 2285 studies were identified. After excluding 1665 duplicates and unrelated studies, 620 articles were screened

based on titles and abstracts. This yielded 187 studies encompassing comprehensive otolaryngology, laryngology, rhinology and skull base surgery, sleep surgery, otology and neurotology, and head and neck oncologic and reconstructive surgery. These articles will be assessed for eligibility based on full text. Conclusions: Rates of VTE in otolaryngology-head and neck surgery by age, sex, time of occurrence, and other descriptive parameters will be assessed and summarized across studies.

3:41 Developing a Planar, Air Liquid Interface Cell Culture Model of Tonsil Epithelium

Morgan N. McCain, BS, Chapel Hill, NC; Marian Leslie Fulcher, BA, Chapel Hill, NC; Wade G. McClain, DO, Chapel Hill, NC; Adam J. Kimple, MD PhD, Chapel Hill, NC; Scott H. Randell, PhD, Chapel Hill, NC; Phillip W. Clapp, PhD, Chapel Hill, NC

Educational Objective: At the conclusion of this presentation, the participants should be able to identify how different media and substrate conditions affect cell culture growth of tonsil epithelium.

Objectives: Epithelial cell raft cultures are a primary model for tonsil research, offering valuable insights into tissue behavior. However, they are technically challenging to produce and unsuitable for key scientific approaches. We are developing a planar, air liquid interface cell culture model to address these constraints. Study Design: Preliminary study in cell culture method development. Methods: With appropriate donor consent, excised palatine tonsils were obtained and epithelial cells were isolated and expanded via the conditionally reprogrammed cell method. Cells were cultured at an air liquid interface on two types of porous, collagen coated membranes (Millipore Millicell and Corning Transwell) using four medias: keratinocyte serum free (KSFM), air liquid interface (ALI), ALI with 0.5% Ultroser G (USG), and PneumaCult ALI (PC). On culture day 20, transepithelial electrical resistance (TEER) was measured and membranes were fixed for morphological analysis. Results: Live cell phase contrast microscopy revealed epithelial sloughing after day 15. By day 18, cells in KSFM on both substrates and in ALI on Millicell membranes lost barrier integrity. TEER was highest in USG cultures. Cytoarchitecture varied across all eight conditions. The epithelium ranged from 1-4 cell layers thick and variability in cell morphology suggested multiple cell types. USG cultures demonstrated superior barrier integrity and consistent cytoarchitecture. PC cultures on Transwells exhibited multilayered differentiation with minimal epithelial sloughing. Conclusions: Different media and substrate conditions resulted in variable growth, barrier properties, and morphology, but none closely replicated the in vivo stratified squamous morphology. Future studies will optimize media, substratum, and mesenchymal cell co-culture to develop a well differentiated model suitable for viral infection.

3:47 Medical Therapy Algorithm with Telehealth Reduces Procedures and Transfers for Peritonsillar Abscess

Aviv Spillinger, MD, Madison, WI; Erin Dimon, MD, Madison, WI; Anna Schmidt, PA, Madison, WI; Hani Kuttab, MD, Madison, WI; David Oliver Francis, MD, Madison, WI; Sandra Lin, MD, Madison, WI

Educational Objective: At the conclusion of this presentation, the participants should be able to decide whether a primary medical therapy algorithm utilizing telehealth for peritonsillar abscess (PTA) can reduce unnecessary treatment, interhospital transfers, and improve healthcare utilization for patients presenting with small, uncomplicated PTAs.

Objectives: To determine whether a primary medical therapy algorithm utilizing telehealth for peritonsillar abscess (PTA) can reduce unnecessary treatment, interhospital transfers, and improve healthcare utilization for patients presenting with small, uncomplicated PTAs. Study Design: Prospective case series, quality Improvement. Methods: A PTA medical therapy algorithm was implemented at a tertiary care academic medical center for patients with PTA size < 2 cm based on computed tomography imaging. Eligible patients presenting to the emergency department or for which an interhospital transfer was requested were managed according to the algorithm. Telehealth followup was used to monitor patient progress and assess for complications. Outcomes measures included rates of complications, appropriate telehealth followup, and treatment success. Results: Nineteen patients were enrolled over a period of six months. No patient developed complications, and 15 (78.9%) patients were successfully treated with medical therapy alone. The remaining four (21.1%) patients were treated with a salvage incision and drainage procedure. Telehealth followups were done for 13 (68.4%) patients, 53.8% of which occurred within 48 hours from the index presentation. Six (31.5%) patients were successfully treated at distant hospitals averaging over 40 miles away. Another nine (47.3%) patients were treated at a regional hospital without otolaryngology coverage, three of which ultimately transferred for salvage incision and drainage. Conclusions: Preliminary data suggests a medical therapy algorithm for PTA with close telehealth followup can safely reduce unnecessary treatment and interhospital transfers. Ongoing

recruitment of additional patients over time will further elucidate the safety, success, and feasibility of this algorithm.

3:53 Assessment of Geographical Limitations to Access to Otolaryngology Care in the Southeast United States
Sarah M. Clark, MD, Winston-Salem, NC; Jim Ruckart, MBA, Winston-Salem, NC; Lucas Klever, BS, Winston-Salem, NC; Sabine Abukhadra, BS, Winston-Salem, NC; Mary Dover, BS, Winston-Salem, NC; Lyndsay Madden, DO, Winston-Salem, NC

Educational Objective: At the conclusion of this presentation, the participants should be able to discuss geographic variability of access to otolaryngology care in the southeast U.S. and its implications.

Objectives: There is a substantial shortage of otolaryngologists across the United States (U.S.), most of whom are concentrated in urban areas. This leaves geographical "deserts" that lack access to services and result in greater disparities. We investigate access to care in the Southeast stratified by drive times and by number of otolaryngologists per Designated Market Area (DMA). Study Design: Not applicable. Methods: Data was collected for southeast U.S. otolaryngologists via publicly accessible databases. We also identified level I trauma centers serving the Southeast as a proxy for access to the most comprehensive otolaryngology services. Descriptive statistics and analysis of results were conducted with subsequent creation of heat maps using Smappen online location intelligence platform. Results: Data is visually represented via heat mapping and includes the percentage of each state's population that lives within 30 minutes to 2 hours of a level I trauma center and from an otolaryngologist. We also calculated the number of otolaryngologists per DMA. Data showed drive time and geographic proximity were significantly variable within and between each state. Additionally, there are many DMAs where the population living in a geographic desert is small. However, there was still an insufficient number of otolaryngologists for the size of the population in many regions. Conclusions: This data adds to existing literature with novel analysis of time based access to care, highlighting inequities of accessibility for rural populations in the southeast U.S. Public health leaders, policy advocates, hospital systems, and physicians can gain insight into specific needs for improved geographic access to otolaryngology care in underserved areas.

3:59 Airway Compromise in Adults following Anterior Cervical Decompression and Fusion: A Systematic Review and Meta-Analysis
Anuja H. Shah, BA, Washington, DC; Emily A. Clementi, BA, Washington, DC; Kelsey Limage, BS, Washington, DC; Earl H. Harley, MD, Washington, DC

Educational Objective: At the conclusion of this presentation, the participants should be able to understand and appreciate the association between postoperative airway compromise (PAC) and anterior cervical decompression and fusion (ACDF) surgery.

Objectives: To evaluate the incidence of PAC in patients undergoing ACDF, and to assess factors associated with PAC in this population. Study Design: Systematic review and meta-analysis. Methods: Following PRISMA guidelines, CINAHL, Cochrane Library, PubMed, and Scopus were searched from inception to July 10, 2024. Studies that assessed airway complications of ACDF were included for meta-analysis (proportions, odds ratio). Results: Of 443 abstracts identified, 32 studies (N=769,839 patients) were included. Among ACDF patients, the incidences of PAC, unplanned intubation, and delayed extubation were 0.91% (0.73, 1.1), 0.52% (0.4, 0.66), and 0.57% (0.32, 0.89) respectively. Patients with PAC displayed increased odds of having an ASA class greater than one (OR, 3.93, [3.10, 4.98], $p<0.001$), bleeding disorder or anticoagulation use at the time of surgery (OR, 3.14, [2.61, 3.78], $p<0.001$), fusion of four or more vertebral levels (OR, 1.89, [1.54, 1.31], $p<0.001$), and smoking history (OR, 1.16, [1.01, 1.34], $p=0.043$). Surgical level C4 and above (OR, 4.02, [0.84, 19.28], $p=0.08$) and obstructive sleep apnea (OR, 2.14, [0.72, 6.38], $p=0.17$) did not exhibit increased odds among patients with PAC compared to those without PAC following ACDF. Conclusions: PAC is a rare but potentially lethal complication of ACDF. Preoperative identification of patients with risk factors can allow for tailored perioperative management to minimize the occurrence of PAC.

4:05 Clostridioides Difficile Infection after Otolaryngologic Surgery: An ACS NSQIP Analysis
Matthew Y. Liu, MD, San Antonio, TX; Melis N. Bayrak, BA, San Antonio, TX; Philip G. Chen, MD, San Antonio, TX

Educational Objective: Clostridioides difficile infection (CDI) is the most common healthcare associated infection in the United States. CDI in the postoperative patient increases hospital utilization, morbidity, and mortality. While

previous studies have investigated CDI in the postoperative period, none have specifically examined CDI after otolaryngologic surgery. At the conclusion of this presentation, participants should be able to: 1) compare the incidence of CDI after otolaryngologic surgery to the reported national CDI incidence; 2) identify the most common otolaryngologic procedures that put patients at risk for CDI; 3) recognize the preoperative risk factors for CDI in otolaryngologic surgery; and 4) appreciate the associated postoperative outcomes of otolaryngologic patients with CDI.

Objectives: To examine the incidence, risk factors, and postoperative outcomes of clostridioides difficile infection (CDI) in otolaryngologic surgery. Study Design: Retrospective cohort. Methods: Subjects undergoing otolaryngologic surgery were identified using the 2016-2021 American College of Surgeons National Surgical Quality Improvement Program (ACS NSQIP). The incidence of CDI, preoperative risk factors, and associated outcomes in patients with postoperative CDI were assessed. Results: One hundred ninety-six subjects experienced postoperative CDI out of 151,643, with a CDI incidence of 8.8 cases per 10,000 patient days. Postoperative CDI was more commonly observed in head/neck and reconstructive surgeries. Preoperative characteristics associated with CDI included being older in age, male gender, inpatient status, admitted from a healthcare facility, actively smoking, and comorbidities including obesity, ventilator dependence, pulmonary disease, heart failure, hypertension, dialysis, disseminated cancer, bleeding disorders, preoperative sepsis, preoperative blood transfusion, non-independent functional status, and higher ASA class. A longer operation time was associated with postoperative CDI. Postoperative complications associated with CDI included increased length of hospital stay, surgical site infection, wound dehiscence, pneumonia, unplanned intubation, pulmonary embolism, prolonged ventilator exposure, urinary tract infection, stroke, cardiac arrest, myocardial infarction, postoperative blood transfusion, deep vein thrombosis, sepsis, unplanned readmission, and discharged to a non-home facility. Conclusions: CDI after otolaryngologic surgery occurs at an incidence comparable to the national CDI rate with many preoperative risk factors and postoperative complications associated with such infection. Knowledge about these risk factors and potential consequences may aid otolaryngologists in judicious antibiotic use and prevention of postoperative CDI, thus decreasing healthcare cost and patient morbidity.

4:11 Q&A

PANEL

4:20 - 5:20 SECOND ANNUAL GERALD B. HEALY PANEL
Continuing the DEI Conversation: A Deeper Dive
Moderator:
L. D. Britt, MD MPH FACS, Norfolk, VA
Panelists:
Sujana S. Chandrasekhar, MD FACS, New York, NY
Earl H. Harley, MD FACS, Washington, DC
Albert L. Merati, MD, Seattle, WA
Dana M. Thompson, MD MS MBA FACS, Chicago, IL

Session 10: Rhinology
Celestin D

PANEL

3:35 - 4:15 A Pragmatic Approach to the Use of Biologics in Sinonasal Disease
3:35 - 3:40 Introduction
Peter H. Hwang, MD FACS, Palo Alto, CA
3:40 - 3:48 Current & Upcoming Options
John M. DelGaudio, MD FACS, Atlanta, GA
3:48 - 3:56 Biologics versus Surgery: What's the Evidence?
Devyani Lal, MD MBBS MS, Phoenix, AZ
3:56 - 4:04 Cost Analysis and Economic Drivers
George A. Scangas, MD, Boston, MA
4:04 - 4:14 Discussion and Summary
Todd T. Kingdom, MD FACS, Aurora, CO

5:25 ADJOURN

POSTER PROGRAM

ALLERGY/RHINOLOGY

1. Deployment as a Risk Factor of Rhinologic Disease

Erin E. Briggs, BS, Charleston, SC; Nathaniel J. Schlosser, BS, Charleston, SC; Shaun A. Nguyen, MD, Charleston, SC; Matthew T. Ryan, MD, Bethesda, MD; Alexander N. Duffy, MD, Charleston, SC

Educational Objective: At the conclusion of this presentation, the participants should be able to identify deployment as a risk factor for rhinologic disease such as chronic rhinosinusitis and allergic rhinitis.

Objectives: Identify deployment as a risk factor for rhinologic disease and investigate exposures in the deployed population that may play a role in the pathology. Highlight the clinical importance of the limitations in the current literature. Study Design: Systematic review and meta-analysis. Methods: Literature was searched from inception to July 2024 for articles reporting rhinologic disease in active duty service members (ADSM). Specific diseases of interest were chronic rhinosinusitis (CRS), allergic rhinitis (AR), bronchitis, asthma, and olfactory dysfunction (OD). Primary outcome measures included mean difference/proportion difference (Δ), proportions (%), and risk ratio (RR) with 95% confidence intervals (CI). Results: A total of ten studies (N=2,789,222) were included. The prevalence of CRS in deployed ADSM was significantly higher than in the cohort of military members not deployed (8.1% vs 3.5% [95% CI: 4.46 - 4.60], p <0.0001). The relative risk of developing CRS between ADSMs deployed and not deployed was 3.02 ([95% CI: 2.96-3.08], p < 0.00001). The prevalence of AR, bronchitis, and asthma were also significantly higher in deployed ADSM with RRs = 2.68, 4.55, and 2.5 ([95% CIs: 2.65-2.72, 4.34-4.76, and 2.46-2.54, respectively], all p < 0.00001). Conclusions: Deployed ADSM have significantly higher rates of CRS and unspecified sinus disease, as well as higher rates of AR, bronchitis, and asthma compared to their counterparts not deployed. Specific exposures such as burn pits, particulate matter 2.5, and housing accommodations were correlated to increased rhinologic disease.

2. Does Choice of Nasal Packing Matter? A Meta-Analysis and Systematic Review of Rapid Rhino and Merocel

Camille Duggal, BA, London, ON Canada; Kathleen Zang, BMSc, London, ON Canada; Hanieh Tavakkoli, DDS, London, ON Canada; Dhatri Shukla, MSc, London, ON Canada; Japan Shukla, MSc, London, ON Canada; Leigh Sowerby, MD MHM FRCSC, London, ON Canada

Educational Objective: At the conclusion of this presentation, the participants should be able to appreciate differences in nasal packing for surgical and primary epistaxis management. Additionally, participants should gain a better understanding of how the choice of nasal packing impacts pain and the risk of rebleeding.

Objectives: Epistaxis is one of the most common head and neck related emergencies, and one of the most common postoperative complications from rhinologic surgery. Management often involves nasal packing when initial measures fail. This paper aims to compare rapid rhino (RR) and Merocel in managing and preventing epistaxis. Study Design: A systematic review and subsequent meta-analysis were performed, preregistered on PROSPERO and adhering to PRISMA guidelines. Methods: Databases including Embase, PubMed, and Cochrane Library were screened, followed by data extraction and risk of bias assessment. The meta-analysis was performed using Stata. Pain score effect size was based on raw means at packing removal, while rebleeding effect size used Freeman-Tukey's proportion. Pain score at removal and rebleeding requiring repacking or reintervention was assessed. Results: The systematic review yielded 3229 studies for screening, 51 meeting the inclusion criteria. In primary epistaxis (n=15), RR was associated with less pain upon insertion and removal (mean=2.36 [1.10, 3.62] vs. 4.12 [3.30, 4.94]; p=0.02). In the surgical setting (n=36), RR demonstrated superior hemostasis and greater patient comfort. The meta-analysis demonstrated that for post-surgical packing, RR was significantly less painful on removal than Merocel (mean=2.11 [1.06, 3.16] vs. 6.36 [5.66, 7.05]; p=0.00). All tests of group differences for rebleeding demonstrated no significant difference between nasal packs. Conclusions: RR is significantly less painful upon removal and should be the pack of choice in epistaxis management. RR generally demonstrated lower rebleed rates but this difference was not significant.

3. A Novel Method of Objective Endoscopic Sinus Surgery Skill Assessment Using a Three Dimensional Instrument Navigation System

Forrest W. Fearington, BS, Rochester, MN; Christopher Jabbour, MD, Rochester, MN; Carlos Pinheiro Neto, MD PhD, Rochester, MN; Janalee Stokken, MD, Rochester, MN

Educational Objective: At the conclusion of this presentation, participants should be able to recognize how a 3 dimensional instrument navigation system may be used to evaluate resident surgical skill during live sinus surgeries.

Objectives: Evaluation of surgical resident technical performance has historically relied on subjective perioperative feedback. Despite various assessment tools attempting to provide reliable, consistent surgical skill evaluations among otolaryngology residents, current methods remain inherently subjective. This pilot study aimed to assess the utility of objective metrics obtained from a 3 dimensional surgical navigation system during real life endoscopic sinus surgery (ESS). Study Design: Prospective observational study. Methods: Otolaryngology residents performed supervised ESS on patients while their instrument motion was recorded using a TruDi Navigation System (ENS022B). Prior to the surgery, key surgical landmarks and "danger zones" were defined with sensory beacons in the navigation system using the patient's preoperative computed tomography (CT) scan. Metrics collected included time to reach key beacons and the number of alerts per minute at each beacon. Results: Fifteen otolaryngology residents performed a total of 87 ESS (21 by PGY3, 10 by PGY4, 56 by PGY5). The navigation system successfully obtained "time to reach sinus X" data for 64% of sinuses per case, velocity data in 93% of cases, and number of beacon "alerts" per minute in 93% of cases. Beacon data showed that junior residents (PGY3) were less likely to trigger sphenoid sinus beacons and had fewer sphenoid sinus alerts per minute ($p = 0.01$) compared to senior residents (PGY4-5), and that senior residents were more likely to access the maxillary sinus via the natural os ($p < 0.001$). Senior residents also reached key sinus beacons more quickly than junior residents, albeit not to a statistically significant degree. Conclusions: Our protocol utilized 3 dimensional instrument navigation technology to find significant differences in metrics between junior and senior residents during live surgeries. We hope this report encourages further research into this technology's application in objective resident skill assessment.

4. Racial and Ethnic Disparities in Biologic Prescriptions for CRSwNP in the United States

Jaynelle Gao, MS, Los Angeles, CA; Kevin Hur, MD, Los Angeles, CA

Educational Objective: At the conclusion of this presentation, the participants should be able to appreciate that the prescription of biologics for the management of chronic rhinosinusitis with nasal polyps (CRSwNP) varies by race and ethnicity.

Objectives: This study aims to examine racial and ethnic differences in biologic prescriptions among U.S. adults with CRSwNP. Study Design: Retrospective cohort. Methods: The TriNetX U.S. Collaborative Network was queried for adult patients diagnosed with chronic sinusitis and nasal polyps. Patients with CRSwNP were grouped into four cohorts based on race and ethnicity: non-Hispanic White (NHW), non-Hispanic Black (NHB), non-Hispanic Asian (NHA) and Hispanic (regardless of racial identification). Propensity score matching (PSM) was performed based on demographics (age, sex) and comorbidities known to influence biologic prescriptions (asthma, allergic and vasomotor rhinitis, atopic dermatitis, idiopathic urticaria, other urticaria, urticaria unspecified). Matched cohorts were followed for five years from the index event. Results: After PSM, there were 8,950 patients in each of the NHB and NHW CRSwNP cohorts. A higher proportion of NHB patients were started on any FDA approved biologic for CRSwNP compared to NHW patients (risk difference [RD] 1.2%, p=0.0008), as well as individual biologics: omalizumab (RD 0.4%, p=0.011), dupilumab (RD 0.9%, p=0.0028), mepolizumab (RD 0.3%, p=0.0317). In the Hispanic and NHW cohorts (7,588 patients after PSM), a lower proportion of Hispanic patients were prescribed any biologic (RD -1.2%, p=0.0003) or dupilumab (RD -1.1%, p=0.0003). There was no significant difference in biologic prescriptions between the NHA and NHW cohorts. Conclusions: Retrospective analysis of claims based data for CRSwNP management found that NHB patients were more likely, and Hispanic patients were less likely, to be prescribed biologics compared to NHW patients.

5. Stereotactic 3D Navigation in Transsphenoidal Endoscopic Pituitary Surgery: A Comparative Analysis of Postoperative Complications

Ibrahim M. Ibrahim, BS, Washington, DC; Mihai A. Bentan, BA, Richmond, VA; Paul F. Nemer, BS, Houston, TX; Bassam A. Ballout, BS, Fort Worth, TX

Educational Objective: At the conclusion of this presentation, the participants should be able to understand the use of stereotactic 3D navigation in endoscopic pituitary surgery, compare incidence of rhinologic and skull base relevant postoperative outcomes, and interpret the 3D navigation technology's utility and clinical significance.

Objectives: Endoscopic transsphenoidal approach to the resection of pituitary adenomas has become the new stan-

dard of care mainly due to its minimally invasive nature. The use of 3D navigation intraoperatively aims to improve surgical accuracy and further improve the approach's safety. The objectives of this study are to describe the utility of 3D neuronavigation in endoscopic transsphenoidal pituitary surgery, compare incidence of postoperative outcomes, and evaluating the impact the technology has on postoperative outcomes. Study Design: This was a retrospective cohort study comparing postoperative complications in patients undergoing transsphenoidal endoscopic pituitary adenoma resection with and without the use of stereotactic 3D navigation. The primary outcomes studied were anosmia, acute sinusitis, cerebrospinal fluid (CSF) leak, diabetes insipidus, syndrome of inappropriate antidiuretic hormone (SIADH), bacterial meningitis and hypopituitarism. Methods: Patient data was extracted from the TriNetX database which provided real time access to deidentified electronic health records (EHRs) from U.S. healthcare organizations. Procedures and diagnoses were identified using relevant CPT and ICD-10 codes. The study included patients aged 18 years and older who underwent transsphenoidal endoscopic pituitary adenoma resection. Propensity score matching was performed to balance the cohorts for age, sex, race, and ethnicity to minimize selection bias. After matching, outcomes were analyzed using risk ratios (RR) with 95% confidence intervals (CI) to compare complication rates. Results: A total of 3000 patients from each group were analyzed. The risk of anosmia was significantly lower in the 3D group (RR=0.655, 95% CI, 0.463-0.926, p=0.0159) while there was no difference in incidence of acute sinusitis (RR=0.879, 95% CI, 0.748-1.033, p=0.1179). The risk of CSF leak was comparable (RR=1.05, 95% CI, 0.841-1.314, p=0.410). RR for DI was 0.885 (95% CI, 0.749-1.046, p=0.153). The risk of SIADH was 0.806 (95% CI, 0.613-1.062, p=0.1243). Bacterial meningitis risk was similar between the groups, RR=1.137 (95% CI, 0.642-2.012, p=0.6599). Hypopituitarism was shown to have a significantly higher incidence in the group that underwent surgery using the 3D technology (RR=1.231, 95% CI, 1.105-1.372, p=0.0002). Conclusions: Our study reinforces the benefit of the use of 3D neuronavigation in endoscopic transsphenoidal pituitary adenoma resection. Reduction in anosmia risk highlights the improvement in surgical accuracy intraoperatively around the complex anatomy of the skull base. Increased hypopituitarism risk may be due to the higher chance of utilizing the technology in more complex cases where adenoma anatomy is more complex and larger resections are inevitable. Implementation of 3D neuronavigation in such complex surgeries as standard of care may prove to reduce overall postoperative outcomes.

6. Characterizing Patient Descriptors of Nasal Drainage in Chronic Rhinosinusitis

Ethan M. Kallenberger, MD, Charleston, SC; Pranav A. Patel, BS, Charleston, SC; Shaun A. Nguyen, MD, Charleston, SC; Jess C. Mace, MPH, Portland, OR; Zachary M. Soler, MD, Charleston, SC; Rodney J. Schlosser, MD, Charleston, SC

Educational Objective: At the conclusion of this presentation, the participants should be able to compare the effects that various patient specific factors have on nasal drainage symptoms in CRS.

Objectives: Nasal drainage is a cardinal symptom of CRS, but patients describe this symptom in variable ways including rhinorrhea, postnasal drip (PND) and thick nasal drainage. The objective of this study was to understand how patients describe this symptom and factors that impact symptom severity. Study Design: Retrospective analysis of a prospective, multicenter observational cohort study of adults with medically refractory CRS. Methods: Patients with refractory CRS were prospectively enrolled into an observational cohort study. Medical history and the SinoNasal Outcomes Test (SNOT-22) questions regarding nasal drainage were recorded as baseline measurements at the time of enrollment. Bivariate and multivariate analysis of covariates and odds ratios were performed. Results: A total of 1,020 patients were included in the analysis. Patients in this cohort were 48.4% male, and 85.0% white; 56.5% suffered from CRS without nasal polyps (CRSsNP), and 52.8% had previously undergone endoscopic sinus surgery (ESS). PND was the most severe symptom reported, with an average score of 2.98 (1.5) and 67.3% of patients reporting severe symptoms (scores greater than or equal to 3). Female sex (OR 2.0, [95% CI: 1.5-2.5]), CRSsNP (OR 1.5, [95% CI: 1.1-2.0]), prior ESS (OR 1.5, [95% CI: 1.1-2.0]), and allergies (OR 1.4, [95% CI: 1.1-1.8]) were all associated with severe PND. Interestingly, reflux was not associated with more severe PND (OR 1.1, [95% CI: 0.8-1.6]). Conclusions: In patients with refractory CRS, PND is the most bothersome nasal drainage symptom. Female sex, CRSsNP, prior ESS, and comorbid allergies are associated with a higher odds of severe PND.

7. Impact of FESS on New Onset Cardiovascular Disease in an OSA Population: A Retrospective Cohort Study

Amala Nayak, BS, Richmond, VA; Iman Adibi, BS, Richmond, VA; Arman Saeedi, MPH, Richmond, VA; Mihai Bentan, BA, Richmond, VA; Theodore Schuman, MD, Richmond, VA; Ryan Nord, MD, Richmond, VA

Educational Objective: At the conclusion of this presentation, the participants should be able to elucidate the impact

of functional endoscopic sinus surgery (FESS) on cardiovascular outcomes in patients with obstructive sleep apnea (OSA) and comorbid chronic rhinosinusitis (CRS).

Objectives: This study examines the effects of FESS on one year cardiovascular disease (CVD) incidence in patients with both OSA and CRS. Study Design: A retrospective chart review was conducted on patients diagnosed with OSA and CRS. Methods: Development of new onset CVD for a one year period was compared between patients who underwent FESS and those who did not (control). Cardiovascular disease was defined as atrial fibrillation, myocardial infarction, hypertension, pulmonary hypertension, stroke, and congestive heart failure. In the FESS cohort, new onset CVD was recorded up to one year post-FESS. In the control cohort, new onset CVD was recorded up to one year after fulfilling both diagnoses of OSA and CRS. Incidence of new onset CVD was compared using Fisher's exact tests. Results: Of 166 patients with OSA and concomitant CRS included, 72 underwent FESS and 94 did not. Both groups were similar in age (52.1 +/- 15.8 (FESS cohort) versus 54.1 +/- 16.6 years old (control cohort); p=0.427) and BMI (34.8 +/- 8.4 (FESS cohort) versus 35.5 +/- 8.7(control cohort); p=0.563). The FESS cohort and control cohort had 36.1% and 30.9% male patients (p=0.509), respectively. The FESS group experienced new onset cardiovascular disease significantly less than the control group (1.38% versus 9.57%, p=0.044). Conclusions: In OSA patients with comorbid CRS, FESS was associated with fewer new onset cardiovascular diseases after one year, warranting further investigation into the cardiovascular benefits of FESS in this population.

8. Over the Counter Medications for Non-Rhinogenic Facial Pain

Nathan Gabriel Sattah, BA, Durham, NC; Hui-Jie Lee, PhD, Durham, NC; Theresa Coles, PhD, Durham, NC; Frederick Godley III, MD, Providence, RI; David Jang, MD, Durham, NC

Educational Objective: At the conclusion of this presentation, the participants should be able to describe the over the counter (OTC) medications used by patients with non-rhinogenic headache.

Objectives: Midfacial pain or pressure is a common complaint in otolaryngology clinics. This study investigated the use of OTC medications in patients with midfacial pain or pressure, particularly those with non-rhinogenic etiology. Study Design: Prospective study of patients presenting to an academic rhinology clinic. Methods: Patients with a complaint of midfacial pain or pressure were surveyed on how common OTC medications relieved their symptoms, with choices ranging from "always" to "never", or "I have not tried these". Patients were categorized into chronic rhinosinusitis (CRS) or non-rhinogenic facial pain/pressure (NRFP) groups based on endoscopy and imaging. Results: The study included 251 patients, with 69% female and a mean age of 50 years. Patients with CRS (n=114) reported symptom relief "sometimes" to "always" when using pain relievers (38.6%), intranasal steroids (37.7%), and oral antihistamines (36%). Patients with NRFP (n=137) reported "sometimes" to "always" with the use of intranasal steroids (49.6%), decongestants (48.9%), and pain relievers (45.3%). A greater proportion of NRFP patients responded "sometimes" to "always" for decongestants to relieve symptoms compared to CRS patients ($p<0.05$). There was no significant difference in other OTC medication use between groups. Conclusions: Patients used a variety of OTC medications for symptomatic relief of facial pain/pressure. Decongestants were reported more effective in patients with NRFP, suggesting that their vasoconstrictive properties may counteract the migraine related etiology of NRFP. Symptom relief with decongestant use may aid in differentiating CRS from NRFP.

9. Trends and Innovation in Rhinology: A Bibliometric Analysis of Patent Activity

Shiven Sharma, JD, New York, NY; Omar Alani, ScB, New York, NY; Keshav Sharma, HBHsc, Detroit, MI; Dany Alkurdi, AB, New York, NY; Olivia First, BA, New York, NY; Alfred Marc Iloreta, MD, New York, NY

Educational Objective: At the conclusion of this presentation, participants should be able to understand key trends and innovations in rhinology related patents over the past two decades. They should also be able to pinpoint significant technological advancements in rhinology, such as balloon and catheter based treatments, nonsurgical diagnostic devices, and sinonasal ablation techniques. Additionally, participants will be able to analyze the impact of the most cited patents on the development of rhinology technologies and recognize the value of patent analysis as a tool for understanding the evolution and potential future directions of innovation in the field.

Objectives: This study aims to review and analyze the most cited patents in the field of rhinology, identifying technological trends and patterns of development. Study Design: This study performs a bibliometric analysis of rhinology related patents on the Lens free, open source online platform. Generally, this is a retrospective observational analysis. Methods: Patents were gathered from the Lens database by identifying titles, abstracts, and claims that

contain the term “rhinology” and were classified under the Cooperative Patent Classification (CPC) code A61. After manual curation corrected for duplicate and extraneous patents, the remaining patents were ranked by the number of forward citations. The top 100 patents were identified and assigned to five subcategories: “Balloon and Catheter Based Treatment”, “Drug Delivery Systems and Therapeutics”, “Non-Surgical Diagnostic Devices”, “Sinonasal Ablation Techniques”, and “Surgical Instruments and Methods”. Results: With the initial search criteria, 1,440 patents were identified and 521 patents were retained after the manual screening process. Analysis of the top 100 patents revealed that the majority of patents had priority years between 2000-2010. 64% of these patents are active. Non-surgical diagnostic devices was the largest subcategory, followed by balloon and catheter based treatment, and then sinonasal ablation techniques. Balloon and catheter based treatments and sinonasal ablation techniques comprised the majority of the first quintile of patents by citation number. Linear regression showed a weak correlation between priority year and patent rank by citation (Pearson’s R = 0.34, R-squared= 0.12). Conclusions: This analysis highlights the ongoing evolution in rhinology technology, particularly in nonsurgical diagnostic devices, balloon and catheter based treatments, and sinonasal ablation techniques. This study provides an overview of these innovations and serves as a resource for informing future research and development efforts within this field.

10. Beyond the Surface: A Case of Nasal Ulceration with Skin Involvement and Septal Perforation

Si Hao Tang, BA, Philadelphia, PA; Victoria Epstein, MD, San Francisco, CA; Daniel Kuo, MD, Redwood City, CA; Morgan Blakely, MD, Redwood City, CA; Rijul S. Kshirsagar, MD, Redwood City, CA

Educational Objective: At the conclusion of this presentation, participants should be able to identify the clinical and pathological presentation of eosinophilic granulomatosis with polyangiitis (EGPA).

Objectives: To report an atypical case of EGPA, describe its clinical presentation, identify pathological correlations, and highlight the importance of ruling out extranodal nasal NK/T-cell lymphoma (ENKTL) in this unique case. Study Design: Case report. Methods: Examination of medical records was performed in October 2024. Results: A previously healthy 40 year old male presented with a 2 month history of a pruritic, non-tender ulceration at the nasal sills bilaterally. A non-contrast sinus computed tomography showed nasal septal perforation. ESR was within normal limits and autoimmune serologies (ANA, MPO, PR3, ACE) were negative. Initial outpatient biopsies were non-diagnostic. Operative diagnostic sinus endoscopy and pathological biopsies were performed showing evidence of necrosis, vasculitis and eosinophilic inflammation. And an indirect immunofluorescent antibody test was positive for p-ANCA. All evidence eventually pointed toward EGPA and negative stains for Epstein-Barr virus ruled out ENKTL -- an aggressive lymphoma with a poor prognosis that also classically presents with necrosis and destruction of the nasal septum. Conclusions: The absence of asthma, rhinosinusitis, and an initial unremarkable autoimmune serology and ESR are not enough to rule out EGPA. Dermatological manifestations of EGPA are also variable with our case being the first description of one that presents similarly to ENKTL.

FACIAL PLASTIC AND RECONSTRUCTIVE

11. Comparison of Artificial Intelligence Large Language Models and Human Experts in Describing an Objectively Attractive Face

Khodayar Goshtasbi, MD, Orange, CA; Brian J.F. Wong, MD PhD, Irvine, CA

Educational Objective: At the conclusion of this presentation, the participants should be able to recognize the capabilities of artificial intelligence large language models in describing attractive faces, as compared with expert humans.

Objectives: Generative large language models (LLM) have immense applications in the field of facial plastic surgery. The objective of this study is to evaluate whether LLMs can objectively describe an attractive face as well as human experts. Study Design: Cross-sectional study. Methods: A cohort of otolaryngology residents and facial plastic surgery fellows were asked to describe an attractive female face in approximately 200 words in great details but in lay terms and without using medical jargon. The same question was asked from the 4 leading LLMs: ChatGPT, Claude, Google Gemini, and Meta AI. Then the answers were randomized and blinded, and using new LLM accounts so previous chat histories could not be recognized, the LLMs were asked to rank the responses from best (#1) to worst (#14). Results: Six junior otolaryngology residents, four senior otolaryngology residents and facial plastic fellows, and four LLM responses were collected. When presenting the blinded and randomized answers to new LLM accounts for ranking, only Claude AI refused to rank answers but ChatGPT, Google Gemini, and Meta AI provided numeric ranking. Average rankings of junior resident responses were 9.3 +/- 2.6, senior residents or fellow responses 9.1 +/- 4.7, and LLM responses 3.3 +/- 0.5, which was statistically different (p=0.02). Conclusions: Artificial intelligence LLMs are

capable of objectively describing attractive female faces better than human experts with background training in the field of facial plastic surgery. Future studies to compare LLMs and human experts using a human cohort of judges are warranted to validate the results.

12. Comparison of ChatGPT and Human Focus Group in Categorizing Facial Attractiveness

Khodayar Goshtasbi, MD, Orange, CA; Brian J.F. Wong, MD PhD, Orange, CA

Educational Objective: At the conclusion of this presentation, the participants should be able to learn about the current capabilities of large language models such as ChatGPT in categorizing facial attractiveness.

Objectives: The capabilities of large language models (LLM) such as ChatGPT (OpenAI) is rapidly increasing. ChatGPT can now analyze an uploaded image, however there are no studies that evaluate its capabilities in categorizing facial attractiveness. The objective of this study was to compare ChatGPT's ability to categorize facial attractiveness compared to a human focus group of facial analysis experts. Study Design: Cross-sectional study. Methods: Twenty photographs of fictitious and AI generated adult, white, and expressionless female images were created. The attractiveness was scored by 24 otolaryngology residents from a scale of 1-10 (1=least and 10=most attractive). Then, each image was compared to all other images one at a time (a total of 190 comparisons) by ChatGPT regarding which image it considers more attractive. Results: Average attractiveness score by the human focus group was 5.02 +/- 1.67 (range 2.58-7.70). On the one by one comparisons, ChatGPT correctly categorized the image with higher focus group attractive score 80.53% of the time (153 of the 190 comparisons). When looking at the subcategory of comparisons where the two images have at least a 1 point difference in focus group rating, ChatGPT correctly categorized the image with higher focus group attractive score 88.15% of the time (119 of the 135 comparisons). Conclusions: In a study of photographs of AI generated female faces, ChatGPT was able to categorize the more attractive images in close comparison to a human focus group of facial aesthetic experts.

13. Facial Palsy Measurement Using an Augmented Reality Face Mesh App

Katherine Guo, BS, Sacramento, CA; Jon-Paul Pepper, MD, Stanford, CA

Educational Objective: At the conclusion of this presentation, the participants should be able to use the FaceADE augmented reality iOS application to measure their patients' facial asymmetry.

Objectives: To develop and evaluate our newly created iOS application, FaceADE, which leverages Apple's TrueDepth camera technology to provide real time, accurate measurement of facial palsy, aiming to provide a reliable and comparable metric across multiple clinic visits and empower patients to track their recovery progress at home with their own devices. There are no other immediately available iOS applications that are free to use with publicly available code. Study Design: This study involved the creation of an iOS application in Swift, followed by a pilot trial in a clinical setting with a patient experiencing partial facial palsy and a measurement validation test with a healthy subject. Methods: FaceADE captures and processes the user's face mesh topology using the ARKit API, identifying key facial landmarks to measure specific facial movements. The point distances for features of interest are determined by the TrueDepth camera, which projects over 30,000 infrared dots onto the user's face to create a 3D mesh. This mesh, containing 1,220 coordinates, allows for accurate tracking of facial movements in real time and is agnostic to lighting conditions, angles, and skin tones. The application displays real time measurements in centimeters and logs the maximum and minimum values attained for measures such as eye closure and smile width and height. It includes a screen recording feature to document the real time measurements of facial exercises. The pilot trial assessed the application's ability to measure smile width and eye closure in a clinical setting. Results: The application successfully quantified asymmetry in smile width and oral commissure elevation during the trial, demonstrating its potential for monitoring facial palsy progression and recovery. In the validation test, the app's distance measurements closely matched post-processing validation using pixel scaling, with minimal discrepancies likely due to head angle, making the 2D frame pixel measurement less reliable. For example, the subject's eye opening measurements were identical between the app and the pixel scaling method, while lip corner elevation (from the chin) measured 6.3-6.4 cm in the app and 6.6 cm bilaterally via pixel scaling. These differences are within acceptable margins, as the TrueDepth camera has an independently evaluated error rate of less than 5% of the target distance, with errors in the millimeter range. The measurements provided by FaceADE can be used to track patient improvements over time without any extra equipment. Conclusions: FaceADE is a user friendly application that utilizes advanced facial detection technology to measure facial palsy in real time. It will be made available on the Apple app store and its source code on GitHub, a cloud based code sharing and collaboration platform, to maximize accessibility and encourage further development. Using the 3D facial mesh, new measurements of interest can easily be added and customized. Continued updates

and thorough assessment with a larger patient cohort are needed to enhance its clinical applicability.

14. Computational Analysis Investigating Intranasal Drug Delivery following Functional Septorhinoplasty

Yang U. Lee, BA, Chapel Hill, NC; Dennis O. Frank-Ito, PhD, Durham, NC; Jonas R. Miller, MD, Chapel Hill, NC; Sarah M. Russel, MD MPH, Chapel Hill, NC; Joseph Madison Clark, MD, Chapel Hill, NC

Educational Objective: At the conclusion of this presentation, the participants should be able to understand how functional septorhinoplasty impacts intranasal drug penetration in the airway during nebulization.

Objectives: Effectiveness of topical intranasal medications, often prescribed to address various sinonasal diseases, is limited by their ability to penetrate posteriorly to their target site. This study investigates the effect of functional septorhinoplasty addressing nasal valve collapse on nebulized drug delivery to the posterior nasal airway. Study Design: Computational study using parametric modeling to investigate intranasal drug transport. Methods: Three fresh cadaveric heads underwent septoplasty, dorsal preservation rhinoplasty (DPR), and butterfly graft (BFG) placement. Radiographic images obtained preoperatively and after each intervention were used for three dimensional nasal airway reconstructions. Drug delivery simulations were performed under these conditions: particle size (1-30 μm), particle velocity of 1 m/s. Particle sizes were divided into three groups: small (1-10 μm), medium (11-20 μm), large (21-30 μm). Drug particle deposition to the posterior airway defined from the most anterior inferior turbinate region was calculated from simulation results. Results: Preoperatively, average posterior deposition was: small=2.4%, medium=4.0%, large=0.6%. Average posterior deposition after each intervention was: Septoplasty - small=3.2%, medium=9.0%, large=2.7%; DPR alone - small=1.4%, medium=7.3%, large=5.2%; DPR+BFG - small=0.9%, medium=5.9%, large=10.0%. Conclusions: Nebulized drug delivery to the posterior nasal cavity improved across all three particle size groups after septoplasty, while DPR alone and DPR+BFG resulted in improved posterior deposition for medium and large particle size groups. In summary, our preliminary findings indicate that functional septorhinoplasty significantly improves drug delivery to the posterior nasal cavity for particle sizes ranging from 11 μm to 30 μm.

15. Can ChatGPT Analyze Common Facial Plastic Procedures Better than Us?

Ziyang Li, MS, Lubbock, TX; Reesha Yadav, BS, Omaha, NE; Rahul Varman, MD, Omaha, NE

Educational Objective: At the conclusion of this presentation, participants should be able to describe/understand the usefulness and limitations of ChatGPT in examining preoperative and postoperative facial plastic procedures.

Objectives: Compare the accuracy between ChatGPT and human participants in analyzing common facial plastic procedures. Study Design: Retrospective cohort study. Methods: A total of 100 preoperative and postoperative images were manually selected using online search engines. ChatGPT sessions were opened to investigate questions such as differentiating preoperative and postoperative images, location of the procedure, and providing detailed analysis including symmetry, scarring, and overall recovery. The same questions were asked to 20 nonmedical participants and 20 medical participants. The results of ChatGPT and human participants were compared. Results: Pending. Preliminary data indicated significant accuracy improvement in ChatGPT over nonmedical participants. There was less difference in outcomes between ChatGPT and medical participants. Conclusions: Advanced artificial intelligence software has become increasingly useful and implemented in medical practice. In this study, we investigated the difference in the analysis of common facial plastic procedures. Incorporating ChatGPT analysis in the preoperative counseling could provide a more well rounded visit.

GENERAL

16. Evaluating the Content and Quality of Resident Feedback in Otolaryngology: Are We Missing Core Competencies?

Syed Ameen Ahmad, BS, Baltimore, MD; Maria Armache, MD, Baltimore, MD; Danielle Trakimas, MD, Baltimore, MD; Jenny X. Chen, MD, Baltimore, MD; Deepa Galaiya, MD, Baltimore, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to understand how different modes and formats of feedback may yield different insights into a resident's learning.

Objectives: To improve our understanding of the instruments used to give surgical residents feedback, we trained ChatGPT to evaluate the quality of feedback for otolaryngology residents provided through three different formats:

1) a smartphone application collecting single instance operating room assessments (SIMPL); 2) objective structured assessment of technical skills (OSAT); and 3) end of rotation (EOR) surveys. Study Design: Retrospective analysis of feedback for residents at a single residency program from 2017 to 2021. Methods: 60 feedback entries (20 of each format) were randomly selected and graded by two blinded faculty members as to whether it was encouraging, corrective, or specific. They also noted whether feedback addressed the six core competencies of the Accreditation Council for Graduate Medical Education. ChatGPT was trained to evaluate the feedback in a similar fashion. Results: Attending evaluations showed a high level of agreement (concordance rate: 87%; Cohen's kappa=0.933). ChatGPT also produced a high level of concordance in evaluations compared to attending evaluations (concordance rate: 92%; Cohen's kappa=0.96). The percentage of feedback that addressed specific milestones for SIMPL, OSAT, and EOR (respectively) were: patient care: 100% vs. 95% vs. 75% (p=0.020), medical knowledge: 20% vs. 5% vs. 30% (p=0.121), systems based practice: 0% vs. 5% vs. 10% (p=0.349), practice based learning: 5% vs. 10% vs. 35% (p=0.024), professionalism: 5% vs. 5% vs. 20% (p=0.189), and communication: 10% vs. 5% vs. 25% (p=0.153). Feedback was encouraging in 100% of SIMPL and OSAT cases and 85% of EOR surveys (p=0.043). Feedback was corrective in 65% vs. 45% vs. 50% of cases (p=0.4), and specific in 85% vs. 60% vs. 40% of cases (p=0.014). Conclusions: Different instruments provide feedback of differing quality and content for learners and assessors. Artificial intelligence tools could help evaluate the quality of feedback at scale.

17. Evaluating Diversity Gaps in Otolaryngology: A Comprehensive Survey of ENT Faculty

Gabrianna A. Andrews, BS, Stratford, NJ; Ayman Khatib, BS, Stratford, NJ; Anusha Bharadia, BS, Stratford, NJ; Julia Rangel, BS, Stratford, NJ; Oliver Yousef, MD, Nutley, NJ

Educational Objective: At the end of this presentation, individuals should be able to understand the racial and ethnic composition of otolaryngology faculty in U.S. residency programs, recognize disparities in representation compared to the U.S. population, and identify strategies for enhancing diversity, equity, and inclusion (DEI) within the field.

Objectives: This study seeks to survey and compare the race/ethnicity of current otolaryngology faculty at United States residency programs and discuss its impact on encouraging diversity in residency programs. Study Design: This cross-sectional study examines the racial and ethnic composition of faculty associated with U.S. otolaryngology residency programs. Methods: Demographic information was collected from the AAMC faculty reports and the websites of individual ENT residency programs participating in the 2024 ERAS application cycle. Faculty were categorized into racial/ethnic groups based on visible characteristics, name origin, and languages spoken. A third reviewer resolved discrepancies in categorization. A descriptive analysis compared faculty representation with U.S. Census and AAMC workforce data. Results: Z-tests and the representation index (RI; calculated as the ratio of faculty percentage from each ethnic/racial group to the corresponding percentage in the U.S. Census data) both demonstrated a significant overrepresentation of Asian and non-Hispanic White faculty in the AAMC faculty roster and our website survey, compared to their proportion in the 2023 U.S. Census data (P less than 0.0001, RI greater than 3 for Asians; P less than 0.0001, RI greater than 1 for non-Hispanic Whites). Conversely, Black or African American and Hispanic faculty were significantly underrepresented in both the AAMC faculty roster (2020-2023) and our website survey when compared to the corresponding population segments in the 2023 U.S. Census (P less than 0.0001, RI less than 1 for both groups). Conclusions: Black or African American and Hispanic faculty are significantly underrepresented in ENT, while Asian and White populations are overrepresented, compared to relative population data from the 2023 U.S. Census. These disparities may help explain why ENT physicians' diversity rate has not kept pace with the increasing diversity of the U.S. population. Efforts to increase faculty diversity should be prioritized as a targeted approach to enhance DEI in ENT and provide patients with the representation that has been shown to improve patient outcomes.

18. An Otolaryngology Elective Course Initiative for Preclinical Medical Students

Adriana I. Baez Berrios, BS, New York, NY; Sandra Jardines, BS, New York, NY; Aldo Londino, MD, New York, NY

Educational Objective: At the conclusion of this presentation, the participants should be able to recognize the value of integrating a virtual elective course into preclinical medical education to enhance otolaryngology exposure and apply this model for potential incorporation into other medical school curricula.

Objectives: To provide preclinical medical students with early exposure to otolaryngology and assess engagement with otolaryngology before and after an elective course. Study Design: Pre-post intervention study. Methods: Seven virtual lectures, tailored for preclinical medical students, were delivered by otolaryngologists. Each lecture focused

on a topic relevant to an otolaryngology subspecialty, with one session dedicated to challenging cases. Pre- and post-course surveys, administered anonymously, assessed students' engagement with otolaryngology using a five point Likert scale. Demographic data were collected only in the pre-course survey, while course feedback was gathered in the post-course survey. A Wilcoxon signed ranked test analyzed significant mean changes in pre- and post-course responses. Results: 10 (83%) out of 12 registered students completed both surveys. 90% of respondents were first year medical students and 60% identified as women. 100% of participants reported that this elective was their first structured course offering exposure to otolaryngology. A significant increase was noted in understanding the role of otolaryngologists ($p < 0.01$), knowledge of when to consult an otolaryngologist ($p < 0.01$), familiarity with otolaryngology compared to other specialties ($p < 0.05$), understanding of its training pathway ($p < 0.01$), and recognition of its subspecialties ($p < 0.01$). Conclusions: A preclinical elective in otolaryngology provides early exposure, deepening students' understanding of the specialty, its pathologies, and procedures, and preparing them for a potential career in this competitive field.

19. Resident Research Activity in Otolaryngology

Shreeya Bahethi, BS, Nutley, NJ; Ellen M. Hong, BA, Nutley, NJ; Bethany Ho, BA, Nutley, NJ; Kevin Li, BA, Nutley, NJ; Justina Varghese, BA, Nutley, NJ; Brian E. Benson, MD, Nutley, NJ

Educational Objective: At the conclusion of this presentation, the participants should be able to identify factors that contribute to residency research productivity and consider their role in predicting resident performance.

Objectives: Research productivity during medical school is highly influential in applications to otolaryngology residency programs. Our prior study found factors that statistically significantly impact research productivity in medical school. In this current study, we aim to examine what factors can predict productivity in residency. Study Design: Retrospective review. Methods: Medical students from our previous study who matched into otolaryngology and published at least one first author article with a senior author affiliated with an otolaryngology residency program between 1/1/2016 and 2/28/2021 were studied. These students were searched on PubMed to identify the number of their first author publications completed during medical school versus residency. Students who did not graduate residency by 2024 were excluded. Results: Analysis included 287 individuals. The mean number of first author publications in medical school was 2.62 (SD 2.54) and the mean number of first author publications in residency was 3.93 (SD 4.34). There was a significant correlation between medical student and resident first author publications (R squared equals 0.12, p equals 0.048). This was analyzed further with multiple linear regressions, and results showed a statistically significant relationship (t equals 6.64, p less than 0.001). Conclusions: While program directors cite research as a major factor when reviewing residency applications, this is the first study to demonstrate that research productivity in medical school does, in fact, significantly correlate with increased research productivity during residency. These findings allow institutions to reflect on the significance and impact of medical student engagement and provide data to students for career planning.

20. Predictors of Patient Satisfaction after Hypoglossal Nerve Stimulation in the ADHERE Registry

Emily R. Baker, BS, Memphis, TN; Harrison P. Smith, BA, Memphis, TN (Presenter); Marion B. Gillespie, MD, Memphis, TN

Educational Objective: At the conclusion of this presentation, the participants should be able to describe potential ways to identify patients who might require more counseling prior to undergoing hypoglossal nerve stimulation implantation.

Objectives: Hypoglossal nerve stimulation (HNS) is an established yet relatively new therapy for obstructive sleep apnea (OSA). The aim of this study was to examine factors associated with higher patient satisfaction after HNS. Study Design: Prospective observational study. Methods: Outcomes gathered from the ADHERE registry included baseline and post-treatment apnea hypopnea index (AHI) and Epworth Sleepiness Scale (ESS) as well as demographic and comorbidity information. Group outcomes were examined according to the responses on the ADHERE patient satisfaction survey administered 12 months after implantation. Results: 5,000 patients were enrolled in the ADHERE registry; so far, 1,572 completed at least one question on the patient satisfaction survey. Patients who reported that they preferred HNS to CPAP had a significantly lower average baseline AHI than those who preferred CPAP (34.26 +/- 14.2 vs 37.84 +/- 15.55, p=0.030). Non-white patients were significantly less likely to report that they would recommend HNS to others (82.0% vs 90.1%, p=0.026). When compared to patients without a history of depression, patients with depression were less likely to report satisfaction with HNS (83.7% vs 88.7%, p=0.015) or endorse that they would

choose UAS again (86.7% vs 91.3%, p=0.011). Nightly HNS usage was significantly higher in patients who reported satisfaction with HNS (p=0.0004), those who preferred HNS to CPAP (p=0.0014), those who would recommend HNS to others (0.022), and those who would choose HNS again (p<0.001). Conclusions: Data from the ADHERE showed that higher baseline AHI, non-white race, and history of depression were less likely to respond positively to questions pertaining to patient satisfaction with HNS. These groups may require additional counseling prior to implantation in order to better match patient expectations to expected outcomes.

21. Industry Perspectives on Instrument Design for the Female Otolaryngologist

Adrienne Eve Biskaduros, BS, New York, NY; Linh He, BS, New York, NY; Katherine Tai, MD, New York, NY; Boyce Pressly, New York, NY; Anais Rameau, MDCM MSc MPhil MS FACS, New York, NY

Educational Objective: The goal of this study is to understand how medical device and instrumentation companies incorporate surgeon size and gender considerations into instrument design, in order to improve communication between surgeons and companies to optimize instrument design.

Objectives: This qualitative study examines surgical instrument development, focusing on human factor engineering. We aimed to understand how research and development (R&D) teams in surgical tool manufacturing consider the needs of surgeons of different sizes, genders, and strengths, and identify areas to improve ergonomics for female otolaryngologists. Study Design: Interview questions targeted the role of human factor engineering and how hand sizes, strengths, and user demographics inform instrument design. Convenience sampling was used to identify participants from major instrument design companies. Methods: We conducted structured interviews over Zoom to examine current R&D processes involved in the design of surgical instruments. Interviews were independently analyzed by thematic content analysis by two researchers. Differing opinions were reconciled via discussion. Results: Our interviews with n=4 representatives, from n=3 surgical instrument manufacturers, revealed varying procedures in human factor engineering incorporation across the industry. Factors affecting design process were categorized into four themes: 1) safety and risk; 2) regulatory guidelines; 3) diversity in user testing and ergonomic data; and 4) cost and resources. Preliminary results suggested that while early design phases aim to accommodate diverse users, later phases may limit ergonomic inclusivity due to a shifted focus on compliance and safety standards rather than user characteristics. Interviewees notably alluded to a male skew to hand size and grip strength within instrument design. Conclusions: A need for better incorporation of diverse genders and sizes in design was apparent. Ongoing interviews will explore additional themes related to these challenges and areas of improvement. This research aimed to highlight opportunities to improve ergonomics in instrument development for female surgeons.

22. Geographic Disparities in Naso Orbital Ethmoid Fractures: Injury Patterns, Care Delivery, and Clinical Outcomes

Clayton Bobo, BS, Lexington, KY; Evan Smith, BS MS, Lexington, KY; Logan Elliott, BS, Bowling Green, KY; Kelsey Karnik, PhD, Lexington, KY; Preston Leader, MD, Lexington, KY; Matthew Bush, MD PhD MBA FACS, Lexington, KY

Educational Objective: At the conclusion of this presentation, the participants should be able to understand the differences in mechanisms of injury, timing of care, and postoperative care metrics between rural and urban NOE fracture patients.

Objectives: Naso orbital ethmoid (NOE) fractures can lead to significant complications, such as vision problems, cosmetic deformities, and anosmia, and timely identification and carefully coordinated care is necessary to prevent these complications. Patients from rural locations face challenges accessing and utilizing care; however, the impact of residence location has not been studied in NOE patients. The objective of this study is to compare and contrast the clinical presentation, care delivery, and clinical outcomes in patients with NOE fractures based on geographic residence. Study Design: Retrospective single institution review. Methods: Patients were identified who had NOE fractures surgically repaired between 2010-2022 at a level 1 trauma center. Dependent variables for statistical analysis included injury specific mechanism of injury (MOI), time to repair, and receipt of postoperative imaging. Independent variables included medical factors (multisystem trauma, ICU stay) and sociodemographic data (including rural versus urban residence). Results: A total of 139 patients were included in the analysis. The mechanism of injury was most commonly vehicular in both rural and urban patients. The median time to NOE repair in urban patients was four days (range 0-144 days), while rural patients was five days (range of 0-678 days). No significant associations between geographic residence and NOE fracture severity were found. Only 66.34% of rural patients underwent postoperative

imaging compared with 82.14% of urban patients (p=0.022). Conclusions: Patients who sustain complex trauma from rural areas may face delays in surgical care and postoperative management. Vulnerable populations, such as rural residents, deserve further investigation on factors that influence care delivery and methods to improve.

23. Comparing Surgical Outcomes between Laser Tonsillotomy and Cautery Tonsillectomy in Adult Patients: A Case Control Design

Josiah Brandt, MD, Cincinnati, OH; Adam Beucler, BS, Cincinnati, OH (Presenter); Peter Larson, MD, Cincinnati, OH; Siddhant Tripathi, MD, Cincinnati, OH; Dustin Silverman, MD, Cincinnati, OH; Rebecca Howell, MD, Cincinnati, OH

Educational Objective: At the conclusion of this presentation, the participants should be able to compare postoperative pain, as well as bleeding risk and recurrence rates, for adult tonsillectomies with carbon dioxide laser versus standard electrocautery.

Objectives: To compare surgical outcomes between patients undergoing carbon dioxide laser tonsillotomy and standard electrocautery tonsillectomy in adult patients at a single tertiary care center. Study Design: This case control study was performed using retrospective medical chart review for age and sex matched adult patients undergoing tonsillotomy or tonsillectomy. The primary outcome measures were postoperative patient telephone calls and morphine milliequivalents (MME) prescribed, as a proxy for postoperative pain control. Secondary outcome measures included postoperative bleed and recurrence rates. Methods: Patients were selected using surgical billing data (CPT code 42826) from January 2015 to June 2024. The number of postoperative telephone calls, MME prescribed, number of postoperative bleeds, and number of recurrences was recorded. Other demographics collected included age, sex, indications, surgeon, and other postoperative medications. Statistical analysis was performed using paired sample Wilcoxon tests. Results: 49 adult patients who underwent laser tonsillotomy by a single surgeon were matched to 49 age sex matched adult patients who underwent standard electrocautery tonsillectomy at the same institution by 6 surgeons. The patients undergoing cautery tonsillectomy received significantly more MME (p=0.00684). Despite this, there were fewer telephone calls in the laser tonsillotomy group, although not reaching statistically significant differences (p=0.296). Pain calls were not affected by indication for surgery or postoperative steroid prescription. There were significantly fewer post-tonsillectomy bleeds in the laser tonsillotomy group (p=0.041). Recurrences were more frequent but were not significantly increased in the laser tonsillotomy group (p=0.072). Conclusions: These results suggest that in adult patients, the use of laser tonsillotomy shows improved postoperative pain control compared to standard tonsillectomy. In this study, patients undergoing laser tonsillotomy required lower MME and had a tendency towards decreased postoperative phone calls. Consistent with existing literature, this study demonstrates recurrence rates with laser tonsillotomy are higher, but bleeding rates were lower than cautery tonsillectomy.

24. Incidence of Traumatic Brain Injury in Patients with Facial Fractures: An Analysis Using the National Trauma Data Bank

Andrew Stefan, MD, Detroit, MI; Zachary Buxo, MD, Detroit, MI; John D. Cramer, MD, Detroit, MI

Educational Objective: At the conclusion of this presentation, the participants should be able to recognize the varying risks of traumatic brain injury (TBI) associated with different types of facial fractures.

Objectives: Facial fractures often vary in presentation and severity, necessitating prompt evaluation for traumatic brain injury (TBI) due to its critical impact on patient outcomes. This study investigates the association between specific types of isolated facial fractures and the development of TBI. Study Design: Retrospective cohort study. Methods: Data from the National Trauma Data Bank were analyzed to identify patients with fractures of the mandible, maxilla, nasal, orbit, skull base, and zygoma. Descriptive statistics were performed, and ordinal regression was used to explore the association between facial trauma and TBI severity. Results: Among 931,520 facial fractures identified, 72.3% occurred in males. The average age was 44.7 years, with mean Glasgow Coma Scale values of 12.5 and injury severity score values of 15.5. Orbit fractures were the most frequent (24.43%). Of all patients with a TBI, 69.9% were mild, 8.4% moderate, 17.9% severe, and 3.8% unknown. Ordinal regression revealed that increasing age was associated with a decreased risk of severe TBI (odds ratio (OR) 0.99, 95% confidence interval (CI) 0.99-0.99). Males had a higher likelihood of developing severe TBI compared to females (OR 1.22, 95% CI 1.20-1.24). Skull base fractures were associated with an increased risk of severe TBI compared to mandible fractures (OR 2.38, 95% CI 2.32-2.43). In contrast, nasal fractures did not significantly affect the risk of severe TBI (p=0.981). Conclusions: This study demonstrates that skull base fractures are linked to an elevated risk of severe TBI compared to mandible fractures. Age

and male gender also significantly influence the risk of severe TBI, while nasal fractures show no substantial impact. These findings underscore the importance of recognizing fracture specific risks in order to obtain timely diagnosis and management of TBI in facial trauma patients.

25. Impact of Anemia on Outcomes of Maxilla and Malar Fracture

Joseph Celidonio, BS, Newark, NJ; Lucy Revercomb, BS, Newark, NJ; Aman M. Patel, BS, Newark, NJ; Ghayoour S. Mir, DO, Newark, NJ; Andrey Filimonov, MD PharmD, Newark, NJ

Educational Objective: At the conclusion of this presentation, the participants should be able to better understand the impact of anemia on management and outcomes of adult inpatients with maxilla and malar fracture.

Objectives: Previous studies have associated anemia with an increased risk of fracture. Additionally, anemia can develop in the setting of facial fracture with blood loss. Our study aims to investigate the impact of anemia on outcomes of maxilla and malar fracture. Study Design: Retrospective database study. Methods: The 2010-2014 National Inpatient Sample was queried for adults with a primary diagnosis of facial fracture. Multivariable analyses were implemented to identify associations between anemia status and outcomes. Results: Of the 105,768 facial fracture patients, 19,411 patients had a maxilla and/or malar fracture. Among these patients, 10.6% had anemia and were more frequently older (mean age 50.51 vs 42.11 years), female (28.0% vs 18.2%), with open fractures (16.5% vs 7.6%), and had other comorbidities including coagulopathy (7.7% vs 1.3%) and hypertension (32.8% vs 18.9%) versus non-anemic patients (P less than 0.001). Anemic patients were associated with greater total charges ($172,823 vs $67,103) and incidence of tracheostomy (25.2% vs 3.9%) and reintubation (24.9% vs 4.2%) (P less than 0.001). After adjusting for patient demographics, admission status, fracture type, and comorbidities anemic patients were associated with greater length of stay (aOR 3.65, 95% CI 3.40-3.90), number of procedures (aOR 1.45, 95% CI 1.34-1.57), sepsis (aOR 2.72, 95% CI 1.88-2.93), acute pulmonary failure (aOR 1.28, 95% CI 1.04-1.56), hemorrhage (aOR 1.95, 95% CI 1.12-3.40), tracheostomy (aOR 1.78, 95% CI 1.52-2.08), and reintubation (aOR 2.12, 95% CI 1.83-2.47) versus non-anemic patients (P less than 0.001). Conclusions: In a national inpatient cohort of maxilla and malar fracture, anemia was associated with poor outcomes.

26. Environmental Sustainability in Otolaryngology-Head and Neck Surgery: A Scoping Review

Kieran Chalmers, HBSc, Hamilton, ON Canada; Kerry Hu, HBSc, London, ON Canada; Austin Heffernan, MD, Vancouver, BC Canada; Neil K. Chadha, MPH MBChB FRCSC, Vancouver, BC Canada

Educational Objective: At the conclusion of this presentation, the participants should be able to understand the current state of the literature of environmental sustainability in otolaryngology-head and neck surgery, and identify key barriers, facilitators, and innovations in the field.

Objectives: Explore existing literature on environmental sustainability in otolaryngology-head and neck surgery (OHNS), identifying current practices, trends, and future opportunities. Study Design: Scoping review. Databases included Medline, Embase, Web of Science, Cochrane Central, and grey literature from Google, ClinicalTrials.gov, thesis libraries, CDC, Public Health Agency of Canada, TRIP Database, ProQuest, and the National Institute for Health and Care Excellence. Methods: Search was strategy developed with a medical librarian. Protocol was registered on the Open Science Framework. Studies published before July 2024 were included following the Arksey and O'Malley framework and PRISMA-ScR guidelines. Study selection and data extraction were conducted in duplicate with conflicts resolved by a third reviewer. Results: Screening identified 47 studies, consisting of 19 investigational (40%), 18 grey literature/commentary (38%), 6 reviews (13%) and 4 interventional projects (8%). Most studies originated from the USA (30%, n=14), UK (23%, n=11), or Canada (21%, n=10), with 83% published between 2021-2024 (n=39). Key recommendations included improving operating room efficiency (55%, n=26), transitioning to reusables (40%, n=19), and leveraging telemedicine's cost and carbon reductions (13%, n=6). Interventional projects (n=4) achieved annual carbon and cost savings, ranging from 50.6-47,000 kg CO2 and $10,000-$33,774.55 CAD, respectively. Recurrent barriers include a lack of institutional support (13%, n=6), dearth of education on sustainability (11%, n=5), concerns for patient safety (6%, n=3) and time constraints (6%, n=3). Conclusions: Environmental sustainability in OHNS has garnered increasing interest, with limited but impactful interventions that warrant further exploration. This review underscores the need for addressing barriers and affecting institutional level change through education and advocacy.

27. Predictors of Same Day Cancellations in Outpatient Otolaryngology

Stella Eunseo Cho, BS, Chicago, IL; Sharanya Thodupunoori, BS, Chicago, IL; Christopher Roxbury, MD,

Chicago, IL

Educational Objective: At the conclusion of this presentation, the participants should be able to understand predictors of same day cancellations at an otolaryngology clinic in a multispecialty tertiary care academic medical center.

Objectives: Same day cancellations (SDC) are associated with decreased quality and access to care, lost revenue and productivity, and inconvenience to both patients and staff. This study sought to identify predictors of SDC by retrospectively analyzing same day cancellations in our otolaryngology clinic. Study Design: A query was conducted for all SDC data from July 2023-April 2024 for 24 providers from 7 otolaryngology subspecialties at a multispecialty tertiary care academic medical center. Methods: Case details including cancellation reason, provider subspecialty (general, head and neck, laryngology, otology, rhinology), demographics (age, sex, race), socioeconomic factors (area deprivation index, insurance), visit type (postop, procedure, return), and appointment time were extracted. Univariable and multivariable logistic regression models were used (significance set at </= 0.05). Results: Of 19,007 appointments, 10.3% (n=1957) of cases were SDC. The most common reason for cancellation was patient cancellation (723). Public insurance (odds ratio 1.33), Black race (OR 2.23), afternoon appointments (OR 1.54), increased state area deprivation index (OR 1.15), and all provider subspecialties except head and neck were associated with higher risk of SDC ($p<0.01$). Post-op visits (OR 0.61) and increased national area deprivation index (OR 0.98) were associated with lower risk of SDC ($p<0.05$). Conclusions: Our study showed that at our institution, most ENT subspecialties encounter SDCs. Many SDCs are avoidable. Understanding which appointments are more likely to cancel can help identify quality improvement efforts to reduce the number of SDCs.

28. Hearing Aid Use and Social Isolation among Veterans Administration Users

Lucas D. Cusimano, BS, Hanover, NH; Louise Davies, MD MS, Lebanon, NH; Ryan R. McCool, MD, White River Junction, VT

Educational Objective: At the conclusion of this presentation, the participants should be able to describe the differences in rates of hearing care and social isolation between Veterans Administration (VA) healthcare users and non-VA users. In addition, they should be able to describe how the VA may mitigate social isolation and explain the limitations of this conclusion.

Objectives: Determine whether Veterans Administration (VA) healthcare use improves access to hearing care, and whether this reduces social isolation. Study Design: Analysis of the National Health Interview Survey for 2019 and 2021-2023 (N = 118,652). Methods: Multivariable logistic regression to estimate odds of receiving hearing care and facing social isolation. All regressions controlled for degree of hearing difficulty, age, health insurance coverage, and other factors. Results: VA users comprised 4.2% of the sample (N = 5,029). VA users were more likely than non-VA users to have a hearing test in the prior two years (OR = 2.27, 95% CI: 1.95 - 2.66, $p < 0.001$) and use a hearing aid (OR = 2.77, 95% CI: 2.50 - 3.06, $p < 0.001$). Those who were non-VA users and used a hearing aid had a higher risk of social isolation (OR = 1.23, 95% CI: 1.14 - 1.34, $p < 0.001$) relative to non-VA users who did not use a hearing aid. Those who were VA users and had a hearing aid also had elevated social isolation (OR = 1.52, 95% CI: 1.29 - 1.79, $p < 0.001$) but at a rate that was comparable to VA users who did not use a hearing aid (OR = 1.53, 95% CI: 1.40 - 1.67, $p < 0.001$). Conclusions: VA users had more hearing care than non-VA users and were protected from the additional risk of social isolation that was seen among hearing aid users in the general population. These results from the VA healthcare system suggest that hearing care may mitigate social isolation. Emulating the VA model by expanding coverage of hearing aids could reduce social isolation, an important public health threat.

29. Gender Disparities in Leadership and Academic Ranks: An Updated Assessment of Women Representation in Otolaryngology Faculty

Albert Dweck, BA, Bronx, NY; Sara Friedman, BA, Bronx, NY (Presenter); Mark Hans, BA, Bronx, NY; Roxanna Mosavian, BA, Bronx, NY; Ronda Alexander, MD, Bronx, NY

Educational Objective: Women have historically been underrepresented in otolaryngology. This study examines the status of women's presence and highlights the opportunities for further efforts to include women in academic otolaryngology.

Objectives: To quantify gender representation by region, academic rank, and otolaryngology subspecialty practice among faculty members and evaluate recent progress in these areas. Study Design: Cross-sectional analysis. Meth-

ods: Publicly available data were reviewed from 131 ACGME accredited otolaryngology residency programs in the U.S.; unaccredited programs or those without publicly available information were excluded. Statistical analyses included Pearson correlations, chi squared tests, and ANOVA. Results: Among 2,644 faculty members, 764 (28.9%) were women and 1,880 (71.1%) were men. There is significant variation across subspecialties ($p< 0.001$). Women were most represented in pediatrics (197, 42.5%) and laryngology (91, 42.3%), but least represented in general otolaryngology (117, 24.0%) and head and neck surgery (118, 21.9%). Significant differences were noted across regions ($p=0.002$), with the Pacific having the highest proportion of women (112, 36.0%) and the Northeast the lowest (205, 24.8%). Gender distribution across academic ranks was significant ($p< 0.001$), with significantly more women assistant professors (37.3%) and significantly less women full professors (17.0%). Among leadership roles, women made up 17 (14.7%) of department chairs and 44 (34.1%) of program directors. There are no significant differences in gender distribution between programs with women and male department chairs or program directors. Conclusions: Women remain underrepresented in certain subspecialties and higher academic ranks. Regional disparities were also identified. Achieving gender equity within ORL-HNS will require continued effort, particularly among selected subspecialties and higher academic ranks.

30. Frailty Scoring Predict Postoperative Outcomes in Otolaryngology: RAI vs. MFI-5

Lauran Evans, MD MPH, Los Angeles, CA; Desiree Delavary, BS, Los Angeles, CA; Carine Tamamian, BS, Los Angeles, CA; Maie St. John, MD PhD, Los Angeles, CA; Dinesh Chhetri, MD, Los Angeles, CA

Educational Objective: At the conclusion of this presentation, the participants should be able to describe the utility of two frailty indices, MFI-5 and RAI.

Objectives: Patient frailty has been demonstrated to negatively impact post-surgical outcomes. The most common frailty scoring systems currently used are the Modified Frailty Index (MFI-5), which utilizes 5 variables, and the Risk Analysis Index (RAI), which utilizes a 14 point questionnaire. We compared these frailty indexes in predicting post-surgical outcomes. Study Design: Retrospective chart review. Methods: Retrospective chart review of patients undergoing surgery in the department of otolaryngology-head and neck surgery at a quaternary care medical center (2022-2024) who had an RAI score available for analysis. Frail status was categorized as MFI-5 greater than 1 or RAI greater than 30. T-test and multivariate predictive modeling were utilized, and covariates studied included BMI, age, sex, and preoperative laboratory values. Results: 1209 patients were included in the analysis. 21% of patients were classified as frail by MFI-5 vs. 23% of patients deemed frail utilizing RAI. Pearson correlation coefficient between MFI-5 and RAI was 0.481 (moderate correlation). High RAI and MFI-5 scores were associated with the following outcomes respectively: postoperative complications ($p<0.0001$ vs. 0.09), 30 day readmission rate ($p=0.0003$ vs. <0.0001), postoperative ICU stay ($p=0.018$ vs. 0.718), 30 day return to OR ($p=0.025$ vs. 0.052), and discharge with home health ($P<0.0001$ vs. 0.048). Multivariate modeling demonstrated the RAI to be predictive of postoperative outcomes ($p=0.016$), with ROC AUC=0.852, sensitivity=83%, specificity=85%. MFI-5 was not found to be predictive of postoperative outcomes ($p=0.99$), with the ROC AUC=0.818, sensitivity = 72%, specificity=84%. Conclusions: RAI outperformed MFI-5 in predicting postoperative outcomes in patients undergoing otolaryngology surgeries. RAI assessment should be considered in frailty research, multidisciplinary treatment planning, and managing patient expectations and outcomes.

31. Social Disparities of Patients Undergoing Hypoglossal Nerve Stimulation Surgery

Charlyn N. Gomez, BS, Baltimore, MD; Christopher Wen, MD, Baltimore, MD; Priya Patel, MD, Baltimore, MD; Sunny Haft, MD, Baltimore, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to identify demographic health disparities among hypoglossal nerve stimulator patient subgroups.

Objectives: Despite known health disparities of obstructive sleep apnea, the social determinants of health impacting the recipients of hypoglossal nerve stimulators (HNS) remain poorly understood. We aimed to understand potential inequities by assessing the demographics of implanted patients on a national scale. Study Design: Retrospective review of COSMOS, an Epic medical software database. Methods: Patients implanted with HNS between 2015 and 2021 were included. We evaluated patient demographics, socioeconomic percentile (SE%), social vulnerability index (SVI), percentage of uninsured persons, rural/urban area code, and marital status. Two way ANOVA tests were performed. Results: Of 248 million patients, 4,872 received HNS implantation. Most were white non-Hispanic males (n= 2972, 61.0%) and females (n=1318, 27.1%). More Hispanic males and females had an SVI of 60%-80% compared to

non-Hispanic males and females (77.7% v.s. 0.51%; p =0.0001). Similarly, more Black males and females had higher SE% (60%-80%), correlating with poorer SES, than white males and females (92.9% vs. 13.2%; p=0.0001). White patients were more likely to live in a zip code where less than 5% of residents were uninsured, whereas Black patients were more likely to live in a zip code where 5-10% of residents are uninsured (85.1% vs. 92.4%; p= 0.0018). Most lived in metropolitan areas (n=4194, 86.4%) and were married (n=3211, 67.9%; p= 0.0443). Conclusions: HNS recipients are primarily white non-Hispanic males with less social vulnerability than non-white patients. The racial distribution of HNS implantation is highly skewed compared to the general U.S. population. Our data suggests the presence of health disparities affecting HNS patients.

32. Differences in Cardiovascular Outcomes between Hypoglossal Nerve Stimulator Recipient and Non-Recipient Sleep Apnea Patients

Charlyn N. Gomez, BS, Baltimore, MD; Neha Amin, MD, Baltimore, MD; Sunny Haft, MD, Baltimore, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to compare the cardiovascular outcomes between obstructive sleep apnea patients who have and have not received a hypoglossal nerve stimulator.

Objectives: The long term cardiovascular outcomes of obstructive sleep apnea (OSA) patients who have received a hypoglossal nerve stimulator (HNS) are understudied. We aimed to describe these outcomes and compare them to those of nonsurgical OSA patients. Study Design: Retrospective review of COSMOS, an Epic medical software database. Methods: OSA patients were identified between 2017 to 2020 with ICD 10 code G47.33 and visit encounter linkage to an ENT provider. The study group was further selected by applying HNS CPT codes 64568 and 0466T. The control group was chosen by excluding HNS CPT codes 64568 and 0466T and including patients with a BMI of 35 or lower. Outcomes of interest were coronary artery disease (CAD), unstable angina, myocardial infarction, cerebral infarction, hyperlipidemia, coronary angioplasty status, and all cause mortality within the four years following implantation. Incidence rates and odds ratios were calculated. Results: The study and control group were composed of 2,900 and 299,369 patients, respectively, and were predominantly male (68.8% vs. 60.5%). When compared to nonsurgical patients prior to intervention, HNS patients had a higher prevalence of hypertension (53.56% vs. 30.48%), type 2 diabetes (17.31% vs. 12.42%), CAD (13.97% vs. 9.61%), and atrial fibrillation (9.21% vs. 5.7%). Postoperatively, HNS patients had lower odds of being diagnosed with CAD (OR 0.3674, p=0.0001), myocardial infarction (OR 0.2557, p=0.0001), hyperlipidemia (OR 0.437, p=0.0001), unstable angina (OR 0.5524, p=0.0101), and of undergoing coronary angioplasty (OR 0.4128, p=0.0002). Conclusions: Despite having a higher prevalence of cardiovascular comorbidities prior to surgery, HNS patients had lower odds of poor postoperative outcomes when compared to nonsurgical OSA patients.

33. The Association between Obstructive Sleep Apnea and Incident Cancer: A Population Level Analysis

David Greis, BA, Los Angeles, CA; Sebastian Jara, MD MPH, Los Angeles, CA

Educational Objective: At the conclusion of this presentation, the participants should be able to understand the association between the risk of developing cancer and being diagnosed with obstructive sleep apnea and specifically, which types of cancer are patients with OSA at higher risk of developing.

Objectives: To test the association between preexisting obstructive sleep apnea (OSA) and subsequent cancer incidence in a large, long term international cohort. Study Design: A retrospective matched cohort study was conducted using administrative data from TriNetX, a large global research network. Methods: Adult patients (age 18+ years) diagnosed with OSA between 2014 and 2024 were identified by International Classification of Diseases, Tenth Revision (ICD-10) codes and a preceding polysomnogram, identified using current procedural terminology (CPT) codes, and compared to a cohort of patients without an OSA diagnosis presenting during the same timeframe. Cancer diagnoses were identified by ICD-10 codes for at least 1 day after OSA diagnosis or index date. Patients with the diagnosis prior to index date were excluded. A 1:1 propensity score match was performed on age, sex, ethnicity, diabetes, smoking status, obesity, and alcohol use. We tested the association between OSA and cancer incidence using these propensity matched cohorts. Results: After propensity matching, the cohort included 761,514 patients (380,757 with and without OSA) with a mean age of 60 years, a slight female predominance (52%), a minority Hispanic/Latino (8.6%), and majority obese (59%). Cancer incidence was elevated in the OSA group, with 20,058 (6.0%) cases compared to 17,316 (5.2%) in the non-OSA group (relative risk [RR]: 1.15, 95% CI: 1.14-1.18, p<0.0001). Subgroup analysis by cancer type revealed a higher incidence of melanoma (RR: 1.38, p<0.001), thyroid malignancies (RR: 1.36, p<0.0001),

male urologic malignancies (RR: 1.17, p<0.001), lymphoid/hematopoietic cell malignancies (RR: 1.18, p<0.001) in the OSA vs non-OSA groups. There was no significant difference in the subsequent incidence of gastrointestinal, head and neck, or central nervous system malignancies between groups. Conclusions: After propensity matching, preexisting OSA was modestly associated with an increased risk of subsequent cancer. Further research into the specific cancer types more strongly associated with OSA may lead to a greater understanding of the shared mechanistic pathways of both disease processes.

34. Gender Difference in Quality of Life in Meniere's Disease

Martha Lucia Gutierrez Perez, MD, Orange, CA; Daim Tabba, BS, Orange, CA; Cynthia Tsang, BS, Orange, CA; Ella J. Lee, BA, Orange, CA; Mehdi Abouzari, MD PhD, Orange, CA; Hamid R. Djalilian, MD, Orange, CA

Educational Objective: At the conclusion of this presentation, participants should be able to recognize the gender difference in the subjective experiences of patients with Meniere's disease (MD), particularly in terms of physical and functional debility.

Objectives: This study aims to explore how gender may influence the subjective experiences of patients with MD. Study Design: Retrospective chart review. Methods: Definite MD patients at a tertiary care neurotology clinic were surveyed and asked to complete the Dizziness Handicap Inventory (DHI), Perceived Stress Scale (PSS), and Tinnitus Functional Index (TFI). Information regarding presentation timing, comorbid conditions, and subsequent followup was collected. Results: In total, 160 patients were identified with MD and 56% of the cohort were female (n=90). The mean age of presentation was 50 +/- 16 years in men and 58 +/- 15 years in women. No significant differences were found in the incidence of comorbid vascular conditions, psychiatric conditions, or obstructive sleep apnea, keeping followup appointment, or reporting of treatment side effects. Women were found to experience greater physical (p=0.002) and functional (p=0.02) debility from vertigo based on the DHI. Both women and men experienced similar levels of emotional debility (p=0.33) on the DHI. No significant differences were found regarding perceived stress from symptoms based on the PSS. Tinnitus had a greater adverse effect on the functional ability of women (p=0.02), particularly regarding sense of control, cognition, hearing, and sleep based on the TFI. Conclusions: Amongst patients with definite MD, women tend to experience greater physical and functional debility from vertigo and are more adversely functionally impaired by tinnitus.

35. How Changing Signaling Volume Impacts the Importance of Away Rotations in the Otolaryngology Match

Maya G. Hatley, BA, New York, NY; Ronald Shen Wang, BS, New York, NY; Wenqing Yang, MA, New York, NY; Michele Santacatterina, PhD, New York, NY; Angela Mihalic, MD, New York, NY; Max April, MD, New York, NY

Educational Objective: At the conclusion of this presentation, the participants should have improved understanding of the impact of recent changes in signaling on otolaryngology residency application outcomes.

Objectives: The number of signals allotted to otolaryngology applicants was 5 in 2021, 4 in 2022, 7 in 2023, and recently increased to 25 in 2024. This study aimed to assess the effect of signaling on the relationship between performing away rotations and matching in otolaryngology from 2017-2024. Study Design: Cross-sectional. Methods: We used the Texas Seeking Transparency in Application to Residency (STAR) survey responses of otolaryngology applicants from 2017-2024. Logistic regression was done to determine the rate of matching at a program where an away rotation was performed during the pre-signaling era (2017-2020), low volume signaling era (2021-2023), and high volume signaling era (2024). Results: 23.0% (n=868) of otolaryngology applicants in the 2017-2024 matches completed the Texas STAR survey. Using multivariate logistic regression to control for geographic connection, signaling use, and time period (pre-signaling, low volume signaling, or high volume signaling), applicants were found to be less likely to match at a program where an away rotation was performed in the low volume signaling era (OR: 0.71, 95% CI: 0.58 - 0.87; $p < 0.01$) and in the high volume signaling era (OR: 0.44, 95% CI: 0.31 - 0.611; $p < 0.01$) compared to the pre-signaling era. Across both signaling eras, signal use combined with away rotation completion was associated with significantly increased match rates (OR: 4.29, 95% CI: 3.3 - 5.5; $p < 0.01$). Conclusions: In the otolaryngology match, both the introduction of signaling and the recent increase in signal number to 25 are associated with decreased likelihood of matching at a program where an away rotation was performed compared to the pre-signaling era.

36. Education to Improve Emergency Medicine Residents' Knowledge and Comfort Level in Managing Otolaryngologic Related Pathologies

Hannah G. Hildebrand, MD, Washington, DC; Esther Lee, DO, Washington, DC; Johnny Jung, MD, Washington, DC; Brandson Shaver, MD, Washington, DC; Luis Hernandez-Rodriguez, MD, Washington, DC; Chloe Harrington, MD, Washington, DC

Educational Objective: At the conclusion of this presentation, the participants should be able to determine the effectiveness of a resident educational intervention on the management of otolaryngologic complaints commonly encountered in the emergency department.

Objectives: To determine the effectiveness of a resident educational intervention on the management of otolaryngologic complaints commonly encountered in the emergency department. Study Design: This is a prospective survey based intervention study performed at a single academic institution in October 2024. Methods: The intervention consisted of an educational session held by an otolaryngology resident aimed at emergency medicine (EM) residents on commonly seen patients with otolaryngologic complaints in the emergency department (ED). Pre- and post- intervention surveys are composed of comfort levels using a Likert scale (1= least comfortable, 5= most comfortable) and knowledge through multiple choice and true and false questions (score 0-20). The results were analyzed using chi square analysis with SPSS. Results: A total of 16 residents participated in the study. The majority of the residents were female (N=11/16, 68.8%) with an average age of 29.6 years. The mean comfort level score improved following the intervention (pre-intervention 2.9 vs. post-intervention 3.8, p=0.001). Similarly, the mean score on knowledge questions improved after the intervention (11.2 vs. 15.6, p=0.0006). All participating residents found the education to be helpful and reported increased confidence in managing otolaryngologic related cases. Conclusions: The educational intervention successfully enhanced EM residents' knowledge and comfort levels in managing otolaryngologic related pathologies commonly seen in ED.

37. Enhancing Multidisciplinary Airway Management: A Novel Simulation Day Integrating ENT and Anesthesia Teams in Real Case Scenarios

Tommy Jacob, MD, Tel Aviv, Israel; Anton Warshavsky, MD, Tel Aviv, Israel (Presenter); Osnat Cohen-Rosenboim, MD, Tel Aviv, Israel; Evgeny Rachman, MD, Tel Aviv, Israel; Gilad Horowitz, MD, Tel Aviv, Israel; Nidal Muhanna, MD PhD, Tel Aviv, Israel; Yitzhak Brezinski Sinai, MD, Tel Aviv, Israel

Educational Objective: At the conclusion of this presentation, the participants should be able to get acquainted with a novel airway management simulation day in the participation of ENT residents, anesthesiology residents and specialists focused on managing complex airway scenarios. The study seeks to highlight the benefits of multidisciplinary teamwork and real world applications in airway management training, ultimately aiming to improve participants' preparedness for handling extreme airway situations.

Objectives: This study aims to evaluate a novel airway management simulation day for ENT and anesthesiology residents and specialists. The simulation day, conducted annually for four years, focuses on multidisciplinary teamwork to manage composite airway scenarios based on real cases from our medical center. Study Design: This is a prospective study assessing participants' confidence and satisfaction through pre- and post-simulation questionnaires. Methods: A total of 23 anesthesiologists and ENT residents participated in the simulation day, with 19 completing both questionnaires. Each year, 26 ENT residents and anesthesiologists participate in the training. Participants worked together in composite scenarios (e.g., base of tongue bleeding, supraglottic tumor), led jointly by an ENT resident and an anesthesiologist, receiving feedback from senior physicians at the conclusion of each scenario. The scenarios included advanced simulation tools in a "smart" simulation center and the collaboration of operating room nursing staff. Participants' confidence in managing difficult airway situations was self-reported and analyzed. Results: Of the 19 participants, 11 (57.9%) were ENT residents and 9 (42.1%) were anesthesia residents or specialists. About 78.9% had previously encountered difficult airway situations, but only one participant reported confidence in managing such cases prior to the simulation. After the simulation, over 90% rated the scenarios as 4 or 5 on a scale of 1 to 5, and 95% reported increased confidence. Conclusions: The airway management simulation day significantly improved participants' confidence in handling extreme airway scenarios. While many simulation days exist, this program stands out due to its multidisciplinary approach, combining the expertise of both ENT and anesthesia teams working together in real world scenarios. The collaborative nature and practical focus make this simulation highly effective. Ongoing followup is recommended to assess long term impact.

38. Sleep Related Symptoms Associated with Mild Traumatic Brain Injury

Kennedy Johnson, BS, San Francisco, CA; Alyssa Civantos, MD MS, San Francisco, CA; Nina Patel, MS MPhil, San Francisco, CA; Sultan Al Azzawi, BS, San Francisco, CA; Jolie Chang, MD, San Francisco, CA; Megan Durr, MD, San Francisco, CA

Educational Objective: At the conclusion of this presentation, the participants should be able to better understand the relationship between traumatic brain injury and sleep related quality of life measures.

Objectives: Traumatic brain injury affects 1.5 million people annually in the United States, with the majority classified as mild (mTBI). Patients often experience long term impairments of daily functioning and quality of life. This study investigates obstructive sleep apnea (OSA) risk and sleep related symptoms in a cohort of mTBI patients. Study Design: Cross-sectional retrospective survey study. Methods: Patients with mTBI >/= 6 months prior to study enrollment completed the Neurobehavioral Symptoms Inventory (NSI), Epworth Sleepiness Scale (ESS), STOP-BAG Questionnaire, Insomnia Severity Index (ISI) and the Functional Outcome of Sleep Questionnaire-10 (FOSQ) surveys. Associations between symptom scores were performed. Results: A total of 40 subjects (70% male) were surveyed. Mean age was 55 years (SD=16.7) and average time from injury was 31 months (SD=6.8). Mean ESS score was 8.32 (range 0-23), mean ISI was 9.97 (0-28), and mean FOSQ was 27.27 (0-40). Based on STOP-BAG scores, 43% of participants had intermediate or high risk for OSA. Linear regression analysis showed significant associations between NSI score and ESS, ISI and FOSQ. No association was found between NSI and STOP-BAG. Multivariate analysis showed NSI score was a significant positive predictor for ESS and ISI when controlling for age, body mass index, time from injury, FOSQ and STOP-BAG. Conclusions: mTBI symptom severity is associated with chronic impairments in sleep related quality of life. Patients with more severe neurobehavioral symptoms post-mTBI have increased daytime sleepiness without increased risk for obstructive sleep apnea.

39. Low Arousal Threshold as a Predictor of a Shift to Noncompliance over Time among Patients with OSA Undergoing Hypoglossal Nerve Stimulator Therapy

Praneet Chandra Kaki, BS, Philadelphia, PA; Jaehee Kim, BA, Philadelphia, PA; Bradley A. Edwards, PhD, Notting Hill, Australia; Maurits Boon, MD, Philadelphia, PA; Colin Huntley, MD, Philadelphia, PA; Thomas M. Kaffenberger, MD, Pittsburgh, PA

Educational Objective: At the conclusion of this presentation, the participants should be able to understand the importance that low baseline arousal threshold may have on long term adherence to HGNS therapy for CPAP intolerant OSA.

Objectives: Obstructive sleep apnea (OSA) entails a complex interplay between anatomic vulnerability and pathophysiologic endotypes such as low arousal threshold (ArTH). A low ArTH is present in over 50% of OSA patients and causes frequent arousals from sleep in response to small changes in respiratory effort. Notably a low ArTH has been linked to poor sleep quality, increased daytime symptoms, and poor long term CPAP compliance. Whether a low ArTH is also predictive of poor adherence with other treatments such as hypoglossal nerve stimulation (HGNS) has not been examined. Study Design: Retrospective cohort review at a single institution. Methods: Patients who underwent HGNS placement between 2020-2024 were included. The ArTH was estimated using the following formula: [AHI less than 30 events/h] + [SpO2 nadir greater than 82.5%] + [hypopnea % greater than 58.3%]. A score of 1 was added for each criterion (low ArTH indicated by a score of at least 2). Hypopneas were defined as a 30% reduction in airflow associated with at least aâ€‰4% oxygen desaturation. HGNS compliance was defined as at least 4h/night for greater than 70% of nights. Wilcoxon rank sum and chi squared tests were performed in R studio. Results: Of 184 patients, 97 (52.7%) patients had low ArTH preoperatively. 76% and 65% of all patients were adherent to HGNS therapy at 3 and 6 months, respectively. Patients with low ArTH had lower average AHI at baseline (22.6 vs 39.7 events/h, p<0.001), experienced smaller reductions in AHI following therapy, and were more likely to shift from compliance (at 3 months) to noncompliance (at 6 months) (29% vs. 11%, p=0.05). Patients who shifted to noncompliance at 6 months had a lower absolute ArTH (-14.08cmH2O vs -17.16 cmH2O, p=0.04) and higher average Epworth scores post-therapy (11.29 vs 5.36, p=0.031). Conclusions: A low ArTH was associated with an unfavorable shift from HGNS compliance to noncompliance and higher daytime sleepiness symptoms in OSA patients. Identifying patients with low ArTH preoperatively may improve precision care for OSA patients undergoing HGNS.

40. Sinonasal Symptom Prevalence and Medication Use among Astronauts: A Cohort Study on the International Space Station

Faizaan Khan, BS, Houston, TX; Koyal Ansingkar, MS, Houston, TX; Roshan Dongre, BS, Houston, TX; David Hilmers, MD, Houston, TX; Omar Ahmed, MD, Houston, TX; Masayoshi Takashima, MD, Houston, TX

Educational Objective: At the conclusion of this presentation, the participants should be able to recognize and explain the prevalence of sinonasal complications in astronauts during spaceflight, understand the significance of these conditions in space, and discuss the medications currently used to manage them.

Objectives: To examine the incidence of sinonasal symptoms in astronauts and analyze patterns of related medication usage during missions to the International Space Station, with attention to symptom triggers and treatment strategies. Study Design: Retrospective cohort study utilizing NASA's Lifetime Surveillance of Astronaut Health (LSAH) and Life Sciences Data Archive (LSDA). Methods: Deidentified medical records from 71 astronauts over 33.94 cumulative years of spaceflight from Expedition 1 through 62 were reviewed, focusing on sinonasal complaints and fluid shift related complications. Medical complaints were manually categorized into groups such as general nasal congestion, infections and barotrauma. Medication usage logs from the ISS medical kit were analyzed. Results: A total of 754 medical events were reported, with an average of 10.62 ENT related events per astronaut. General nasal congestion was the most common complaint (597 reports, 8.41 per astronaut). Pseudoephedrine was the most frequently used medication (96 instances), followed by Afrin (53 instances). Medications were primarily used for congestion relief (190 cases) and pre-extravehicular activity and experiment prophylaxis (42 cases). Conclusions: Sinonasal complications are prevalent among astronauts, with medication use being a common management strategy. These findings underscore the importance of optimizing current treatments to better address ENT related symptoms during spaceflight.

41. Sphenopalatine Ganglion Block's Efficacy in Sinonasal Surgeries -- A Systematic Review and Meta-Analysis

Ayman Khatib, BA, Stratford, NJ; Sami Dakhel, BA, Stratford, NJ; Gabrianna Andrews, BA, Stratford, NJ; Piotr Domaszewski, BA, Stratford, NJ; Anthony DiPalma, BA, Stratford, NJ; David Temmermand, DO, Voorhees, NJ

Educational Objective: At the conclusion of this presentation, the participants should be able to observe the current data available on the efficacy of sphenopalatine ganglion block in sinus (functional endoscopic surgery) and nasal (septoplasty, rhinoplasty, turbinoplasty) surgeries. The analyzed outcomes were intraoperative blood loss, postoperative pain at post-anesthesia care and 24 hours postoperatively, surgical field view, and anesthesia recovery time.

Objectives: This study explores the impact of sphenopalatine ganglion block (SPGB) on intraoperative blood loss (IOBL) and postoperative pain in sinonasal surgeries. Study Design: This study is a systematic review and meta-analysis. Methods: PubMed, Scopus, Embase, Cochrane Library, and Web of Science were queried for this systematic review following the 2020 PRISMA guidelines. Fourteen studies with 803 patients were included in the meta-analysis. RStudio was used to conduct the meta-analysis with a random effects model and reported as standard mean difference (SMD). Both sinus and nasal surgeries were analyzed and delineated via subgroup analysis. Results: SPGB significantly reduced IOBL in overall sinonasal surgery (SMD = -4.40, $p < 0.01$) but showed no impact on IOBL in sinus surgery alone (SMD = -0.05, $p = 0.73$). Postoperative pain was significantly reduced in sinonasal surgery (SMD = -2.47, $p < 0.01$; SMD = -2.33, $p < 0.01$; in the post-anesthesia care unit and after 24 hours respectively). Anesthesia recovery time significantly decreased in sinus surgery in the SPGB group, while there was no data on nasal surgeries (SMD= -2.03, $p<0.01$). The duration of surgery slightly increased in nasal surgeries, but there was no difference in sinus surgery (SMD= 0.2, p=0.02; SMD= 0.03, p=0.81; nasal and sinus surgeries, respectively). The surgical field view showed a nonstatistically significant overall improvement compared to the control group in sinonasal surgery (SMD= -1.5, p=0.56). Conclusions: SPGB reduces postoperative pain and blood loss in sinonasal surgeries. More studies are needed to explore SPGB efficacy on surgical field view and anesthesia recovery time. SPGB should be brought into consideration as an adjunct therapy to improve patient outcomes in sinonasal surgeries.

42. An Evaluation of Wait Times at Otolaryngology Clinics

Eugene A. Kim, MM, Pittsburgh, PA; Natasha Mayer, BS, Pittsburgh, PA; Edra Ha, MPH, Pittsburgh, PA; Rida Ashraf, Pittsburgh, PA; Garret Choby, MD, Pittsburgh, PA; Angela Mazul, PhD MPH, Pittsburgh, PA

Educational Objective: At the conclusion of this presentation, the participants should be able to assess wait times at otolaryngology clinics in our state.

Objectives: To identify barriers to timely diagnosis for common otolaryngologic conditions. Study Design: This was a cross-sectional study. Methods: A total of 235 unique otolaryngology clinics were identified through the Medifind database and contacted four times through a standardized script. Callers simulated four conditions: sudden unilateral hearing loss (UHL), new neck mass (NM), chronic sinusitis (CS), or subacute hoarseness (SH). Clinics were categorized based on rural/urban commuting area (RUCA) codes and practice type, including tertiary care centers, community hospitals, and private practices. Results: Of 235 unique otolaryngology clinics in our state, 148 (63.0%) were successfully contacted. Of these clinics, 11 (7.4%) were tertiary care centers, 62 (41.9%) community hospitals, and 75 (50.7%) private practice based. Clinics answered an average of 2.30 of 4 (57.5%) calls and reported a median wait time of 23.5 [14.0-39.0] days. The median wait times per presenting complaints were 21.5 [5.0-42.0] days for UHL, 21.0 [10.0-35.0] days for NM, 28.0 [10.0-42.0] days for CS, and 28.0 [14.0-41.0] days for SH; with no significant difference between complaints. Similarly, wait times between rural (32.5 [16.0-50.0] days) and urban (23.0 [12.0-38.0] days) settings showed no significant difference. Of note, wait times were significantly shorter in the private practice setting (18.5 [10.0-26.0] days) compared to tertiary care centers (43.0 [20.0-62.0] days) and community based hospitals (30.0 [18.0-54.0] days) (p=0.001). Conclusions: Patients experience lengthy wait times for otolaryngology appointments, even for urgent conditions. Private practices have shorter wait times compared to hospitals, indicating greater operational flexibility and lower patient volume.

43. Differences amongst Resident Perceptions of Operative Autonomy: A Survey Study

Rotem Kimia, MD, Boston, MA; Bella Onwumbiko, MD, Boston, MA; Lauren Tracy, MD, Boston, MA; Andrew Scott, MD, Boston, MA; Jeremiah Tracy, MD, Boston, MA

Educational Objective: At the conclusion of this presentation, the participants should be able to identify demographic differences in resident perceptions of surgeon roles as outlined by the Accreditation Council for Graduate Medical Education (ACGME).

Objectives: Demographic based disparities in surgical residency training are a longstanding, well established problem in the United States medical education system. Prior studies have demonstrated that female residents report less operative autonomy than their male counterparts of equal postgraduate year (PGY) experience level, as characterized by the ACGME Accreditation Data System (ADS). However, as the ADS relies on independent resident reporting and interpretation of ACGME surgeon roles, the level of resident participation in surgical cases may not be accurately captured by this system due to perceptual differences regarding autonomy. The purpose of this study is to evaluate resident perceptions of operative autonomy by prompting participants using clinical vignettes to assign resident surgeon roles in multiple operative scenarios. Study Design: Anonymous survey study of resident, fellow, and attending members of ACGME accredited, United States based otolaryngology residency programs. Methods: An online survey housed on a hospital encrypted database was distributed to residents, fellows, and attendings with appointments at ACGME accredited otolaryngology residency programs. The survey contained clinical vignettes outlining different levels of resident involvement in four key indicator cases: superficial parotidectomy, postauricular tympanoplasty, open reduction internal fixation (ORIF) of a mandibular fracture, and thyroglossal duct cyst excision. Participants were also queried about their level of training; self-identified gender, race, and ethnicity; and size and geographic location of residency program. Results: Our survey yielded 78 respondents (35M:43F), with a majority of those being residents (80.8%) representing every PGY level of a 5 year otolaryngology residency. Female physicians were found to be significantly more likely to assign a “resident assistant surgeon” role given a standardized clinical vignette when compared to male physicians (OR 1.78, 95% confidence interval [CI] 1.05-3.01, p=.031). Further factors associated with higher likelihood of assigning a “resident assistant surgeon” role included having graduated residency (OR 1.91, 95% CI 1.00-3.66, p=.050), being a more junior resident as defined by PGY3 or below (OR 1.82, 95% CI 1.02-3.23, p=.042), and not self-identifying as white (OR 2.49, 95% CI 1.44-4.30, p=.0011). Residency size and geographic location were not found to significantly correlate to survey responses. Conclusions: Even when presented with identical clinical vignettes describing resident involvement in key indicator surgical cases, residents of different genders, racial backgrounds, and levels of training characterize level of resident autonomy differently, which may subsequently be reflected in ADS surgical case logs.

44. Exploring the Predictive Value of National Residency Matching Program (NRMP) Rank in Residency Performance and Leadership Outcomes

Emily Kwon, BA, Newark, NJ; Mingzhuo Pei, BS, Newark, NJ; Annie Xu, BS, Newark, NJ; Evelyne Kalyoussef, MD, Newark, NJ; Wayne Hsueh, MD, Newark, NJ

Educational Objective: At the conclusion of this presentation, the participants should be able to increase their knowledge on the relationship between NRMP rank and resident performance.

Objectives: To examine the relationship between the National Residency Matching Program (NRMP) rank list position and otolaryngology residency performance. Study Design: Retrospective cohort study. Methods: Four consecutive graduating classes at a single institution's otolaryngology residency training program (2021-2024) were evaluated (n=14) using their complete five year data. Correlation coefficients were calculated to assess the relationship between NRMP rank and in service exam scores, milestone evaluations, selection as administrative chief resident, and receipt of teaching awards. Milestone evaluations were based on faculty ratings across all seven core competencies on a 1 to 7 point scale, with an average score calculated for each resident. Spearman's rho was used to evaluate correlations between NRMP rank and both in service scores and milestone evaluations. Chi square tests were conducted to assess associations between NRMP rank and categorical outcomes, including selection as administrative chief resident and receipt of the teaching award. Results: The average NRMP rank of the residents was 8.43 (range:1-26). There was a significant correlation between higher NRMP rank and improved milestone evaluations (Ï=-0.599, p=0.024). However, there was no significant correlation between NRMP rank and in service exam scores (Ï=-0.197, p=0.499). Further, no significant associations between NRMP rank and selection as administrative chief resident or receipt of the teaching award were found. Conclusions: Our results suggest that better ranked residents receive higher milestone evaluation scores. However, NRMP rank alone may not reliably predict performance in in service exam scores, chief resident selection, or receipt of teaching awards.

45. Gender Disparity in Key Indicator Procedures in Otolaryngology

Jason C. Lee, MD PhD, Portland, OR; Skylar Trott, MD, Louisville, KY; Joseph Curry, MD, Philadelphia, PA; Larissa Sweeny, MD, Miami, FL; Kathleen Yaremchuk, MD, Detroit, MI; Mark K. Wax, MD, Portland, OR

Educational Objective: At the conclusion of this presentation, the participants should be able to appreciate that there is no gender disparity in otolaryngology training among U.S. trainees.

Objectives: Previous reports on surgical training and gender disparity have shown conflicting data across studies and surgical subspecialties. This study investigates the key indicator numbers for graduating otolaryngology surgical residents in a multi-institutional study. Study Design: Retrospective multi-institutional chart review. Methods: We evaluated key indicator procedures as described by the ACGME RRC for otolaryngology from 11 institutions in the U.S. between 2006 and 2023. Variables examined included gender, graduating year, and the specific institution where the individual trained. We used the Mann-Whitney U test, ANOVA with post hoc multiple comparison tests, and multiple linear regression analysis where appropriate. Results: We analyzed deidentified case logs from 288 male and 179 female otolaryngology residents. Male residents reported a mean of 941.82 cases, while female residents reported a mean of 873.34 cases (p = 0.016). However, analysis of means between each gender's case volume within each of the 11 institutions revealed no significant differences using ANOVA with post hoc multiple comparison tests. Multiple regression analysis indicated that the specific institution where an individual trained had a significant main effect on case volume (p= 0.025), but gender (0.110) and graduating year (0.825) did not. Conclusions: Considering gender, graduating year, and specific institution as independent variables, institutional differences appear to be the only significant factor accounting for variations in case volume. Within the 11 institutions studied, multiple comparisons showed no significant differences in case volume based on gender.

46. Clinical and Radiographic Predictors of Successful Peritonsillar Abscess Drainage

Andrew Li, BA, Philadelphia, PA; Andrew Wadley, MD, Philadelphia, PA; Ahmed Soliman, MD, Philadelphia, PA

Educational Objective: At the conclusion of this presentation, the participants should be able to understand the clinical and CT characteristics that lend to successful surgical drainage of peritonsillar abscesses.

Objectives: The mainstay of treatment for peritonsillar abscess (PTA) is surgical drainage. Physical examination is often used to make the diagnosis and plan drainage, but computed tomography (CT) has been found to enhance diagnostic accuracy and guide drainage, although both carry a risk of false positives. This study sought to determine which clinical and CT characteristics predicted successful surgical drainage. Study Design: Case control study. Methods: After IRB approval, we retrospectively reviewed patients greater than 18 years old who presented to our

emergency department with a PTA, had a CT neck with contrast, and drainage attempted between January 2013 and December 2023. Physical exam, CT, and laboratory findings were collected. A univariate analysis and binomial logistic regression were performed to determine which variables predicted successful drainage. Results: 97 patients had successful PTA drainage whereas 53 had unsuccessful drainage. Clinically, patients who had a successful drainage were more likely to have soft palate effacement ($p = 0.016$). Radiographically, patients with successful drainage were more likely to have an abscess that reached the midline ($p = 0.007$), higher Hounsfield units at the center ($p= 0.011$), and a larger abscess size ($p < 0.001$). Temperature, soft palate effacement, and Hounsfield units were statistically significant upon binomial logistic regression, with respective odds ratios of 0.674, 3.233, and 1.079. Conclusions: Soft palate effacement, a higher temperature, and higher Hounsfield units on CT were predictive of successful PTA drainage.

47. Association between Perioperative Opioid Prescription following Common Otolaryngological Procedures and New Persistent Opioid Use

Michael Wu Liu, BS, Cleveland, OH; Austin Jaehyuk Lee, BS, Cleveland, OH (Presenter); Salim Hayek, MD PhD, Cleveland, OH; Shawn Li, MD, Cleveland, OH

Educational Objective: At the conclusion of this presentation, the participants should be able to appreciate the association between perioperative opioid prescription and subsequent persistent opioid use following common otolaryngological procedures.

Objectives: To evaluate and assess 1) the incidence of perioperative opioid prescription; and 2) the development of new persistent opioid usage in patients prescribed perioperative opioids for a selection of common otolaryngological procedures. Study Design: Retrospective cohort analysis. Methods: The TriNetX U.S. Collaborative Research Network was queried to create cohorts of opioid naive adult patients who underwent tonsillectomy, sinus surgery, parotidectomy, septoplasty, tympanoplasty, rhinoplasty, or parathyroidectomy between 2010 to 2024. Patients prescribed perioperative opioids (2 weeks before to 1 month after surgery) were compared with those not prescribed opioids. Persistent opioid use was defined as opioid prescription between 3 to 9 months after surgery. Propensity score matching was performed based on demographics, smoking status, mental health diagnoses (e.g., mood, anxiety, personality, psychotic, and substance use disorders), preoperative pain conditions (e.g., back, neck, arthritis, and pelvic/scrotal pain), as well as other medical comorbidities, and healthcare utilization. Results: We identified 256,592 opioid naive patients who underwent the selected otolaryngological procedures. Of these patients, 215,744 (84.1%) received perioperative opioids. The rate of perioperative opioid usage was highest for parotidectomy. Across all procedures, patients who received perioperative opioids were more likely to develop new persistent opioid use. The highest risk ratios (RR) were observed for tympanoplasty (RR: 2.45; 95% CI: 1.91, 3.15) and parotidectomy (RR: 2.28; 95% CI: 1.65, 3.15). Conclusions: Perioperative opioid prescription following common otolaryngological procedures is associated with a higher risk of new persistent opioid use. These findings highlight the need for careful opioid prescribing to reduce long term opioid dependence.

48. Comparing Reported vs. Projected Otolaryngology Procedure Durations Based on RVUs: A Retrospective Analysis of National and an Academic Health Center

Jacob Garn Mabey, MD, New Haven, CT; Soraya Fereydooni, BS, New Haven, CT; R. Peter Manes, MD FACS, New Haven, CT

Educational Objective: At the conclusion of this presentation, the participants should be able to understand 1) the differences in actual and projected procedure durations; and (2) how patient factors and comorbidities influence procedure durations.

Objectives: The differences between the American Medical Association's Relative Value Scale Update Committee (RUC) projected operation times and actual procedure lengths have yet to be examined for procedures across otolaryngology subspecialties. Study Design: Retrospective cohort study. Methods: Using current procedural terminology (CPT) codes, we identified patients from an academic health center (AHC) and the American College of Surgeon National Surgical Quality Improvement (NSQIP) database between 2013-2020 who had only undergone primary septoplasty, unilateral maxillary antrostomy, medialization laryngoplasty, superficial parotidectomy with facial nerve dissection, total thyroidectomy, thyroglossal duct cyst, and cochlear implantation. RUC projected times were compared to reported operation lengths. The effect of patient sex, operation setting, and comorbid conditions was also assessed using multivariate logistic regression. Results: 3,683 patients from AHC and 57,713 patients from NSQIP

met the inclusion criteria. Primary septoplasty (80 (42) vs 60 (35); P<0.001), medialization laryngoplasty (96 (37) vs 59 (14); P<0.001), total thyroidectomy (121 (48) vs 114 (40); P<0.001), thyroglossal duct cyst (80 (35) vs 71 (27); P<0.001), parotidectomy (133 (55) vs 137 (56); P<0.05), and cochlear implant (147 (57) vs 126 (43); P<0.001) operation length in NSQIP was statistically significantly longer than AHC. Within the NSQIP database, there was no difference between average reported times and the RUC projected times. AHC times were longer for maxillary antrostomy but shorter for medialization laryngoplasty and cochlear implantation (all P<0.05). Inpatient setting and male sex were associated with longer operation durations in both datasets; ASA of 3 or more was also significant in the NSQIP population (aOR, 6.4; [95% CI, 4.8, 7.9]). Conclusions: Actual and predicted operation durations differ, though most do not reach the level of statistical significance. Given the impact on procedure length, the RUC may consider the effect of patient comorbid conditions or operative setting when determining the compensation for a given procedure.

49. Technical Skills Development for Early Medical Students in ENT Mentorship Program

Molly O. Meeker, BS, Columbus, OH; Ericka Erickson, MD MBA, Columbus, OH; Nolan Seim, MD MBA, Columbus, OH; Charles Elmaraghy, MD, Columbus, OH; Rishabh Sethia, MD, Columbus, OH

Educational Objective: At the conclusion of this presentation, the participants should be able to describe and review outcomes of a novel technical skills curriculum for participants of a formalized otolaryngology mentorship program.

Objectives: Fostering early experiences within otolaryngology is imperative for the professional development of applicants. We have previously established an ENT mentorship program (ENTMP) that provides medical students with early clinical exposure, research, and mentorship opportunities. The objective of this study was to assess the program's effectiveness in developing early medical student technical skills with an established curriculum over the course of the ENTMP. Study Design: Prospective cohort. Methods: Students were administered self-reported confidence surveys and previously validated skills checklists for suturing and tympanostomy tube (TT) insertion using the 5 point Likert scale prior to beginning the ENTMP. Students were instructed how to perform these procedures by faculty throughout the ENTMP. At the conclusion of the ENTMP, the same evaluations were administered. Statistical analysis was performed using two tailed T-Tests. Results: Student self-reported evaluation data (n=12) significantly improved in all but 2 domains. Notably, students reported an increase in knowledge of indications for TT insertion and performing a simple interrupted suture (p=0.011, 0.0002, respectively). Students demonstrated an objective improvement in faculty assessed evaluations. A significant increase in each domain of the suturing evaluation (n=12) was observed. Additionally, an increased percentage of students accurately completed the task checklist for TT insertion (n=9, 11% vs 64%, p=0.02). Conclusions: Following implementation of a formalized technical skills component within the ENTMP curriculum, students demonstrated a subjective increase in confidence performing these skills, and an objective improvement in both suturing and TT insertion. We believe that early introduction of technical skills is important to prepare students for clinical rotations and beyond.

50. Underestimating the Teeth: Prevalence of Odontogenic Sinusitis

Uma Mehta, BS, Farmington, CT; Tyler J. Pion, DO, Farmington, CT (Presenter); Aditya Tadinada, DDS MDentSci, Farmington, CT; Kourosh Parham, MD PhD, Farmington, CT

Educational Objective: At the conclusion of this presentation, the participants will understand the prevalence of odontogenic sinusitis is higher than previously reported and will be able to recognize CT scan characteristics on odontogenic sinusitis.

Objectives: Because of its complexity in diagnosis and somewhat niche radiographic characteristics, odontogenic sinusitis can often be missed or underreported in the clinic. Our study aims to estimate the prevalence of odontogenic sinusitis in the otolaryngology clinic. Study Design: A retrospective cohort study. Methods: Using Slicer Dicer software in Epic, approximately 100 patients who met inclusion criteria were isolated. This inclusion criteria required a visit diagnosis of chronic maxillary sinusitis (ICD10 J32.0) or acute maxillary sinusitis (ICD10 J01.00, J01.01), as well as a completed CT sinus within the preceding one year. Each CT scan was reviewed by a team consisting of an oral maxillofacial radiologist, an otolaryngologist, an otolaryngology resident, and a medical student. Results: Initial review showed 85% of CT scans with mucosal thickening in the inferior maxillary sinus were found to be associated with 1) evidence of restoration at the apex of the tooth impacting the sinus floor; 2) periapical pathology associated with maxillary teeth; 3) oroantral communication secondary to odontogenic infection; and/or 4) widening of the periodontal ligament space. Conclusions: Our data suggests a prevalence of odontogenic sinusitis higher than in the published literature. Additionally, we present key radiographic findings that the otolaryngologist should pay close

attention to when considering odontogenic sinusitis on the differential of maxillary sinusitis.

51. Incidence of Occult Malignancy Diagnosed on Histopathology in Routine Adult Tonsillectomies

Yasine Mirmozaffari, BS, Chapel Hill, NC; W. Jared Martin, BS, Chapel Hill, NC; Ezer H. Benaim, MD, Chapel Hill, NC; Meredith B. Hamby, BS, Chapel Hill, NC; Christine E. DeMason, MD, Chapel Hill, NC; Doris Lin, MD, Chapel Hill, NC

Educational Objective: To evaluate the current prevalence of occult malignancies in routine tonsillectomy specimens--particularly given the rise in HPV related oropharyngeal cancers--and to explore the implications for clinical practice in deciding which tonsil specimens warrant pathological analysis.

Objectives: Many institutions have halted tonsil pathological analysis in routine indications for tonsillectomy, such as chronic tonsilitis and sleep apnea, due to extremely low occult malignancy rates. Due to the dramatic rise in human papillomavirus (HPV) related oropharyngeal cancers in the past few decades, we aim to quantify the current prevalence of occult malignancy in routine tonsillectomy specimens. Study Design: Retrospective chart review. Methods: Using the i2b2 search tool, we queried all adult patients 18 years and older who received tonsillectomies performed in the years 2021 and 2022 from a large tertiary academic center. We conducted a review of pathological reports and extracted indications for tonsillectomy for patients with positive malignancy found on pathological analysis. Results: From 2021-2022, a total of 753 patients received tonsillectomies at one hospital system. 703 patients had resected tonsil specimens sent for routine pathology. From all specimens receiving pathological analysis, two occult malignancies were found in patients without preoperative suspicion for malignancy. The first case was a 57 year old male with a preoperative diagnosis of recurrent tonsillitis and obstructive sleep apnea found to have mantle cell lymphoma on pathology. The second case was in a 26 year old female who had a preoperative diagnosis of bilateral chronic tonsillitis found to have unilateral p16 positive squamous cell carcinoma. Conclusions: Although previous evidence supports selective histopathological examination to reduce costs and resource use, our results suggest that rare malignancies may still be missed without routine analysis. This underscores the need for institutions to carefully evaluate their pathology protocols and consider patient specific factors, especially in light of the rising incidence of HPV related oropharyngeal cancers.

52. Infectious Complications after Oral Corticosteroid Use in Otolaryngology

Margaret Mitchell, MD MS-HPEd, Boston, MA; Neil Bhattacharyya, MD, Boston, MA

Educational Objective: At the conclusion of this presentation, the participants should be able to quantify the risk of infectious complications related to oral corticosteroid (OCS) use in otolaryngology.

Objectives: Quantify the risk of infectious complications related to oral corticosteroid (OCS) use in otolaryngology. Study Design: Prospective dual cohort study. Methods: Adult patients receiving OCS prescribed by an otolaryngologist from 2018-2023 were extracted from the electronic medical record. Complications occurring within 21 days after OCS were identified by ICD-10 code and broadly categorized as septicemia, lower respiratory tract infection (LRTI), cutaneous cellulitis, herpes zoster/varicella and candidiasis. Patients were excluded if they had any complication code in the 21 days prior to OCS. The frequency and type of complication were tabulated. A control cohort of adults receiving oral antibiotics (without concurrent OCS) from an otolaryngologist was constructed and similarly analyzed. Statistical comparisons for the rate of post-OCS infectious complications were conducted with binomial regression, adjusting for age and sex. Results: 18,437 patients (mean age, 51.6 years; 57.3% female) receiving otolaryngologic OCS were identified and compared to 27,476 control patients (51.3; 54.7%). Among the OCS patients, 105 (0.57%) sustained a post-OCS infectious complication versus 184 (0.67%) among controls. The most common post-OCS infectious complications were pneumonia (52), candidiasis (48), sepsis (9), zoster (8) and cellulitis (8). Adjusting for age and sex, the relative risk ratio for an infection arising after OCS was 1.18 (95% confidence interval 0.93-1.50; p=0.178). Conclusions: Post-OCS infectious complications in otolaryngology occur at an infrequent rate of approximately 1 in 200 prescriptions. Given the clinical benefits of OCS, the risk of infectious complications generally compares favorably. These data may help in the counseling of patients fearful of post-OCS infectious complications.

53. Performance of Large Language Models in Answering Otolaryngology Clinical Questions in Foreign Languages

Eugene Oh, MSE, Los Angeles, CA; Arthur Wu, MD, Los Angeles, CA; Gene Liu, MD, Los Angeles, CA; Matthew Lee, MD, Los Angeles, CA; Dennis Tang, MD, Los Angeles, CA

Educational Objective: At the conclusion of this presentation, the participants should be able to recognize the significant differences in LLM's performance across languages and understand the need for advanced LLM training in non-English contexts to enhance patient care.

Objectives: Despite extensive research on large language models (LLMs), their performance in clinical contexts across different languages remains understudied. This study aims to evaluate LLM's ability to answer commonly asked otolaryngology clinical questions in foreign languages, focusing on accuracy, completeness, and similarity to English. Study Design: Comparative study evaluating ChatGPT-4's responses to frequently asked otolaryngology clinical questions in Chinese, Korean, and Spanish against English answers adapted from ENTHealth and AAO-HNSF Clinical Practice Guidelines. Methods: Eighteen commonly asked otolaryngology questions (3 from each of 6 subspecialties: pediatrics, otology, rhinology, laryngology, head and neck, and plastics) were translated into Chinese, Korean, and Spanish. Three native speaking clinicians per language inputted the translated questions into ChatGPT-4 and rated the responses against the English gold standard answers using a 5 point Likert scale for accuracy, completeness, and similarity to English. Results: Two way ANOVA revealed significant differences across all languages in terms of accuracy, completeness, and similarity to English ($p = 0.003$). ChatGPT-4 responses in Spanish were the most accurate, complete, and similar to English, followed by Korean, with Chinese performing the lowest. Tukey's HSD analysis confirmed significant differences in all domains except for similarity to English between Korean and Spanish ($p = 0.51$). Fleiss' kappa showed slight agreement among Korean raters and low agreement across Chinese and Spanish. Conclusions: LLM's ability to provide accurate and comprehensive clinical information varies significantly across languages. These findings suggest that further research and improvements are necessary before LLMs can reliably support the needs of non-English-speaking patients.

54. Surgical Management of Obstructive Sleep Apnea, and Its Relationship with Depression

Braden B. Oldham, BS BA, Charleston, SC; Craig D. Salvador, BS, Charleston, SC; Lucas Licaj, BS, Charleston, SC; Nicolas Poupore, MD, Charleston, SC; Mohamed Abdelwahab, MD PhD, Charleston, SC

Educational Objective: At the conclusion of this presentation, the participants should be able to appreciate the impact of obstructive sleep apnea (OSA) and its surgical management has on the severity of depressive symptoms in adults.

Objectives: Primary objective is to assess the relationship between severity of depression pre- and post-surgical sleep procedures in patients with OSA. This included analyzing the associations between preoperative sleepiness and anxiety, and determining the effect treating OSA surgically has on a patient's severity of depression. Study Design: Prospective cohort study. Methods: Patients scheduled for an array of OSA corrective procedures (categorized as maxillomandibular, nasal airway, soft palate, and tongue surgeries), completed preoperatively polysomnography studies (PSG), Becks Depression Inventory-II (BDI-II) and Epworth Sleepiness Scale (ESS) surveys. One month post-operation, patients completed BDI-II and a PSG. 4% Apnea hypoxia Index (AHI) and oxygen desaturation index (ODI) averages were determined. Pearson correlation coefficients were used to assess relationships between preoperative and postoperative BDI-II scores, as well as correlations between preoperative BDI-II and ESS. Paired t-tests were conducted to compare preoperative and postoperative BDI-II scores, AHI, and ODI scores. Independent sample t-tests were performed analyzing differential effects on sexes and surgical procedures. Results: A total of 30 participants diagnosed with OSA completed preoperative PSG, BDI-II, and ESS assessments; and postoperative BDI-II and a PSG. Mean preoperative and postoperative AHI was 34.4 and 10.4 respectively; mean pre and postoperative ODI was 27.2 and 11.2. Preoperative BDI-II scores were positively correlated with postoperative BDI-II scores ($r=0.836$, $p<0.0001$), and sleepiness scores (ESS) ($p<0.001$; $r=0.572$, $p<0.01$). A reduction in BDI-II moderately correlated with preoperative BDI-II scores ($r=0.615$, $p<0.001$) with a significant reduction in BDI-II scores post-operation (pre-mean=10.07, post-mean=6.87, $p<0.01$). There were no significant differences in BDI-II pre- and post-operation change between sexes or type of OSA surgical treatment performed. Conclusions: Our finding suggests treatment of OSA through surgical procedures significantly reduces patients' depression levels by one month postoperatively. The severity of OSA sleepiness symptoms is positively correlated with higher preoperative depression, as measured by BDI-II scores. While patients with higher preoperative depression are more likely to have elevated postoperative depression levels, surgical treatment is associated with a greater reduction in depression overall. These findings suggest surgical treatment of OSA can lead to meaningful improvements in patients' mental health.

55. Assessing the Clinical Management of Acute Otitis Externa: A Retrospective Review

Lawrence F. Oppenheimer-Velez, MD, San Juan, PR; Javier A. Vila-Ortiz, BS, San Juan, PR (Presenter); Carlos

E. Crespo-Borges, BS, San Juan, PR; Gabriela C. Pomales-Diaz, BS, San Juan, PR; Edgar Del Toro-Diez, MD, San Juan, PR; Jeamarie Pascual-Marrero, MD, San Juan, PR

Educational Objective: At the conclusion of this presentation, the participants should be able to appreciate how misdiagnosis of acute otitis externa (AOE) may lead to patient overtreatment and general mismanagement.

Objectives: Assess the clinical management of patients presenting with AOE at our medical center. Study Design: Retrospective cross-sectional study. Methods: A retrospective review of AOE patient medical records (n=226) was conducted. Eligibility criteria was based on ICD-10 diagnosis between January 2018 to December 2022. Data on patient demographics, clinical presentation, and management strategies were analyzed. Results: Preliminary findings indicate significant mismanagement of patients presenting with AOE. Specifically, an 89% misdiagnosis rate was found upon specialist evaluation at our quaternary care center. AOE misdiagnosis due to suspected acute mastoiditis (AM) alone accounted for approximately 63% of these redundant referrals. Radiologic detected mastoid effusion was the primary reason cited for suspected AM. All misdiagnosed patients had completed unnecessary oral antibiotic regimens and CT imaging. Conclusions: This study highlights the importance of a careful and comprehensive evaluation of patients presenting with AOE in order to mitigate healthcare burden and costs associated with its misdiagnosis and mismanagement. The use of aural toileting, ototopical agents, and analgesics are the recommended first line treatments for AOE upon diagnosis, whereas oral antibiotics and CT imaging are contraindicated due to the increased risk of antibiotic resistance and damage to local radiosensitive organs. While mastoid effusion is a common radiologic finding among AOE patients, its clinical significance shouldn't be overinterpreted barring additional definitive evidence of AM. Future work may address a more comprehensive diagnostic algorithm for primary care centers and emergency departments to enhance clinical decision making.

56. Surgeon Ergonomics during In Office Laryngoscopy: Comparison between Conventional and Pistol Grip Techniques

Subin Park, BHSc, Toronto, ON Canada; R. Jun Lin, MD FRCSC MSc, Toronto, ON Canada (Presenter); Patrick MacInnis, Msc, Toronto, ON Canada; Rosane Nisenbaum, PhD, Toronto, ON Canada

Educational Objective: At the conclusion of this presentation, participants should understand the ergonomic differences between conventional and pistol grip techniques for nasopharyngoscopy/laryngoscopy, as well as the importance of improving ergonomics in otolaryngological practice.

Objectives: Survey research shows that 97% of otolaryngologists experience physical symptoms throughout their careers, yet ergonomic risks for in office procedures remain underexplored. This study compares upper body ergonomics between conventional and pistol grip techniques during routine nasopharyngoscopy and laryngoscopy. Study Design: Prospective observational study. Methods: Ten otolaryngology staff and residents, along with 400 patients, were enrolled. Each practitioner performed 40 procedures--20 using the conventional grip and 20 with the pistol grip. Upper body ergonomics were assessed using the Rapid Upper Limb Assessment (RULA) by a neutral observer. Practitioner demographics (age, height, handedness, musculoskeletal injury history) and patient data (sitting height, BMI) were collected. Descriptive statistics and linear mixed models with random intercepts were used to analyze RULA scores between the two techniques. Results: A total of 403 procedures were observed, with 211 using the conventional grip and 192 with the pistol grip. RULA risk categories indicated that 77.08% of pistol grip procedures were classified as low ergonomic risk, compared to 58.29% for the conventional grip. Mean RULA scores were 4.1 +/- 1.3 for the pistol grip and 4.7 +/- 1.3 for the conventional grip. The analysis showed a significant mean difference of 0.65 between the two groups (95% CI: 0.48-0.82, $p<0.0001$). Conclusions: The pistol grip technique showed lower ergonomic risk than the conventional grip. However, both techniques averaged a RULA score of 4, suggesting possible ergonomic concerns. Further studies are needed to evaluate the feasibility and broader adoption of the pistol grip across various ENT endoscopes.

57. Understanding Factors Influencing Females' Career Choice in Otolaryngology: A Survey Based Approach

Alisha Ria Pershad, BS, Washington, DC; Esther Lee, DO, Washington, DC; Neelima Tummala, MD, Washington, DC; Punam Thakkar, MD, Washington, DC

Educational Objective: At the conclusion of this presentation, the participants should be able to recognize that despite efforts to facilitate entry into otolaryngology, experiences in medical school among current residents illustrate persistent gender disparities. Participants should identify and understand specific factors that can be targeted to

build more diverse and inclusive residency programs.

Objectives: Despite increasing efforts to improve gender equity in otolaryngology, there remains a paucity of literature evaluating factors that influence female identifying residents' career choice in the field. We aimed to survey medical school experiences that affected current U.S. residents' decisions to pursue a career in otolaryngology to better understand the current state of gender disparities in the field. Study Design: Cross-sectional survey. Methods: A voluntary IRB approved survey was distributed to U.S. residency program directors and program coordinators to distribute to their residents; responses between male and female identifying residents were compared. Results: A total of 137 complete surveys were included; 78 (58%) respondents identified as female with mean age of 29.7 +/- 2.8 years. Factors that deterred female respondents from pursuing otolaryngology were board scores ($p<0.05$), concerns about diversity ($p<0.05$), and concern for time limitations for raising a family ($p<0.0005$). Female respondents were less likely to agree that otolaryngology is a gender neutral field ($p<0.001$), more likely to have witnessed or experienced gender discrimination ($p<0.05$) and have their physical abilities questioned ($p<0.05$), as compared to their male counterparts. Having a same gender mentor significantly impacted career choice ($p<0.0005$). Female respondents were more likely to receive negative comments about ability to raise children as a surgeon in training ($p<0.0005$), but this did not impact the decision to pursue otolaryngology. Conclusions: Despite efforts to facilitate entry into otolaryngology, experiences in medical school among current residents illustrate persistent gender disparities. The results of this study identify specific factors that can be targeted to build more diverse and inclusive residency programs.

58. Disposition of Patients and Length of Stay for Initial Tracheostomy in an Academic Hospital

Taylor Ann Pitzl, BS, Omaha, NE; Jayme R. Dowdall, MD, Omaha, NE; Kaeli Samson, MPH MA, Omaha, NE; Jana Wardian, PhD MSW, Omaha, NE; Dan Pierce, MD, Omaha, NE

Educational Objective: At the conclusion of this presentation, the participants should be able to understand factors that make discharge difficult for tracheostomy patients and identify possible solutions to these challenges.

Objectives: Midwestern tracheostomy patients face excess length of stay (LOS) which increase healthcare costs. The reasons for these prolonged stays have not been well described. We hypothesize this may be due to several factors including discharge disposition and insurance status. Study Design: IRB approved retrospective chart review. Methods: 353 records of patients undergoing initial tracheostomy placement in an academic hospital were reviewed for LOS, discharge delays and disposition. Discharge delay was defined as the patient remaining in hospital for 3 or more days after being deemed medically stable for discharge (MSD). Data are summarized with medians and interquartile ranges (IQRs). Results: 18.2% of patients were decannulated and 16.8% expired prior to discharge. Of the 65% remaining patients discharged with tracheostomy, 26% faced increased LOS after being medically stable for discharge with the median LOS of 14 days after tracheostomy placement. Post hospital discharge includes acute rehab facility 40 (11.4%), home 44 (12.5%), hospice 9 (2.6%), long term acute care (LTAC) 123 (34.9%), prison 1 (0.3%), and skilled nursing facility (SNF) 4 (1.1%). Specific facilities, such as prison, long term care and SNF were associated with increased LOS. SNF LOS varied widely from 1.5- 81 days after medically stable for discharge. When experiencing a delay due to insurance authorization, 78% were delayed for more than 3 days after MSD. 24.9% of discharge locations were discrepant between manual review and EHR report. Conclusions: Improved understanding of LOS, timeline, and disposition of tracheostomy patients can lead to better planning. Early discharge planning could potentially minimize avoidable hospital days.

59. Impact of Selective COX-2 Inhibitors in Postoperative Pain Regimen on Narcotic Usage and Pain Control for Benign Oropharyngeal Surgery

Alana Platukus, BS, Philadelphia, PA; Jared Robinson, BA, Philadelphia, PA; Jaehee Kim, BA, Philadelphia, PA; Praneet Kaki, BS, Philadelphia, PA; Erin Creighton, MD, Little Rock, AR; Colin Huntley, MD, Philadelphia, PA

Educational Objective: At the conclusion of this presentation, the participants should be able to discuss the efficacy of selective COX-2 inhibitors, such as Celebrex, in reducing pain and reliance on opioids postoperatively.

Objectives: To establish how the addition of Celebrex to the standard of care postoperative pain regimen affects pain scores and opioid consumption in benign oropharyngeal surgery, such as tonsillectomy and adenoidectomy (T&A) and modified uvulopalatopharyngoplasty (UPPP). Study Design: Single institution prospective cohort study.

Methods: Patients undergoing T&A or UPPP (May - October 2024) were enrolled and completed surveys at postoperative days 1, 5, and 10 to assess pain scores and opioid use. Cohorts were based on the prescription of Celebrex. The non-Celebrex cohort was obtained via retrospective review of patients who underwent similar procedures (December 2020 - January 2023). Wilcoxon rank sum and chi squared tests were performed using RStudio. Results: Seventy-eight patients were included (33.0 years, 67% female, 55% white). The Celebrex cohort (N = 35) consumed an average of 106.2 mL (SD = 50.1) of liquid opioids, and the non-Celebrex cohort (N = 43) received an average of 121.0 mL (SD = 92.0) (P = 0.8). There were no significant differences in pain scores reported on postoperative days 1, 5, or 10 (P = 0.5, P = 0.15, P = 0.8, respectively). Conclusions: Celebrex use postoperatively resulted in a lower average amount of opioids consumed, although the difference was not statistically significant. Our data demonstrates that postoperative Celebrex was not associated with significant differences in patient reported pain scores. Thus, pain was equally controlled regardless of Celebrex consumption. Further investigation is warranted with a larger sample size to determine the efficacy of Celebrex in postoperative pain management after benign oropharyngeal surgery.

60. Creating a Sense of Belonging in Otolaryngology - Head & Neck Surgery: A Department Wide Assessment of Diversity, Equity, and Inclusion Culture

Andrew D.P. Prince, MD, Ann Arbor, MI; Robbi A. Kupfer, MD, Ann Arbor, MI; Michael J. Brenner, MD, Ann Arbor, MI; Mark E.P. Prince, MD, Ann Arbor, MI; Mark A. Zacharek, MD, Ann Arbor, MI

Educational Objective: At the conclusion of this presentation, the participants should recognize the importance of assessment and development of a culture of belonging in their department.

Objectives: To assess perceptions of otolaryngology department learners, faculty, and team members on diversity, equity, and inclusion (DEI), focusing on a culture of belonging. Study Design: Survey analysis of an academic otolaryngology-head and neck surgery department. Methods: The validated ADVANCE climate survey was adapted for otolaryngology and disseminated among department members, including clinical and nonclinical employees, trainees, and faculty. The survey comprised 22 items scored on a 5 point Likert scale, 11 items scored on a 100 point scale, 1 yes/no question, 3 free text responses, and 10 demographic questions. The survey captured perceptions of departmental culture, inclusivity, and equity. Results: Among 116 respondents, participants identified as female (74%), heterosexual (84%), and Caucasian (75%). Median scores for positive descriptors (friendly, respectful, collegial, and collaborative) were all greater than 90. The most negatively rated descriptor was elitist (mean = 19.6). Respondents varied on perception that rewards (34% disagreed vs. 32% agreed) and compensation (37% disagreed vs. 27% agreed) were equitable. Underrepresented in medicine respondents reported feeling they had to work harder to be valued (p = 0.001) and had greater concern around equitable care access (p=.025) and quality (p=.007). Female respondents perceived less voice in decision making (p=0.048), and less equitable expectations for research (p=0.003) and workload (p=0.003). Respondents who identified as LGBT, having disabilities, or nonclinical reported feeling less valued and were less likely to describe the department as friendly, collegial, and respectful. Conclusions: The DEI climate survey highlighted disparities in experiences, underscoring the need for initiatives to foster an equitable, inclusive workplace and for ongoing assessment.

61. Publication Misrepresentation among Otolaryngology Residency Applications

Siri Ravuri, BS, Pittsburgh, PA; Micah Harris, MD, Pittsburgh, PA; Danny Elias, BS, Pittsburgh, PA; Brandon Aguilar, BS, Pittsburgh, PA; Alex Rothstein, BA BM, Pittsburgh, PA; Noel Jabbour, MD MS, Pittsburgh, PA

Educational Objective: Recognize the state of publication misrepresentation amongst residency applicants and learn factors associated with publication misrepresentation.

Objectives: This study aims to assess the extent of publication misrepresentation among otolaryngology applicants and identify characteristics associated with misrepresentation in the 2023-2024 application cycle. Study Design: Residency applications to our otolaryngology program from the 2023-2024 cycle were reviewed, focusing on peer reviewed journal publications listed as “accepted”, “provisionally accepted”, or “in print”. Methods: Publications listed as “submitted” were excluded. Verification was conducted via PubMed, Google Scholar, and electronic journals. Unverifiable publications were considered misrepresented. Applicant characteristics included gender, medical school, Alpha Omega Alpha status, USMLE step 2 scores, and graduation year. Multivariate logistic regression identified significant predictors of misrepresentation. Results: 2125 publications were reported by 321 of 363 applicants (88.4%). 12 applicants (3.31%) misrepresented 24 publications (1.13%). Six were not peer reviewed, one applicant was incorrectly listed as first author, and 17 were unverifiable. Multivariate logistic regression showed that lower

USMLE step 2 score was a significant predictor of misrepresentation (odds ratio 0.94, 95% confidence interval = 0.89-0.99, P = 0.04). In a previous analysis our group found that of the 2009-2010 cycle applications, 17 applicants (9.8%) misrepresented 22 publications (5.1%); male gender and being an international medical graduate predicted misrepresentation. Conclusions: Despite the increasing emphasis on research in the setting of pass/fail grades, misrepresentation of research publications remains infrequent among otolaryngology residency applicants. Step 2 score may prompt applicants to misrepresent publications to increase research output.

62. Geographic Variations in Outcomes for Open and Closed Mandible Fracture Repair

Lucy Revercomb, BS, Newark, NJ; Aman M. Patel, BS, Newark, NJ; Mehdi S. Lemdani, BA, Newark, NJ; Hannaan S. Choudhry, MD, Newark, NJ; Ghayoour S. Mir, DO, Newark, NJ; Andrey Filimonov, MD PharmD, Newark, NJ

Educational Objective: At the conclusion of this presentation, the participants should be able to better understand the associations between hospital region and patient safety indicators for inpatients with mandible fractures.

Objectives: Patient safety indicators (PSIs) are preventable postoperative complications used to compare the outcomes of care provided. Our study evaluates the associations between hospital region and PSIs for inpatients with mandible fractures. Study Design: Retrospective database study. Methods: The 2012-2015 National Inpatient Sample (NIS) was used to identify adult inpatients with a primary diagnosis of mandible fracture. PSIs were identified with ICD-9 codes as defined by the Agency for Healthcare Research and Quality. Hospital region is defined by NIS via national census division. Univariable analysis was used to identify associations by hospital region. Results: 48,760 inpatients met inclusion criteria and were treated at hospitals located in the Northeast (NE) (16.2%), Midwest (MW) (14.7%), South (30.7%), and West (18.4%). The majority were male (81.8%) and without a PSI (91.0%). Mean age was 36.8 years. Poor outcomes in patients with PSIs were associated with NE (OR 2.0, 95% CI 1.5-2.8), MW (OR 3.3, 95% CI 2.6-4.2), South (OR 1.6, 95% CI 1.3-2.0), and West (OR 3.0, 95% CI 2.3-3.9) hospital regions (p less than 0.001). Mortality in patients with PSIs were associated with NE (OR 23.6, 95% CI 10.6-52.9), MW (OR 33.8, 95% CI 12.7-90.3), South (OR 48.3, 95% CI 18.5-126.5, p<0.001), and West (100.0%) hospital regions. Conclusions: For inpatients with mandible fractures, PSIs were associated with higher odds of poor outcomes and mortality in the NE, MW, South, and West. Higher odds of poor outcomes with PSIs were more associated with the MW and West.

63. Impacts of HGNS on Hypoxic Burden

Alex Rothstein, BA BM, Pittsburgh, PA; Chihun Han, MD, Pittsburgh, PA; Ryan Soose, MD, Pittsburgh, PA; Patrick Strollo Jr., MD, Pittsburgh, PA; Thomas Kaffenberger, MD, Pittsburgh, PA

Educational Objective: At the conclusion of this presentation, the participants should be able to appreciate the use of hypoxic burden in evaluating the effectiveness of surgery for sleep apnea.

Objectives: Hypoxic burden (HB) is a novel metric used to characterize the physiological impact of obstructive sleep apnea (OSA). Prior studies have shown HB to strongly correlate with cardiovascular (CV) risk. While the hypoglossal nerve stimulator (HGNS) has been shown to effectively reduce AHI, its impact on HB remains underexplored. This study examines the effect of HGNS on subjective and objective outcomes in OSA, including HB. Study Design: We conducted a retrospective review of 72 patients who underwent HGNS and completed home sleep apnea testing (HSAT) before and after surgery at our institution. Data collected included demographics, pre and postoperative AHI, body mass index (BMI), oxygen desaturation index (ODI), and Epworth Sleepiness Scale (ESS). Methods: HB was calculated using the SpO2 signal from sleep studies at baseline and post-optimization of HGNS therapy. Treatment success was evaluated using the Sher20 criteria, and the paired Wilcoxon test and Wilcoxon rank sum test were used to assess outcomes. Results: The mean age and BMI of the patients were 64.5 years and 28.7 kg/mÂ², with 76.1% being male. The Sher20 success rate was 52.8%. Statistically significant reductions were seen in AHI (33.1 to 17.8, p less than 0.001), ESS (11.4 to 7.7, p less than 0.001), HB (102.5 to 62.9, p less than 0.001), and ODI (29.5 to 14.8, p less than 0.001) after HGNS. Significant differences were observed in ODI and HB changes between Sher20 responders and non-responders, while ESS changes were not significantly different. Conclusions: HGNS resulted in significant improvements in both objective and subjective outcomes of OSA, including HB. These findings suggest that HGNS may be useful in alleviating physiological impacts associated with OSA.

64. Combined Effects of Tobramycin and Lipopolysaccharide on Auditory and Vestibular Function: A Preclinical Animal Study

Nicole Kathleen Rud, BA, Omaha, NE; Alyssa Burd, BS, Omaha, NE; Sarath Vijayakumar, PhD, Omaha, NE; Jonathan P. Fleegel, BS, Omaha, NE

Educational Objective: At the conclusion of this presentation, the participants should be able to describe the combined effects of tobramycin and lipopolysaccharide on auditory and vestibular function as demonstrated in a preclinical animal study, including the specific changes observed in auditory brainstem response, distortion product otoacoustic emissions, and vestibulosensory evoked potentials.

Objectives: To assess the effects of tobramycin, LPS, and their combination on auditory and vestibular functions in a mouse model. Study Design: This was an experimental comparative animal study involving four treatment groups: vehicle control, LPS alone, tobramycin alone, and combined tobramycin plus LPS. Methods: Auditory function was evaluated using auditory brainstem response (ABR) and distortion product otoacoustic emissions (DPOAE). Vestibular function was assessed through vestibulosensory evoked potentials (VsEP). Measurements included absolute thresholds, P1-N1 amplitude, and P1 latency across various frequencies and intensity levels. Results: The tobramycin plus LPS group showed significantly elevated DPOAE thresholds at 16 kHz and threshold shifts in ABR at high frequencies (22-64 kHz) compared to controls. VsEP analysis revealed elevated thresholds and reduced P1-N1 amplitudes in the combined treatment group, indicating impaired vestibular function. Conclusions: This study found that both tobramycin and LPS significantly impair auditory and vestibular functions. Their combination led to greater effects, evident in elevated thresholds and reduced P1-N1 amplitudes across both systems. These findings demonstrate the synergistic ototoxic effects of inflammation and aminoglycosides, highlighting the need for careful consideration of such interactions in clinical settings.

65. Factors Predicting a Successful Otolaryngology Match Compared with other Surgical Specialties

Samuel S. Salib, BS, Elk Grove, CA; Layla Ali, BA, Elk Grove, CA; Adam Y. Ali, BA, Elk Grove, CA; Hannah C. Wolfsen, BS, Elk Grove, CA; Brian Kwan, BS, Elk Grove, CA; Michael S. Wong, MD, Elk Grove, CA

Educational Objective: After this presentation, the participants should be able to understand the trends of which factors are most important in a successful otolaryngology match and how those factors have changed across various surgical specialties.

Objectives: This study aims to investigate how metrics for accepted residency applicants have changed within the otolaryngology match and compare how they have changed across various surgical specialties and nonsurgical specialties. Study Design: We conducted a retrospective analysis of all NRMP match annual main residency match results and data from 2013 to 2023 for various specialties including otolaryngology, orthopedic surgery, neurosurgery, pediatrics, and pathology. Various metrics which could impact residency match outcomes were identified. Methods: We identified four demographic factors (age group, first generation, gender, and underrepresented in medicine), two curricular factors (step 2 score and clerkship honors) and four noncurricular factors (number of research experiences, abstracts and poster presentations, volunteer experiences, and leadership positions) that may be indicative of underlying trends or impact the residency match outcome. A linear regression analysis of average noncurricular factors over time (in years) was conducted. Results: Between 2015 and 2021 for otolaryngology, the average number of citations required for successful matching has increased over time from 8.3 to 16.2 (predictor p is less than 0.001, R squared equals 0.9292), and the average number of research experiences for successful experiences increased over time from 4.6 to 6.6 (predictor p equals 0.0101, R squared is equal to 0.7643). For other surgical specialties like orthopedic surgery and neurosurgery, we saw similar changes. However, volunteering experiences have also been positively correlated with successful matching (orthopedic surgery: predictor p is less than 0.01, R squared is equal to 0.662, neurosurgery: predictor p is less than 0.001, R squared is equal to 0.8868). Additionally, nonsurgical specialties like pathology and pediatrics saw similar changes as orthopedic surgery and neurosurgery. Conclusions: There has been an increased emphasis on noncurricular requirements in matching for otolaryngology and other specialties, even before USMLE step 1 became pass/fail, however in otolaryngology and other surgical subspecialties, there has been an even bigger emphasis on research compared to other specialties. Therefore, there is an increased demand for medical students to be productive in research. Further studies should be done on the impact this is having on the quality of matched students to otolaryngology and the impact it has on medical student curricular and wellness measures. Next, we seek to create a prediction model for the impact of each variable on a successful otolaryngology match.

66. Factors Influencing Readmission for Patients with Peritonsillar Abscess

Nathan Gabriel Sattah, BA, Durham, NC; Joshua K. Kim, BS, Durham, BC; Vince M. D'Anniballe, MS, Durham, NC; Eric J. Formeister, MD, Durham, NC; , ,

Educational Objective: At the conclusion of this presentation, the participants should be able to describe the factors that influence readmission in patients with peritonsillar abscess.

Objectives: The purpose of this study was to characterize factors influencing 30 day readmission for patients presenting to the emergency department (ED) with peritonsillar abscess (PTA). Study Design: Retrospective cohort study at an academic referral center. Methods: A single institution retrospective review of patients who presented to the emergency department with PTA between January 2015 and June 2024 was performed. Results: Overall, 2,904 patients with PTA were identified, with 1,058 (50.5%) females, a median age of 32.9 [IQR 24.5-46.3], and a median body mass index of 26.2 [IQR 22.5-32.5]. Incision and drainage (I&D) was performed in 351 (16.8%) patients, and 20 (0.7%) patients were readmitted within 30 days of discharge. On bivariate analysis, tobacco use and Charlson Comorbidity Index were significantly associated with readmission ($p<0.05$). Undergoing I&D was not associated with increased readmission rates ($p=0.361$). Logistic regression demonstrated that a higher Charlson Comorbidity Index independently raised readmission rates (OR=1.72, 95% CI=1.18-2.52, $p=0.005$), while I&D (OR=0.72, 95% CI=0.19-2.26, $p=0.587$), BMI (OR=0.95, 95% CI=0.87-1.02, $p=0.168$), and age (OR=0.99, 95% CI=0.96-1.03, $p=0.704$) did not exert independent effects. A subgroup analysis of 132 patients with abscess dimensions on imaging revealed that the largest abscess dimension (+/- S.D.) averaged 2.4 +/- 0.9 cm. Abscess size (OR=0.08, 95% CI=0.00-1.37, $p=0.229$) and I&D (OR 0.63, 95% CI=0.02-26.84, $p=0.782$) did not independently increase the likelihood of readmission. Conclusions: Smoking and a higher comorbidity burden may lead to a less favorable recovery and increased risk of readmission after PTA. In this analysis, I&D was not superior to medical management for preventing readmission.

67. WITHDRAWN - Epidemiology of Barbell Weightlifting Related Head and Neck Injuries in the United States: A 10 Year Analysis of National Injury Data

Shiven Sharma, JD MBe, New York, NY; Luke Reardon, BS, Harrogate, TN (Presenter); Li-Xing Man, MSc MD MPA, Rochester, NY; Marita S. Teng, MD, New York, NY; Michele M. Carr, MD DDS MEd PhD, Buffalo, NY

68. Land Elevation and Thyroid Cancer in U.S. Metropolitan Statistical Areas Using Median Elevations Derived from Geographic Information Systems

Shiven Sharma, JD, New York, NY; Maaike van Gerwen, MD PhD, New York, NY; Mathilda Monaghan, MPH, New York, NY; Keshav Sharma, HBHSc, Detroit, MI; Nate Ji, BS, New York, NY; Dany Alkurdi, AB, New York, NY

Educational Objective: The take home message is that environmental factors associated with land elevation, such as natural background radiation, oxygen concentration, and barometric pressure, may significantly influence thyroid cancer incidence. Understanding these relationships is crucial for identifying potential risk factors and developing more targeted public health interventions, particularly in regions with varying elevations. This study emphasizes the importance of considering environmental variables when assessing cancer risk and underscores the need for further research to clarify these complex interactions.

Objectives: This study aims to elucidate the relationship between land elevation and thyroid cancer incidence through the environmental factors of natural background radiation (NBR), oxygen concentration (OC), and barometric pressure (BP). Study Design: Ecological study. Methods: Thyroid cancer incidence rates from 1999 to 2020 in U.S. metropolitan statistical areas (MSAs) were obtained from the CDC Wonder Database. Median land elevation was sourced from the U.S. Geological Survey and Department of Agriculture, while NBR, OC, and BP were estimated using reputable online tools. Spearman's rank correlation analysis and Mann-Whitney U tests were performed to assess the impact of the aforementioned environmental factors on thyroid cancer incidence. Results: Spearman's rank correlation and Mann-Whitney U Test showed inverse correlations between thyroid cancer incidence and altitude, NBR, OC, and BP. All Mann-Whitney U test results were statistically significant, except for BP's effect on thyroid cancer incidence. Conclusions: In conclusion, while our study underscores significant relationships between land elevation and cancer incidence, particularly thyroid cancer, it also highlights the complexity of these interactions. Continued research, incorporating advanced analytical techniques and a broader range of factors, is essential to unravel the intricate web of environmental and demographic influences on cancer incidence.

69. Gender Differences of Self-Reported Key Characteristics in Otolaryngology Residency Applications

Timothy Shim, MD, Philadelphia, PA; Alexander Thomson, BS, Philadelphia, PA; Sanjena Venkatesh, BS, Philadelphia, PA; Tiffany Chao, MD, Philadelphia, PA

Educational Objective: At the conclusion of this presentation, the participants should be able to explain differences in self-reported key characteristics in otolaryngology residency applications.

Objectives: Otolaryngology residency applicants self-report key characteristics that align with experiences showcased in their application. These characteristics include both agentic traits (adjectives characterizing leadership and success) and communal traits (descriptors primarily concerning the welfare of others). The purpose of this study was to examine gender differences in self-reported characteristics amongst otolaryngology residency applicants. Study Design: A retrospective study was conducted of applicants that applied to otolaryngology at our institution in 2024. Methods: A novel AI algorithm was developed to examine otolaryngology applications received by our institution. The differences in self-reported characteristics were noted between genders. Results: The machine learning algorithm analyzed 200 applications that our institution received. 112 applicants were female, and 88 applicants were male. Male applicants had a higher likelihood of reporting the following characteristics: ingenuity and innovation (+27%), ethical responsibility (+14%), teamwork and leadership (+6%). Female applicants had a higher likelihood of reporting the following characteristics: empathy and compassion (+18%), reliability and dependability (+14%), cultural humility and awareness (+12). Conclusions: We demonstrate a significant difference in self-reported key characteristics by gender in otolaryngology residency applicants. Males were more likely to report agentic traits while females more likely to present communal adjectives. The association of agentic and communal traits with male and female gender respectively may reflect broader societal or occupational stereotypes; however, further investigation is needed to determine how these traits are perceived by applicants and programs as important for success in residency.

70. An Innovative Model for Preclinical Otolaryngology Exposure: Impact of an Externship Program on Career Interest and Understanding of the Specialty

Elliott M. Sina, BA, Philadelphia, PA; Leonard Estephan, MD, Philadelphia, PA; Andrew Corr, MD, Philadelphia, PA; Colin Huntley, MD, Philadelphia, PA; Richard Goldman, MD, Philadelphia, PA; David Cognetti, MD, Philadelphia, PA

Educational Objective: At the conclusion of this presentation, participants should be familiar with the implementation and outcomes of a preclinical otolaryngology externship and its potential impact on early career interest in ENT.

Objectives: Medical students often lack clinical exposure to otolaryngology until later in training. Early exposure is critical for making informed specialty career decisions and enhancing residency application success. To address this, a novel otolaryngology externship program for preclinical medical students was developed and evaluated. Study Design: Program development, implementation, and prospective survey study. Methods: Preclinical medical students were selected by a panel of 4th year students applying into ENT to participate in the program during winter or summer academic break. To date, 18 first and second year medical students (3 cohorts of 6 students) have participated in the 1 week surgical externship, which included morning rounds, clinic sessions, resident led surgical skills workshops, and surgical cases. Pre- and post-program 15 question surveys assessed students' interest in and understanding of otolaryngology, and comfort in the operating room using a Likert scale [1=strongly disagree; 5=strongly agree]. Data were analyzed using nonparametric Wilcoxon matched pairs signed rank tests. Results: Sixteen participants (88.9%) with a mean age of 23.9 years and female predominance (62.5%) completed both surveys. Post-program survey questions pertaining to an otolaryngology career, resident/faculty interactions, operating room etiquette, and head and neck anatomy demonstrated higher scores compared to baseline ($p<0.001$ for all comparisons). Average total survey scores were increased following the externship (43.2 vs. 31.9, $p<0.0001$). Most students (87.5%) reported increased interest in pursuing otolaryngology following participation. Conclusions: Early exposure to otolaryngology through this novel externship significantly enhanced student understanding and interest in the field, demonstrating a tangible impact on students' career decision making. This is the first such program within the field of otolaryngology that has been formally evaluated or reported in the literature. With its student driven structure and minimal reliance on departmental resources, this model may be effectively implemented and replicated at other institutions nationwide.

71. Innovative Mentorship Structure in an Otolaryngology Residency Program

Hannah Renee Turbeville, MD PhD, Ann Arbor, MI; Shannon Flynn Rudy, MD, Ann Arbor, MI; Robbi Ann Kupfer, MD, Ann Arbor, MI

Educational Objective: At the conclusion of this presentation, the participants should be able to understand the benefits of blending a structured mentorship program with organically created relationships and implement aspects of our program in their own institutions, such as providing customized discussion topics for each year of training.

Objectives: Design and test an innovative program to foster and strengthen mentor/mentee relationships between residents and faculty. We hypothesized that implementation would improve resident satisfaction with the mentor selection process and perceived benefit of the relationship. Study Design: A mentorship needs assessment was conducted with rising second year residents in our program. Respondents identified difficulty with mentor selection and lack of clarity in meeting structure and frequency as areas for improvement. A program was designed to blend the benefits of a structured program with organically created relationships. A list of participating faculty mentors was provided to residents at the start of their intern year to allow evaluation of mentorship potential during the year. An informal meeting was held at the year's end with the associate program director to review interns' experiences and formalize mentor selection. Each mentor is limited to two mentees to maximize the mentee experience and minimize time burden on the mentor. Quarterly meetings were prompted by email with suggested meeting topics, customized to each training year and for each quarter. Methods: Satisfaction across multiple domains was assessed with twice yearly surveys. The level of agreement with descriptive statements was graded on a Likert scale from one to five. Average satisfaction scores were compared year to year with the Wilcoxon signed ranks test. Results: From 2022 (n=15) to 2024 (n=11), resident satisfaction with the mentor selection process improved from 3.47 to 3.91 (W=0, p=0.005, r=0.85) and satisfaction with the mentoring relationship improved from 4.13 to 4.55 (W=0, p=0.011, r=0.76). Conclusions: Early data suggests that an innovative approach to structured mentorship between residents and faculty improves the resident mentorship experience. More data is needed to determine whether this impact persists over time.

72. Multi-Sensory Loss and Dementia -- A Multi-National Database Study

Zachary David Urdang, MD PhD, Iowa City, IA; Karen Michelle Wai, MD, Stanford, CA; Ehsan Rahimy, MD, Stanford, CA; Prithvi Mruthyunjaya, MD MHS, Stanford, CA; Marlan Rex Hansen, MD, Iowa City, IA; Richard Klaus Gurgel, MD MSCI, Salt Lake City, UT

Educational Objective: To report on the compounded associative risk of multisensory loss and dementia.

Objectives: Test the hypothesis that sensory loss for any of the five primary senses associates with dementia and whether this risk is compounded with multisensory loss. Study Design: Retrospective cohort database study with propensity score matching (PSM). Methods: TriNetX is an electronic health record research network representing data from 125 million patients from the United States, Taiwan, Japan, Brazil, and India. Subjects 55 years old and older with hearing, vision, touch, smell, or taste loss were identified using representative ICD10 codes for the respective conditions. Control patients had no sensory loss. Unmatched odds ratios with 95% confidence intervals (OR, 95%CI) were calculated for Alzheimer's, vascular, or other dementia within 30 years of index. Subsequent propensity score matching analysis matching for dementia rick factors compared multisensory loss to the dysgeusia cohort. Results: Sensory loss cohorts included 1,743,010 with hearing loss, 328,511 with vision loss, 1,651,658 with hypoesthesia, 13,846 patients with anosmia, and 33,165 with dysgeusia and 44,811,916 controls. Unmatched risk for dementia was 1.67% (OR:1.01, 0.93-1.10) for dysgeusia, 2.25% (OR:1.37, 1.22-1.53) for anosmia, 2.35% (OR:1.43, 1.41-1.44) for hypoesthesia, 4.67% (OR:2.80, 2.75-2.85) for vision loss, and 5.09% (OR:3.18, 3.16-3.21) for hearing loss versus 1.66% for controls. After propensity score matching, risk for dementia for vision plus hearing loss was 5.34% (OR:3.01, 2.72-3.33) versus 1.84% for controls. The risk for dementia with 5 sensory loss was 12.34% (OR: 3.87, 2.82-6.55) versus 3.53% for controls. Conclusions: Sensory loss of any of the five primary senses associates with increased risk for dementia. Involvement of multiple senses compounds this risk suggesting that sensory deprivation has a cumulative deleterious effect on brain function.

73. Hypertension Incidence in Obstructive Sleep Apnea Patients on CPAP and GLP-1 Agonists

Larry W. Wang, MS, Chicago, IL; Asher C. Park, BS, Chicago, IL; Gordon J. Siegel, MD, Chicago, IL

Educational Objective: At the conclusion of this presentation, the participants should be able to better understand the association between hypertension incidence across patients with obstructive sleep apnea (OSA) on continuous positive airway pressure (CPAP) with vs without GLP-1 agonists.

Objectives: To study the association between hypertension incidence across patients with obstructive sleep apnea (OSA) on continuous positive airway pressure (CPAP) with vs without GLP-1 agonists. Study Design: Retrospective cohort study. Methods: This study queried the U.S. Collaborative Network within the TriNetX health database for adult OSA patients with no history of hypertension using CPAP from 2005-2022. Cohort A included OSA patients treated with CPAP and an existing prescription for GLP-1 agonists. Cohort B included OSA patients treated with CPAP and no prescription of GLP-1 agonists. The cohorts were propensity matched based on age, ethnicity, sex, BMI, and diabetes. Risk difference (RD), relative risk (RR), 95% confidence intervals (CI), and associated p-values were used to evaluate associations. The primary outcomes were incidence of primary and pulmonary hypertension and secondary outcomes included incidence of cardiopulmonary complications such as acute respiratory failure. Results: Following propensity matching, 399 patients per cohort were included in this study. No significant differences in the incidence of primary hypertension were observed between cohorts. However, the incidence and relative risk of pulmonary hypertension was significantly higher among cohort B (RD, -0.043; 95% CI, (-0.083, -0.002); p<0.05; RR, 0.638; 95% CI, (0.413, 0.988); p<0.05). For secondary outcomes, cohort B also demonstrated significantly greater incidence and relative risk of acute respiratory failure (RD, -0.070; 95% CI, (-0.124, -0.016); p=0.01; RR, 0.685; 95% CI, (0.510, 0.920); p=0.01). Conclusions: OSA patients on CPAP taking GLP-1 agonists were associated with decreased incidence of pulmonary hypertension and acute respiratory failure compared to OSA patients on CPAP alone.

74. The Impact of Geographic Preferences on the Otolaryngology Residency Application Match: A Preliminary Analysis

Ronald Shen Wang, BS, New York City, NY; Maya Hatley, BA, New York City, NY; Angela Mihalic, MD, Dallas, TX; Max M. April, MD, New York City, NY; , ,

Educational Objective: At the conclusion of this presentation, the participants should be able to better understand the impact of geographic preferences on otolaryngology residency applications.

Objectives: For the 2024 match cycle, the Association of American Medical Colleges trialed the inclusion of applicant geographic preferences. The goal of this study was to assess the impact of geographic preferences on otolaryngology residency application outcomes. Study Design: Cross-sectional. Methods: We used the Texas Seeking Transparency in Application to Residency (STAR) survey responses for otolaryngology applicants in the 2024 match cycle. The impact of applicant endorsement of geographic preference on interview offers and match result was assessed using chi square and multivariable analysis. Results: A total of 139 otolaryngology applicants in the 2024 match cycle who completed the Texas STAR survey were included. Of the 139 applicants, a total of 43 applicants (30.9%) submitted at least one geographic preference. From the 139 applicants, a total of 6905 unique applications were submitted to otolaryngology residency programs. Compared to those without a geographic preference, applications submitted with at least one geographic preference were significantly more likely to receive an interview offer (44.0% versus 25.4%; $p < 0.01$) and match (3.1% versus 1.5%; $p < 0.01$). On multivariable analysis controlling for geographic connection, signaled program, and away rotation, applications having a geographic preference were more likely to receive an interview (OR: 1.27; $p < 0.01$), but no statistically significant impact on match status was found (OR: 0.997; $p = 0.99$). Conclusions: In the 2024 match cycle, otolaryngology residency applications with a geographic preference were more likely to receive an interview than those without geographic preferences but match status was ultimately not affected.

75. The Utility of Frailty in the Prediction of Adverse Outcomes in Otolaryngology

Rohan Singh, BS, Newark, NJ; Akshay Warrier, BA, Newark, NJ; Taimur Hassan, MPH, Houston, TX; Felix Toussaint, BA, New York City, NY; Christian Bowers, MD, Flint, MI; Richard K. Gurgel, MD, Salt Lake City, UT

Educational Objective: At the conclusion of this presentation, the participants should be able to recognize the scope of utilization of frailty indices and clinical possibilities in otolaryngology outcomes research and understand where future research is required.

Objectives: Evaluate and compare the use of frailty indices to predict postoperative outcomes in otolaryngology literature. Study Design: Systematic review. Methods: A systematic review was conducted following PRISMA guidelines, including articles that evaluated the prognostic significance of frailty indices. Articles that utilized non-frailty metrics or did not study outcomes were excluded. Results: 223 articles were identified through database search and screened for relevance, 57 of which (737,786 patients) were relevant to otolaryngology frailty outcomes research. 28 studies utilized the mFI-5 or mFI-11 and 29 of the studies were conducted on large nationwide databases. Other

major indices utilized included the RAI (4), HFRS (2), and the Johns Hopkins ACG index (2). The majority of papers were within head and neck surgery (51%), with other major contributions from otology/neurotology (25.5%) and rhinology (9.8%). Comparative studies have revealed the superiority of the RAI index to the mFI-5, but other comparative studies have not been performed. All major frailty indices studied have shown relative success in predicting postoperative outcomes, but the literature lacks standardization and consensus. Conclusions: Frailty indices can be valuable risk assessment tools for patients undergoing otolaryngological surgeries and are predictive of unfavorable outcomes. Validated indices like the RAI offer the best predictive capacity to guide perioperative care and physician counseling. There is limited research, however, on the comparative utility of frailty indices in otolaryngology, with significant heterogeneity in evaluating their predictive value overall. Further research is needed to develop a standardized frailty assessment tool to reduce adverse outcomes in these patients.

76. Age Related Differences in Sleep Measures among Pediatric Patients with Obstructive Sleep Disordered Breathing

Matthew Zhang, BA, Dallas, TX; Basir Mansoor, BA, Dallas, TX; Stephen Chorney, MD MPH, Dallas, TX; Yann-Fou Kou, MD, Dallas, TX; Cynthia Wang, MD, Dallas, TX; Romaine Johnson, MD MPH, Dallas, TX

Educational Objective: At the conclusion of this presentation, the participants should be able to characterize age related differences in sleep measures among a cohort of pediatric patients referred for polysomnography (PSG) due to obstructive sleep disordered breathing (oSDB).

Objectives: To characterize age related differences in sleep measures among a cohort of pediatric patients referred for polysomnography (PSG) due to obstructive sleep disordered breathing (oSDB). Study Design: Retrospective case series. Methods: A retrospective review of 303 children aged 1-18 years referred for PSG due to oSDB was conducted. Patients were categorized into four age groups based on American Academy of Pediatrics guidelines. Demographic, clinical, and polysomnographic differences were analyzed using linear regression and chi square techniques. Sleep parameters were further characterized using correlation analysis, and significant correlations were explored using multiple linear regression. A subset of 132 patients was analyzed post-tonsillectomy. Results: The study included 20 (6.6%) patients aged 13 months-2 years, 153 (50.5%) aged 2-5 years, 67 (22.1%) aged 6-11 years, and 63 (20.8%) aged 12-18 years. Obesity prevalence increased significantly with age, from 33.3% in the youngest group to 75.8% in adolescents ($p < 0.001$). The apnea-hypopnea index (AHI) showed a U shaped distribution, with the highest levels in the youngest (17.2/hr) and oldest (28.8/hr) groups ($p < 0.001$). N3 sleep (i.e., deep sleep) duration decreased significantly with age, from 93.0 minutes in the youngest to 69.6 minutes in adolescents ($p < 0.001$). Multiple regression analysis revealed significant negative effects of age ($\beta = -1.90$, $p < 0.001$), BMI ($\beta = -0.54$, $p = 0.071$), and AHI ($\beta = -0.41$, $p < 0.001$) on N3 sleep duration. Post-tonsillectomy, these relationships persisted and strengthened (age: $\beta = -4.24$, $p < 0.001$; BMI: $\beta = -0.81$, $p = 0.027$; AHI: $\beta = -0.87$, $p = 0.001$). Conclusions: The interaction between age, obesity, AHI, and N3 sleep reveals critical insights into age related differences in pediatric oSDB. Our results show that older obese children exhibit significantly reduced restorative N3 sleep. These effects persist post-tonsillectomy, emphasizing the need for targeted interventions beyond airway obstruction to optimize outcomes.

HEAD AND NECK

77. Generation of a Predictive Tool to Guide the Clinical Utilization of Sialendoscopy for Patients with Salivary Gland Pathologies

Victoria Fonseca, BS, Chapel Hill, NC; Trevor Hackman, MD, Chapel Hill, NC

Educational Objective: At the conclusion of this presentation, participants should be able to understand the roles of various clinical factors in predicting the likelihood of improvement of salivary gland pathologies with sialendoscopy and understand the methods utilized to construct a predictive clinical tool.

Objectives: Demonstrate the roles of various clinical factors, including age, race, tobacco use, infection history, previous sialendoscopy, and comorbid conditions, on the likelihood of improvement of salivary pathologies following sialendoscopy. Explain the development of a clinical tool for the assessment of individual patient likelihood of improvement with sialendoscopy for patients with pathologies of the salivary glands. Study Design: Retrospective cohort study. Methods: This study included 114 patients treated by a single otolaryngologist between 2022 and 2024. Patient data, including age, sex, steroid use, comorbid conditions, tobacco use, and history of infection, were extracted from the electronic medical record (EMR) and preliminarily analyzed with Microsoft Excel. Data was then aggregated and deidentified and utilized to generate a predictive tool with the use of Python. Results: The cohort

was predominantly female (66%) and a mean age of 55 years (SD: 14.4). Repeat procedure was needed for 11 patients (9.7%). Of the 114 patients, 37 (32.5%) had a history of salivary gland infections. Perioperative antibiotics were administered in 43 patients (37.7%) and perioperative steroids were administered for 42 patients (36.8%). Most patients had no smoking history (66.6%) or were former smokers (24.5%). Conclusions: This study lays the foundation for the clinical utilization of a tool to analyze the risk of repeat procedures for patients at time of initial presentation for sialendoscopy. Identifying "at risk" patients allow for informed pretreatment counseling, potential alteration to treatment/surgical plan, as well as potential use of adjuvant strategies to mitigate recurrence.

78. Reconstruction of Forehead and Frontotemporal Defects with Free Flaps: A Retrospective Series and Analysis of Techniques

Hannah Gibbs, MD, Phoenix, AZ; Justin Hintze, MD MSc, Phoenix, AZ; Payam Entezami, MD MS, Phoenix, AZ; Richard Hayden, MD, Phoenix, AZ; Brent Chang, MD, Phoenix, AZ

Educational Objective: At the conclusion of this presentation, the participants should be able to understand various reconstruction options and outcomes for large forehead and frontotemporal defects.

Objectives: Defects involving the forehead and frontotemporal region are often reconstructed using local flaps and adjacent tissue transfers. However, when defects are large or involve the whole aesthetic subunit, free flaps may be required for reconstruction and require consideration of multiple factors. Large defects are often at sites of prior radiation or reconstruction, potentially resulting in challenges such as limited vessel availability and altered tissue. Cosmetic outcomes and potential need for adjuvant therapies must also be considered. Study Design: Retrospective review of patients who underwent forehead or frontotemporal reconstruction with free flaps at a multisite, single institution between January 2014 and October 2024. Methods: An operative report search engine was used to identify patients. Search terms included "flap", "forehead", "frontotemporal", and "frontal-temporal". Patients who underwent free flap reconstruction of a defect that predominantly included the forehead or frontotemporal region were included. Results: Seventeen patients met inclusion criteria with one patient experiencing flap failure requiring a second flap surgery. Eleven (61%) surgeries were for primary oncologic resection with the rest for reconstruction of wounds related to prior oncologic interventions. The most common malignancy was squamous cell carcinoma (41%) followed by sarcomas (29%). The mean defect size was 142.6 cm2 (range 30-300). Musculofascial free flaps with meshed split thickness skin grafts were most common (61%). Ten of these were latissimus dorsi flaps and 1 was a vastus lateralis flap. Fasciocutaneous flaps included 1 latissimus dorsi, 3 anterolateral thigh, 1 submental, and 2 radial forearm flaps. The most common vessels used were the facial artery (n=7), facial vein (n=7), external jugular vein (n=7), and superficial temporal artery (n=7). No vessel grafts were required. Six patients underwent flap debulking procedures later. Eight patients received postoperative radiation with only one experiencing post-radiation wound dehiscence. Conclusions: Various options exist for reconstruction of large forehead and frontotemporal defects. In review of our institution's experience reconstructing these defects over a 10 year period, the majority of free flaps were musculofascial with split thickness skin grafts. Other flaps and techniques were used and found to be viable.

79. The Impact of Patient Frailty on Morbidity and Mortality following Major Head and Neck Reconstructive Surgery

Gaurav Ashok Jategaonkar, BSE, Phoenix, AZ; Justin Hintze, MD MB BCh BAO, Phoenix, AZ; Brent Chang, MD, Phoenix, AZ

Educational Objective: At the conclusion of this presentation, the participants should be able to better characterize and understand the association of patient frailty with postoperative morbidity and mortality following head and neck reconstructive surgery.

Objectives: Patient frailty is a state of increased vulnerability due to physiologic or pathologic decline. Some studies have associated increased patient frailty as a predictor of negative outcomes following head and neck cancer surgery, however this study seeks to utilize a national database (NSQIP) to better characterize and correlate patient frailty approximated with 5 item modified frailty index (MFI-5) metric with postoperative morbidity and mortality following head and neck surgery. Study Design: Retrospective database study. Methods: NSQIP was queried for patients who underwent major head and neck reconstructive procedures between 2016 and 2020 using CPT and ICD-10 codes. A 5 item modified frailty index (MFI-5) was calculated for each patient, accounting for a history of hypertension, COPD, diabetes, congestive heart failure, or dependent functional status3. The head and neck patient cohort was subdivided into a group with MFI-5=0, MFI-5=1, MFI-5 >/= 2. Hypothesis testing was conducted to evaluate differences in

baseline patient characteristics as well as differences in postoperative 30 day complications between the frailty index groups. Results: 4661 head and neck reconstructive surgery patients were included. Patients with increased frailty tended to be older, have increased BMI, be transferred from other healthcare facilities, have baseline dyspnea, have higher preoperative BUN, creatinine, and leukocyte values, as well as lower preoperative albumin and hematocrit ($p<0.05$). Postoperatively, patients with increased frailty experienced longer hospital stays, and had higher rates of mortality, reoperation, pneumonia, unplanned intubation, bleeding, urinary tract infections, myocardial infarction, and sepsis/septic shock ($p<0.05$). Conclusions: This study suggests that higher patient frailty is associated with increased postoperative morbidity and mortality following major head and neck surgery. The incorporation of frailty screening in preoperative surgical evaluation prior to head and neck reconstructive surgery protocols may benefit patient surgical outcomes.

80. An Algorithmic Approach to the Surgical Management of Primary Hyperparathyroidism

Fleur Serena Kabala, BS MS, Farmington, CT; Todd Falcone, MD, Farmington, CT; Kourosh Parham, MD PhD FACS, Farmington, CT

Educational Objective: At the conclusion of this presentation, participants will describe a comprehensive, evidence based tool to optimize decision making in the surgical management of sporadic primary hyperparathyroidism (PHPT).

Objectives: Primary hyperparathyroidism can have varied presentations whose successful surgical management demands ongoing integration of the expanding literature within a comprehensive decision making framework. We describe an algorithmic approach that helps define the parameters that will optimize surgical outcomes. Study Design: Systematic literature review, integration, and synthesis. Methods: Classical PHPT (CPHPT), normocalcemic (NCHPT) and normohormonal (NHPTH) variants were addressed. The decision making process integrates preoperative biochemical profiles and imaging which guide the surgical approach. Intraoperative factors including intraoperative PTH (IOPTH) guide transition from targeted to four gland exploration based on the likelihood of multiglandular disease (MGD). Results: In CPHPT, negative ultrasound and SPECT/CT or suspected MGD have superior localization with FCH PET/CT. 4DCT or FCH PET/CT are comparable in localization of cases with ectopic tissue or incomplete localization with traditional methods. Successful surgery is defined by greater than a 50% drop in IOPTH within 15 minutes and normalization of post-excisional PTH levels. In NCHPT, greater than a 50% drop in IOPTH defines cure, while greater than 80% is needed in NHPTH. If the excised gland is less than 200mg, four gland exploration is recommended due to higher MGD risk. Conclusions: PHPT has varied presentations that demand nuanced approaches to optimize outcomes. Development of an algorithm for surgical decision making in PHPT is a practical, evidence based approach to improve outcomes in patients undergoing parathyroidectomy.

81. Otolaryngologic Manifestations of Hyperparathyroidism: Benign Paroxysmal Positional Vertigo

Mohsin Mirza, BS, Farmington, CT; Heather McClure, BS, Farmington, CT; Kourosh Parham, MD PhD, Farmington, CT

Educational Objective: At the conclusion of this presentation, the participants should be able to understand the otolaryngologic implications of hyperparathyroidism because of metabolic dysregulation in serum calcium levels.

Objectives: BPPV is suspected to arise from degeneration of the otoconia. Some studies suggest a relationship between disturbances of calcium metabolism and BPPV. To investigate this relationship, we evaluated the odds ratios for vertigo, nephrolithiasis, and osteoporosis in primary hyperparathyroidism (PHPT) and secondary hyperparathyroidism (SHPT). Study Design: Five year retrospective study of electronic records at a tertiary care center. Methods: Population based samples of adults with PHPT and SHPT were extracted. ICD-10 codes were used to identify active, concurrent diagnosis with the following conditions: nephrolithiasis, osteoporosis, BPPV, Meniere's disease, vestibular neuronitis, aural vertigo, peripheral vertigo, central vertigo, vestibular function disorders, labyrinthitis, labyrinthine dysfunction, dizziness, and motion sickness. Odds ratios were calculated using a binary logistic regression model to account for variation in sociodemographic factors. Results: The sample included 839 PHPT subjects and 1418 SHPT subjects. The prevalence of any vertigo or dizziness in hyperparathyroidism was 197.61 cases per 1000 patients. Respectively, the odds ratios for nephrolithiasis, osteoporosis, and BPPV in PHPT vs SHPT were 1.4261 (1.0861, 1.8727), 2.1584 (1.7166, 2.6982), and 2.222 (1.2378, 3.9884). Conclusions: Dizziness is highly prevalent in hyperparathyroidism, presenting in PHPT at a similar rate to nephrolithiasis. BPPV prevalence is significantly increased in PHPT compared to SHPT. The odds ratio for BPPV is greater than that of nephrolithiasis and osteoporosis, both conditions widely associated with PHPT. These results suggest that BPPV may be an additional manifestation

of PHPT. Further investigation may allow for better appreciation of the impact of PHPT on affected patients while improving understanding of BPPV pathophysiology.

82. Incidence of HPV Head and Neck Cancer following Vaccination

Kamdili Ogbutor, BS, Washington, DC; Elijah McMillan, PT DPT, Washington, DC; Nurupa Ramkissoon, BS, Washington, DC; Da'Jhai Monroe, BS, Washington, DC; Samrawit Zinabu, MD, Washington, DC; Miriam Micheal, MD, Washington, DC

Educational Objective: At the conclusion of this presentation, the participants should be able to recognize disparities within HPV cancer incidence among vaccinated individuals.

Objectives: Head and neck cancer caused by human papillomavirus (HPV) is a rare form of cancer that disproportionately impacts males more than their female counterparts (11.4 per 1,000,000 compared to females 3.0 per 1,000,000). Despite the introduction of vaccination for HPV there has still been an increase in incidence within the past 20 years. This study investigates the disparities in vaccination rates among various gender and racial groups as well as subsequent head and neck cancer development. Study Design: Retrospective cross-sectional study. Methods: This study was conducted via review of electronic medical records of 5.8 million deidentified patients. We assessed the rate of vaccination from January 2014 to December 2020 then stratified by race, gender, and head and neck cancer incidence in the same population. Results: Females had significantly higher vaccination rates than males (58.1% vs 41.9%). Black females were the most vaccinated subgroup (27.6%), while white males were the least vaccinated (16.8%). Among vaccinated individuals, 0.13% developed head and neck cancer. Of this percentage, there was a disproportionate representation of black females accounting for 46.7% of head and neck cancer cases despite having the highest vaccination rates. Conclusions: Despite persistent vaccination efforts, we see an unexplained high incidence of head and neck cancer affecting black females. Targeted interventions are essential to improving health outcomes in this population.

83. Post-Thyroidectomy Hypocalcemia in Graves' Disease and Thyroid Cancer: A Nationwide Database Study

Ella Prebel Jackert, BS, Los Angeles, CA; Stephanie Wong, MD, Los Angeles, CA; Daniel Kwon, MD, Los Angeles, CA; Niels Kokot, MD, Los Angeles, CA; Uttam Sinha, MD, Los Angeles, CA; Albert Y. Han, MD PhD, Los Angeles, CA

Educational Objective: At the conclusion of this presentation, the participants should be able to identify differences in key postoperative outcomes of total thyroidectomy in Graves' disease patients versus thyroid cancer patients.

Objectives: Diffuse thyrotoxic goiter, or Graves' disease, is associated with widespread inflammation and vascularity, which can make total thyroidectomy (TT) technically challenging. This study compared hypocalcemia outcomes after TT. Study Design: Retrospective cohort study utilizing TriNetX U.S. database. Methods: This was a multi-institutional retrospective cohort study that queried TriNetX U.S. database to identify patients who underwent TT. Patients without recorded calcium levels were excluded. Patients were stratified by indication for surgery -- Graves' or thyroid cancer (TC; papillary, medullary, and anaplastic) -- and matched by demographics and preoperative hypocalcemia risk factors. Laboratory and diagnostic indicators of hypocalcemia were compared at 1 week and 1 month timepoints postoperatively. Results: A total of 50,116 patients were identified who underwent TT. 9,892 met eligibility criteria after matching (n = 4,946 for Graves', n = 4,946 for TC). 28% of patients in both the Graves' and TC cohorts received vitamin D or calcium supplementation within 1 month of surgery. Compared to the TC cohort, the Graves' cohort had significantly lower total calcium (9.11 +/- 0.73 mg/dL vs 9.23 +/- 0.70 mg/dL, p <0.0001) and ionized calcium (1.15 +/- .53 mmol/L vs 1.48 +/- 1.06 mmol/L, p = 0.0088), and a higher risk of clinically significant hypocalcemia (total calcium <8.50 mg/dL)with corresponding increased risk of hypocalcemia 9total calcium less than 8.50 mg/dL) [OR = 1.311, 95% CI: (1.130, 1.522)]. The Graves' cohort had a decreased risk of vitamin D deficiency [OR = 0.803, CI: (0.599, 1.076)]. Conclusions: Graves' disease is associated with greater risk for hypocalcemia following thyroidectomy compared to thyroid cancer. These data suggest that a lower threshold for postoperative hospitalization for calcium monitoring and supplementation may be indicated for cases of Graves' disease compared to thyroid cancer.

84. Perioperative Outcomes and Symptom Reduction following Styloidectomy for Eagle's Syndrome: A Retrospective Review of 109 Patients

Elliott Sina, BA, Philadelphia, PA; Antony Fuleihan, MSE, Philadelphia, PA; Areeba Nisar, MD, Philadelphia, PA; Meghan Crippen, MD, Philadelphia, PA; Hsiangkuo Yuan, MD, Philadelphia, PA; David Cognetti, MD,

Philadelphia, PA

Educational Objective: At the conclusion of this presentation, participants should gain an up to date understanding of patient characteristics in Eagle's syndrome and the impact of styloidectomy on patient reported symptom improvement.

Objectives: Our primary objective is to investigate the relationship between postoperative outcomes, patient demographics, and comorbidities in patients with Eagle's syndrome who underwent styloidectomy. Our secondary objective is to assess changes in pre and postoperative symptoms. Study Design: Retrospective cohort study. Methods: Patients with Eagle's syndrome who underwent styloidectomy between April 2017 and December 2023 were retrospectively reviewed. Data collection included demographics, medical and surgical history, comorbidities, procedure characteristics, and symptom data. A standardized institutional patient reported 17 symptom Eagle's syndrome questionnaire [0=none; 4=severe] and visual analog scale (0-10) were used for symptom data pre and postoperatively. Statistical analysis was performed using the Wilcoxon rank sum test. Results: 109 patients (age 47.9 +/- 11.4 years, BMI 26.61 +/- 5.13 1 kg/m2, and 69.7% female) underwent styloidectomy for Eagle's syndrome. 30 (27.5%) patients underwent prior tonsillectomy and 28 (25.7%) patients had a history of neck injury or trauma. The average length of the styloid process was 3.76 cm as measured in 54 patients. The average procedure duration was 70 +/- 48.8 minutes. Styloidectomy resulted in a statistically significant reduction of 14/17 (82.6%) symptoms included on the Eagle's syndrome questionnaire ($p<0.001$) in 33 patients with complete pre and postoperative questionnaires, and reduced patients' current and daily pain levels ($p<0.001$). Conclusions: This study demonstrates a significant reduction in pain and symptoms following styloidectomy in patients with Eagle's syndrome. This is the largest reported cohort of Eagle's syndrome patients undergoing styloidectomy, with standardized symptom reporting. Further studies are warranted to distinguish between classic and vascular variants of Eagle's syndrome specifically analyzing differences in venography and computed tomography imaging.

85. Efficacy of Nasal Theophylline Irrigation for COVID-19 Related Olfactory Dysfunction: The SCENT3 Phase II Randomized Controlled Trial

Theresa Tharakan, MD MSCI, St. Louis, MO; Dorina Kallogjeri, MD, St. Louis, MO; Jay Piccirillo, MD, St. Louis, MO

Educational Objective: At the conclusion of this presentation, the participants should be able to evaluate the efficacy of theophylline added to nasal saline irrigations compared to placebo for COVID-19 related olfactory dysfunction (OD).

Objectives: To evaluate the efficacy of theophylline added to nasal saline irrigations compared to placebo for COVID-19 related olfactory dysfunction (OD). Study Design: Double blinded, placebo controlled, phase II randomized clinical trial. Methods: This trial was conducted virtually between October 2022 to May 2024. Included participants were adults with OD for at least 3 months following suspected COVID-19 infection and olfactory dysfunction on University of Pennsylvania Smell Identification Test. Participants were randomized to use SNI with dissolved capsules of theophylline or lactose powder (placebo) twice daily for 12 weeks. Primary outcome was response to treatment on the 7 point Clinical Global of Impression-Improvement scale. Secondary outcome was clinically meaningful improvement on the Olfactory Dysfunction Outcomes Rating (ODOR) survey by 15 points. Results: Forty-six participants completed the 12 week study (theophylline A n=20, placebo B n=26). Mean (SD) age was 50.8 (12.4) years and 32 participants (70%) were women. The rate of response to treatment on CGI-I was 1/20 (5%) in the theophylline group and 3/26 in the placebo group, (proportion difference 6.5%, 95% CI -9% to 22%). The rate of clinically meaningful improvement on ODOR was 4/20 (20%) with theophylline and 4/26 (15%) with placebo (proportion difference 4.6%, 95% CI -17.7% to 27.0%). The trial was stopped early for futility based on low conditional power during interim analysis. Conclusions: Our results suggest that there is no clinically meaningful benefit of theophylline nasal irrigations compared to placebo for patients with COVID-19 related OD. Further studies are needed to identify safe and effective therapeutics for this population.

86. Letters of Recommendation and Personal Statements in Head and Neck Surgery Fellowship Applications: A Deep Learning Linguistic Analysis Considering Applicant Gender

Vikram Vasan, BA, New York, NY; Christopher P. Cheng, AB, New York, NY; Shaun Edalati, BS, New York, NY; Alfred Marc Iloreta, MD, New York, NY; Eric M. Genden, MD, New York, NY; Marita S. Teng, MD, New York, NY

Educational Objective: At the conclusion of this presentation, the participants should be able to identify and interpret linguistic patterns in otolaryngology fellowship applications, evaluate potential gender based implicit differences, and recognize trends in female representation within head and neck surgery fellowship programs.

Objectives: Female representation within head and neck surgery (HNS) faculty has improved over the past decade, but a considerable gender gap remains. One potential challenge to inclusivity may lie in subjective components of HNS fellowship applications, such as letters of recommendation (LORs) and personal statements (PSs). Previous studies have identified implicit gender bias in the rhinology and neurotology fellowship LORs. This study analyzes linguistic differences in LORs and PSs between male and female HNS fellowship applicants. Study Design: Single institution retrospective review. Methods: LORs and PSs from 2020-2024 application cycles to a single HNS fellowship were collected. A peer reviewed deep learning tool, Empath, was used to generate several sentiment categories and scores which allowed analysis of linguistic differences between applicant gender. Wilcoxon rank sum tests were then performed to compare Empath sentiment scores for each category between applicant gender. Results: Over the 4 years of HNS fellowship data analyzed, there were 53 male applicants and 28 female applicants. Female applicants represented 5/19 (26.3%) in 2020, 4/14 (28.6%) in 2021, 10/30 (33.3%) in 2022, and 9/18 (50%) in 2023. In both LORs and PSs, there were no statistically significant differences in word count or linguistic Empath sentiment scores between male and female applicants. Conclusions: This single institution pilot study found no linguistic differences between HNS applicant gender. Additionally, we report an upward trend in the percentage of female applicants to HNS fellowship at our institution. Overall, we note an encouraging trend towards gender inclusivity within HNS at the fellowship application level, in stark contrast to findings from other subspecialty fellowship analyses.

87. Impact of Comorbid Immunocompromise in HPV Associated Oropharyngeal Squamous Cell Carcinoma

Maxwell Weng, BSE, Los Angeles, CA; Hong-Ho Yang, BS, Los Angeles, CA; Lauran Evans, MD, Los Angeles, CA; Christopher Dann, BS, Los Angeles, CA; Krishna Bommakanti, MD, Los Angeles, CA; Maie St. John, MD PhD, Los Angeles, CA

Educational Objective: At the conclusion of this presentation, the participants should be able to appreciate how comorbid immunocompromise is associated with worse survival among patients with surgically resected p16+ OSCC.

Objectives: Characterize the morbidity and survival associated with comorbid immunocompromise status among patients with surgically resected p16+ OSCC. Study Design: Retrospective chart review. Methods: We reviewed surgically resected p16+ OSCC at a tertiary institution between 2000 and 2023 for instances with comorbid immunocompromise. The morbidity and survival associated with comorbid immunocompromise were assessed with multivariable regression models controlling for patient demographics, substance use, tumor multifocality and staging, extranodal, perineural, and lymphovascular invasion, concurrent neck dissection, and adjuvant radio/chemotherapy. Results: Among 278 OSCC cases, 14 patients had comorbid immunocompromise. Causes of immunocompromise: 3 from organ transplantation, 3 from immunosuppressive medication for a rheumatologic condition, 2 from HIV, 2 from chronic lymphocytic leukemia (CLL), 2 from a lymphoma, 2 from pancytopenia. Among patients comorbid immunocompromise, 5 received adjuvant immunotherapy. Adjusting for relevant covariates, comorbid immunocompromise did significantly alter overall survival (64.3% vs 91.7%; aOR 0.07, 95% CI 0.008-0.630) compared to those without comorbid immunocompromise. Comorbid immunocompromise did not significantly alter postoperative length of stay (3.96 vs. 3.5 days; aβ 0.66, 95% CI -1.30 to 2.64). Conclusions: Comorbid immunocompromise status among patients with surgically resected p16+ OSCC was associated with significantly worse survival compared to immunocompetent patients.

88. Factors Influencing the Delay in Head and Neck Cancer Diagnosis

Nader G. Zalaquett, BS, Beirut, Lebanon; Jad Hosri, MD, Beirut, Lebanon; Bassem Youssef, MD, Beirut, Lebanon; Marc Mourad, MD, Beirut, Lebanon; Arafat Tfayli, MD, Beirut, Lebanon

Educational Objective: At the conclusion of this presentation, the participants should be able to acknowledge the importance of investigating the factors associated with head and neck cancer diagnosis delay in their patient population, especially in low income countries. It will also provide them with the methodology and key points to investigate that in their population. Finally, the participants should also be able to capture a different perspective of what are the challenges faced in low income countries for better advocacy and awareness.

Objectives: To evaluate the reasons for delay in head and neck cancer (HNC) diagnosis in our low income country using the "three delay model". Study Design: Retrospective chart review and cross-sectional questionnaire. Methods: Patients with HNC presenting from August 1, 2023, to August 1, 2024, to our medical center were recruited. A questionnaire was administered to characterize the demographic, socioeconomic, and clinical factors affecting their cancer diagnosis, and their charts were reviewed retrospectively for their cancer demographics. Results: Late stage HNC patients (n=44) experienced significantly longer delays in diagnosis, with a mean time from symptom onset to first presentation (type 1 delay) of 8.58 weeks compared to 4.03 weeks in early stage patients (n=34) (p=0.019), and a mean time from first presentation to referral to a tertiary care center (type 2 delay) of 6.73 weeks versus 1.34 weeks (p=0.001). Key findings revealed that late stage patients had significantly lower education levels (p=0.016), were more likely to lack insurance (p=0.025), and were from lower socioeconomic backgrounds (p=0.014). Clinical factors showed that late stage patients were less likely to have regular dental checkups (p=0.036) and reported pain as their initial symptom more frequently (p=0.001). Additionally, delays in diagnosis were associated with financial barriers (p=0.022), transportation issues (p=0.003), and lack of awareness (p=0.001). Conclusions: This study identifies type 1 and type 2 delays in HNC care in this population. The type 1 delay may be due to lack of symptom awareness and financial barriers, while type 2 delay may be due to an inefficient referral system and lack of transportation.

LARYNGOLOGY/BRONCHOESOPHAGOLOGY

89. Key Clinical Factors for Predicting Severe Outcomes of Angioedema from ACE Inhibitor Therapy

Govind Singh Bindra, MS, Memphis, TN; Amik Sodhi, MBBS MPH FCCP, Madison, WI; Debendra Pattanaik, MD, Memphis, TN; Anthony Sheyn, MD FACS, Memphis, TN; Marion Boyd Gillespie, MD MSc FACS, Memphis, TN

Educational Objective: At the conclusion of this presentation, the participants should be able to discuss clinical examination factors highlighted as important for improving clinical judgement while assessing patients at risk of severe complications from ACEi angioedema.

Objectives: Identifying predictive parameters for hospital admission, ICU admission, and intubation in patients presenting to emergency department (ED) with ACEi angioedema. Study Design: This single hospital based retrospective cohort study examined ED visits of adult ACEi angioedema patients between January 1, 2006, and August 31, 2016. Clinical events were recorded over the ER visit and next two months. Methods: Data extracted included demographics (age, sex, race), symptoms, exam findings, intubation details (including difficulty, methods used), and adverse events (hypoxia, cardiac arrest, death). Patient course, ICU care need, clinical deterioration, therapies, and length of stay were also documented. Exclusions (angioedema from other causes, no airway exam) totaled 547 patients. Results: 752 patients remained after fulfilling inclusion criteria. These were predominantly female, obese, African American, and former/current smokers. Dyspnea (OR 5.7, p <0.0001), tongue swelling (OR 1.5, p 0.02) and hoarseness (OR 2.4, p 0.02) were associated with increased severity of angioedema. Dyspnea on presentation corresponded with higher odds of laryngeal edema on fiberoptic exam (OR 4.9, p < 0.0001). 115 patients were intubated by EMS or in the ED. 122 (16.2%) patients required intubation at some point during admission, and half of these qualified as difficult intubations. Laryngeal edema was strongly correlated to worse outcomes in our study, suggesting fiberoptic exam is a valuable step in evaluating ACEi angioedema patients presenting to ED. Conclusions: In the largest study of single site ACEi angioedema patients who underwent fiberoptic laryngoscopy at admission, we identified key clinical factors for more effectively triaging patients at risk for significant angioedema complications.

90. Analysis of Malnourishment in the Management and Outcomes of Laryngeal Malignancy

Kaiwen Chen, BS, Piscataway, NJ; Lucy Revercomb, BS, Newark, NJ; Aman M. Patel, BS, Newark, NJ; Anthony Saad, BA, Newark, NJ; Andrey Filimonov, MD PharmD, Newark, NJ; Ghayoour S. Mir, DO, Newark, NJ

Educational Objective: At the conclusion of this presentation, the participants should be able to better understand the impact of malnutrition on the management and outcomes of patients with laryngeal malignancy.

Objectives: Our study investigates the role of malnutrition in the management and outcomes of laryngeal malignancy (LM). Study Design: Retrospective database study. Methods: The 2017 National Inpatient Sample was queried to identify adults with a primary diagnosis of LM (ICD-10: C32). Malnutrition was identified (ICD-10: E40-E46). Univariate and multivariable analyses were performed to identify statistical associations by malnutrition status. Results: Of the 6,825 inpatients identified, the majority were male (78.3%), white (69.2%), and well nourished (69.7%). Mal-

nourished patients had higher incidence of fluid and electrolyte disorders (45.3% vs 24.4%), metastatic cancer (26.2% vs. 17.4%), deficiency anemias (22.5% vs. 15.3%), metastatic cancer (26.2% vs. 17.4%), and alcohol abuse (18.4% vs. 10.2%) than well nourished patients (p less than 0.001). On multivariable analyses, adjusting for patient and hospital characteristics and metastasis, malnourished patients had greater total charges ($146,352 vs. $104,683), length of stay (12.5 vs. 8.6 days), number of procedures undergone (6.5 vs. 4.8 procedures), and odds for mortality (OR 1.84, 95% CI 1.36-2.49), respiratory failure (OR 1.64, 95% CI 1.44-1.88), acute kidney failure (OR 1.67, 95% CI 1.39-2.02), pneumonia (OR 1.76, 95% CI 1.46-2.13), sepsis (OR 2.03, 95% CI 1.54-2.69), skin or subcutaneous tissue infection (OR 2.25, 95% CI 1.66-3.04), tracheotomy (OR 1.28, 95% CI 1.15-1.43), and blood transfusion (OR 1.75, 95% CI 1.40-2.19) than well nourished patients (p less than 0.001). Conclusions: In a national cohort of patients with LM, malnourished inpatients had increased healthcare utilization and complications suggesting that malnutrition status should be addressed when treating LM.

91. Preoperative Risk Factors for Adverse Postoperative Outcomes in Tracheal Resection: A NSQIP Study
Gaurav Ashok Jategaonkar, BSE, Phoenix, AZ; Justin Hintze, MD MB BCh BAO, Phoenix, AZ; Brent Chang, MD, Phoenix, AZ; Deborah X. Xie, MD, Phoenix, AZ; Ameya Jategaonkar, MD, Phoenix, AZ

Educational Objective: At the conclusion of this presentation, participants should be able to better characterize tracheal resection patients, especially in the context of increasing importance of core healthcare quality metrics, i.e., unexpected return to operating room, 30 day readmission, prolonged ventilation, and length of stay.

Objectives: Tracheal resection represents a major operation often performed on complex care patients. There is minimal literature that characterizes tracheal resection patients, especially in the context of increasing importance of core healthcare quality metrics, i.e., unexpected return to operating room, 30 day readmission, prolonged ventilation, and length of stay. Here we use the National Surgical Quality Improvement Program (NSQIP) to characterize tracheal resection patients. Study Design: Retrospective database study. Methods: Patients who underwent tracheal resection between 2014-2022 were identified in NSQIP using CPT codes. This patient cohort was subdivided into groups that experienced unexpected reoperation, readmission, prolonged ventilation, and increased length of stay (greater than median). Hypothesis testing was performed to evaluate differences in patient baseline characteristics and compare the rates of the aforementioned adverse postoperative outcomes. Results: 198 tracheal resection patients were selected. Patients who experienced the aforementioned postoperative complications were more likely to smoke, have higher baseline ASA class, hypertension, and lower preoperative albumin/hematocrit levels ($p<0.05$) Patients within each group experienced higher rates of other postoperative complications as well, including bleeding requiring transfusion, unplanned intubation, wound infection/dehiscence, surgical site infection, pneumonia, pulmonary embolism, cardiac arrest, and sepsis/septic shock ($p<0.05$). Furthermore, reoperation after tracheal resection was associated with increased mortality ($p<0.05$). Conclusions: In this study, we utilized NSQIP to characterize patients undergoing tracheal resection, especially in the context of increasing importance to core healthcare quality measures. We show that certain preoperative factors may be associated with increased rates of reoperation, readmission, prolonged ventilation, and increased length of stay. Our results may enable improved preoperative risk stratification and perioperative management of tracheal resection patients.

92. Impact of Drug Induced Sleep Endoscopy Procedure on CPAP Adherence and OSA Treatment Decision
Jaehee Kim, BA, Philadelphia, PA; Kalena Liu, BS, Philadelphia, PA; Irene Kim, BA, Philadelphia, PA; Stephen White, MD, Philadelphia, PA; Maurits Boon, MD, Philadelphia, PA; Colin Huntley, MD, Philadelphia, PA

Educational Objective: At the conclusion of this presentation, participants should be able to assess the impact of DISE and post-DISE consultations on CPAP adherence and patients' consideration of alternative OSA treatment modalities.

Objectives: Continuous positive airway pressure (CPAP) is standard treatment for obstructive sleep apnea (OSA), but its effectiveness is limited by non-adherence rates of 46-83%. Drug induced sleep endoscopy (DISE) helps identify factors contributing to airway obstruction when noninvasive treatments, like CPAP, have failed or are intolerable. This study evaluates the impact of DISE and post-DISE consultations on CPAP adherence and patients' consideration of alternative OSA treatment modalities. Study Design: Single institution retrospective cohort study. Methods: CPAP patients (CPT=94660) who underwent DISE (CPT=42975) were included. DISE findings and post-DISE recommendations were obtained from electronic medical records. CPAP adherence/therapy data, including number of nights used (>/= 4 hours and total), average hours used/night (on nights used and total), CPAP pressure, leak percentile, and residual AHI, were retrieved from ResMed. Adherence was defined as usage >/= 4 hours/night for >/= 70% of nights. Wilcoxon

rank sum, Kruskal-Wallis rank sum, and chi squared tests were performed in R studio. Results: Among 33 DISE patients with available CPAP data, 72.7% continued CPAP post-DISE. Continued usage was significantly associated with better pre-DISE CPAP adherence (p=0.029) and higher average CPAP usage/night on nights used (5.80 vs 3.73 hours, p=0.011). Post-DISE, the proportion of CPAP adherent patients significantly increased from 29.4% to 64% (p=0.028). No significant differences in CPAP usage data were observed pre- and post-DISE. 18.2% (n=6) trialed combined therapy with CPAP and 27.2% (n=9) patients pursued other treatment modalities excluding CPAP. 24.2% (n=8) opted for surgery, 12.1% (n=4) oral appliance therapy or mandibular advancement device, and 3.0% (n=1) weight loss. Conclusions: Patients with higher pre-DISE CPAP adherence and average CPAP usage/night on nights used were more likely to continue CPAP therapy post-DISE. A significantly increased proportion of patients were CPAP adherent post-DISE. These results underscore the potential clinical value of DISE in optimizing personalized treatment strategies for OSA patients who struggle with CPAP adherence.

93. Dysphonia in Cisgender Females Secondary to Testosterone Therapy

Violet Marie Kryzsko, BA, Omaha, NE; Kayley Anderson, BS, Omaha, NE; Bailey Ballock, MD, Omaha, NE; Patricia Foley, MS, Omaha, NE; Ryan Sorenson, BS, Omaha, NE; Jayme R. Dowdall, MD, Omaha, NE

Educational Objective: At the conclusion of this presentation, the participants should be able to recognize the clinical presentation and therapy outcomes of cisgender female patients with dysphonia secondary to testosterone therapy of various formulations.

Objectives: Testosterone therapy has been increasingly available for cisgender females to address various issues including libido, fatigue, and menopausal symptoms despite a lack of FDA approval. This study describes 34 cisgender female patients with dysphonia and vocal virilization secondary to testosterone therapy with emphasis on clinical findings and therapy outcomes. Study Design: Retrospective chart review and descriptive statistical analysis. Methods: Retrospective chart review was completed of cisgender female patients diagnosed with vocal virilization secondary to testosterone therapy by laryngologists from 2016-2022. Demographics, testosterone prescription, clinical and laryngoscopy evaluation, and treatment outcomes were collected for each patient, and descriptive statistical analysis was performed. Results: Thirty-four patients were identified for inclusion. All patients were prescribed various formulations of testosterone, including topical gels, pellets, injections, pills, and compounded creams. The mean Voice Handicap Index (VHI-10) score at presentation was 20 out of 40 (+/- 9.5). The predominant diagnosis was muscle tension dysphonia (64.7%), with vocal fold edema being the most frequent laryngoscopy finding (64.7%). Nineteen patients underwent prescribed voice therapy; six achieved all therapy goals, twelve achieved some but not all goals, and one patient was discharged from therapy without progress toward any goals. The remaining patients were lost to followup. Conclusions: These findings demonstrate the risk of permanent vocal virilization secondary to testosterone therapy, regardless of formulation. This is the largest case series to date that focuses on this known adverse effect. Our results suggest that voice therapy can aid in improvement of symptoms; further research is necessary to assess efficacy in this population.

94. Assessing the Prevalence and Management of Dysphonia in a National Cohort of Parkinson's Disease Patients

Vicki Liu, BS, Tucson, AZ; Dori Smith, DMA MS CCC-SLP, Tucson, AZ; Helena Yip, MD, Tucson, AZ

Educational Objective: At the conclusion of this presentation, the participants should be able to recognize that dysphonia may be underdiagnosed and undertreated in Parkinson's disease (PD) patients. Disparities may influence voice care access as a component of PD management.

Objectives: Approximately 89% of Parkinson's disease (PD) patients present with speech and voice disorders. However, only 3 to 4% receive speech treatment. Cognition, social interaction, and speech are tightly interwoven. Using a national cohort, the objective of this study is to report the incidence of speech evaluations and laryngology procedures in PD patients and explore potential barriers. Study Design: Cross-sectional study. Methods: ICD-9 and ICD-10 codes in the NIH All of Us database were used to identify individuals with PD and dysphonia. Diagnostic voice care was determined using CPT codes for diagnostic flexible laryngoscopy and speech evaluation, while treatment was based on CPT codes for vocal cord augmentation and speech therapy. Chi squared test and logistic regression analyses were conducted to assess the association between voice care access and demographic factors. Results: Of 2,112 PD patients, 272 (12.9%) had a concomitant diagnosis of dysphonia. 1,802 patients (85.3%) received no voice care. Among those with voice care, 288 (13.6%) underwent a diagnostic intervention and 134 (6.3%) received treatment.

Based on adjusted logistic regression models, factors associated with decreased odds of voice care were female sex (aOR = 0.60, 95% CI = 0.44-0.82, p = 0.001) and Hispanic ethnicity (aOR = 0.51, 95% CI = 0.27-0.97, p = 0.04). Conclusions: PD commonly presents with speech disorders. Using a national database, only 12.9% of PD patients had a formal dysphonia diagnosis and only 6.3% received speech treatment. Female sex and Hispanic ethnicity correlated with decreased voice care. This study suggests the under-recognition and undertreatment of dysphonia in PD.

95. ChatGPT, MD: The Use of AI in Responding to Questions about Tonsillectomy for Treatment of Recurrent Tonsillitis

Warren Lin Luo, BS, Washington, DC; Luke Llaurado, BS, Washington, DC; Kishan Shah, BS, Washington, DC; William Zhu, BS, Washington, DC; Earl Harley, MD, Washington, DC

Educational Objective: At the conclusion of this presentation, participants should be able to assess the accuracy and limitations of AI generated responses to tonsillectomy FAQs and identify areas for improvement in patient education.

Objectives: To evaluate the accuracy, comprehensiveness, and safety of ChatGPT's responses to frequently asked questions (FAQs) related to tonsillectomy for the treatment of recurrent tonsillitis. Study Design: Survey study. Methods: In August 2024, ten FAQs on tonsillitis and tonsillectomy were posed to ChatGPT-4o mini. Responses were evaluated by four internal and one external ENT surgeon for quality using a 10 point Likert scale, assessing accuracy, comprehensiveness, and potential harm. Surgeons also provided qualitative feedback. Response readability was measured using ten indexes, averaged to determine the reading grade level. Results: Overall, ChatGPT answered patient questions with a mean accuracy of 8.6 +/- 2.3, comprehensiveness of 8.2 +/- 2.3, and danger of 2.4 +/- 0.6. ChatGPT answered at a mean grade level of 19.9 +/- 20.4. Qualitatively, physician reviewers appreciated the thoroughness of ChatGPT's responses, particularly for covering general preoperative and postoperative guidelines (n=6/10). Additionally, responses were noted for their comprehensive explanations regarding the potential complications of tonsillectomy (n=4/10). However, 3 responses were flagged for omitting critical details about dietary restrictions, such as avoiding dairy products immediately post-surgery to reduce mucus production. Moreover, certain responses lacked specificity regarding postoperative pain management, including the appropriate use of NSAIDs and weight lifting restrictions. In one case, inaccurate procedural terminology was cited, which could confuse patients. Conclusions: ChatGPT provides generally accurate and comprehensive answers to tonsillectomy FAQs, but some responses lack specific postoperative details. Further refinement is needed to ensure that patients receive fully comprehensive and clear information about their care.

96. Assessment of the Clinical Value of the COPE versus Established Laryngology PROMs for Unilateral Vocal Fold Paralysis

Camryn R. Marshall, BS, San Francisco, CA; James J. Lappin, BA, San Francisco, CA; Steve D. Strockton Jr., PhD, San Francisco, CA; Yue Ma, MD, San Francisco, CA; VyVy N. Young, MD, San Francisco, CA; Clark A. Rosen, MD, San Francisco, CA

Educational Objective: At the conclusion of this presentation, the participants should be able to understand the unique contributions and clinical value of the CoPE in patients with UVFP in comparison to traditional laryngology PROMs.

Objectives: Patient reported outcome measures (PROMs) in laryngology capture symptoms related to voice, swallowing, or breathing. The vocal cord paralysis experience (CoPE) was developed specifically to evaluate "disabilities" associated with unilateral vocal fold paralysis (UVFP). Implementation of additional PROMs that overlap with established PROMs will increase patient burden and may contribute to survey fatigue, reducing response quality. This study examines correlations between CoPE and other laryngology PROMs (Voice Handicap Index-10 (VHI-10), Eating Assessment Tool-10 (EAT-10), and Dyspnea Index (DI)) to assess uniqueness and clinical value. Study Design: Prospective correlational study. Methods: Patients with UVFP completed CoPE, VHI-10, EAT-10, and DI. Comparisons across PROMs were performed using Pearson correlations. Results: Eighty patients (34 men, 46 women, mean age 62.6 years) completed 108 sets of PROMs. Mean scores were 43.4 +/- 22 for CoPE, 21.2 +/- 10.2 for VHI-10, 9.2 +/- 8.5 for EAT-10, and 10.5 +/- 9.9 for DI. Comparison of overall CoPE to other laryngology PROMS were performed: CoPE vs. VHI-10 (R=0.596, p=0.000), CoPE vs DI (R=0.424, p=0.000), and CoPE vs EAT-10 (R=0.447, p=0.000). These analyses demonstrated statistically significant, positive correlations for all PROMS. CoPE subscale scores for voice and swallowing similarly demonstrated statistically significant, positive correlations: CoPE voice subscale vs. VHI-10 (R=0.641, p=0.000) and CoPE swallowing subscale vs. EAT-10 (R=0.603, p=0.000). Conclusions: PROMs are critical for assessing

UVFP related functional impairments. The CoPE does not appear to capture unique aspects of the UVFP experience not already covered by VHI-10, DI, and EAT-10. Furthermore, the commonly used laryngology PROMs have broad utility across a wide range of pathologic conditions in laryngology care.

97. Patient Perception of Pain with Medialization Thyroplasty Surgery

Melissa Patry, MD FRCSC, Vancouver, BC Canada; Elnaz Roohi, PharmD, Vancouver, BC Canada; Peter Rose, MD FRCPC, Vancouver, BC Canada; Shamir Karmali, MBBS FRCPC, Vancouver, BC Canada; Amanda Hu, MD FRCSC, Vancouver, BC Canada

Educational Objective: At the conclusion of this presentation, the participants should be able to understand the patient's perception of pain during the medialization thyroplasty (under procedural sedation) and in the postoperative period.

Objectives: To evaluate the patient's perception of pain during and after medicalization thyroplasty (MT) surgery. Study Design: Prospective observational study. Methods: Patients undergoing MT completed the validated short form McGill Pain Questionnaire (SF-MPQ) and Quality of Recovery Scale (QoR-15) before surgery and postoperative days (PODs) 1 and 7; and Voice Handicap Index-10 questionnaire (VHI-10) before surgery and POD7. Demographic and clinical data were collected. Nonparametric tests were conducted for statistical analysis. Results: Forty-two patients (50% male), with a median age of 68 years (IQR 12) were recruited between March 2023 and September 2024. On POD1, 79.5% required analgesia and 46.2% required opioids. Preoperative SF-MPQ was median 0 (IQR 0), which increased significantly on POD1 to 4.7 (IQR 7.5) ($p<0.0001$) and decreased back to baseline on POD7 to median 1.3 (IQR 2.8) ($p = 0.053$). QoR-15 median score on POD7 was 143 (IQR 23), equivalent to preoperative value of 141 (IQR 20.2). Voices significantly improved, from preoperative VHI-10 score of 26 (IQR 19) to POD7 score of 12 (IQR 14) ($p<0.0001$). Conclusions: Although MT was completed under procedural sedation, the pain was well tolerated during and after surgery. Less than half of the patients used opioids for postoperative pain and the levels of pain were mild. There are opportunities for improved opioid stewardship in pain management of this surgery. This study was one of few prospective studies evaluating pain with MT.

98. Uncovering Bias in AI Models for Thyroid Cancer Care: A Systematic Review of Ethnicity, Gender, and Other Social Determinants

Rashi Ramchandani, BHSc MSc, Ottawa, ON Canada; Lisa Caulley, MD MPH PhD, Ottawa, ON Canada; Evan J. Propst, MD MSc, Toronto, ON Canada; Nikolaus Wolter, MD MSc, Toronto, ON Canada; Jonathan Wasserman, MD PhD, Toronto, ON Canada; Jennifer Siu, MD MPH, Toronto, ON Canada

Educational Objective: At the conclusion of this presentation, the participants should be able to 1) understand the landscape of training and validation datasets use for AI thyroid cancer models; 2) observe the proposed roadmap and importance of considerations to make thyroid cancer representative of global epidemiology.

Objectives: 1) To evaluate the representation of diverse populations in AI models for thyroid cancer diagnosis, prediction, and treatment, identifying disparities and biases that may affect outcomes; and 2) to propose strategies for enhancing equity, diversity, and inclusion in AI algorithms for thyroid cancer care, aiming to improve predictive accuracy and generalizability across varied patient demographics. Study Design: Systematic review. Methods: This systematic review adhered to the Cochrane handbook and PRISMA guidelines. A comprehensive literature search was conducted across EMBASE, PubMed, and Google Scholar from inception through January 2024, using keywords related to "artificial intelligence", "thyroid cancer", "diagnosis", "prediction", and "prognosis". Two independent reviewers screened titles and abstracts based on predefined inclusion criteria. Studies were eligible if they involved AI models for thyroid cancer and provided details about training and validation datasets. Studies from around the world were included. Discrepancies were resolved through discussion. Full text assessments confirmed eligibility, and data extraction was performed using a standardized form, capturing study design, AI model characteristics, dataset information, performance metrics, and reported patient characteristics related to ethnicity, gender, and other social determinants. Results: A total of 197 studies were included, with the majority focusing on AI models related to thyroid cancer diagnosis (n=133) and prediction/prognosis (n=47). In studies where AI algorithms were developed for thyroid cancer diagnosis (n=133, 1,107,542 patients), East Asians comprised 76%, while Black patients accounted for only 5.1%, Caucasian patients 2.2%, and Hispanic patients 0.6%. In prediction/prognosis studies (n=47, 114,785 patients), East Asians constituted 50.4%, Black patients 18.8%, Hispanics (0.8%) and Caucasians (7.5%). Across all AI applications, more female participants (n=13,001) were included compared to males (n=4,242). The greatest gender

disparity seen in AI models related to treatment (6,570 females vs. 2,742 males). Factors such as socioeconomic status and genetic profiles were often overlooked. Conclusions: Current AI models for thyroid cancer are not aligned with real world epidemiology for thyroid malignancies. This lack of representative data limits the models' predictive accuracy and generalizability. To enhance the model's predictive ability, training data must mirror the true epidemiological characteristics of thyroid cancer. As such, we propose a roadmap that includes strategies such as global data collaboration, federated learning, and regular bias testing to create more inclusive AI models and ensure equitable outcomes in thyroid cancer care.

99. Beyond HPV Subtypes: Benign Papillomas as a Potential Precursor to Oropharyngeal Cancer

Ross Rosen, MD, Cleveland, OH; Hayley Baker, MD, Cleveland, OH (Presenter); Emily Youner, MD, Cleveland, OH; Todd Otteson, MD, Cleveland, OH; Jason Thuener, MD, Cleveland, OH; Nelson Scott Howard, MD, Cleveland, OH

Educational Objective: At the conclusion of this presentation, the participants should be able to understand the association between benign HPV pathologies and development of oropharyngeal cancer.

Objectives: This database study examines the potential link between benign HPV pathologies such as recurrent respiratory papillomatosis (RRP) and oropharyngeal cancer (OPC). Benign pathologies are typically caused by low risk HPV types 6 and 11, while OPC is associated with high risk HPV subtypes 16 and 18. The research aims to determine if patients with low risk HPV have an elevated risk of developing OPC. Study Design: Retrospective study using a multicenter research network database. Methods: The database TriNetX was searched for adults with RRP using the appropriate ICD-10 codes for benign, HPV associated laryngeal, tracheal, or hypopharyngeal neoplasms and future OPC development. Patients without benign laryngeal, tracheal, or hypopharyngeal neoplasms were used as a control. A similar search was conducted for females with positive low and high risk HPV gynecologic tests and their risk of OPC. Results: Patients with RRP were found to have a 3.81% risk of developing OPC. This is compared to 0.07% risk of the control group developing oropharyngeal cancer ($p<0.001$). Females with positive low risk and high risk HPV DNA tests were also associated higher risk, with risk ratios of 2.42 (95% CI 1.82-3.21) and 1.33 (95% CI 1.10-1.60), respectively. Conclusions: Despite the distinction in HPV subtypes typically associated with benign conditions and cancers, our findings suggest that individuals with benign HPV related pathologies may face an elevated risk of developing HPV associated malignancies. These patients may benefit from further screenings and preventive measures to decrease risks of OPC.

100. Prevalence of Esophageal Motility Disorders in Patients with Laryngopharyngeal Reflux (LPR) Symptoms

Megan Brianne Saltsgaver, BS, Rockford, IL; Theo Covello, BA, South Bend, IN; Madison Cheung, BS, Rockford, IL; Weihai Zhan, PhD, Rockford, IL; Inna A. Husain, MD, Munster, IN

Educational Objective: The objective of this study was to demonstrate the prevalence of esophageal motility disorders among patients suspected to have LPR.

Objectives: To show prevalence of esophageal motility pathology in the workup for suspected LPR. To suggest reduced esophageal clearance may account for symptom manifestation often attributed to LPR. Study Design: Retrospective chart review through EPIC. Methods: Retrospective chart review of all patients clinically suspected to have LPR by a laryngologist who underwent barium esophagram from February 2023-June 2024. Demographics, PROMs, and radiology results were reviewed. Descriptive and inferential statistics were used to describe the data. Results: There were 264 barium esophagrams ordered and completed for patients suspected to have LPR with 43.2% of them showing dysmotility. The average age was 61.5 with 66.5% of patients being female, and 76.9% being Caucasian. There was no significant difference among symptom survey averages in patients with dysmotility compared to normal esophagrams (reflux symptom index: 20.0 vs 19.9, p-value 0.93; EAT10 7.5 vs 6.5, p-value 0.67; cough severity index 10.5 vs 9.9, p-value 0.67). Conclusions: This study provides further evidence that esophageal dysmotility is prevalent in patients suspected to have LPR. Esophageal dysmotility may account for a high rate of treatment failure with PPI's due to decreased reflux clearance and prolonged exposure to stomach contents. Barium esophagram should be used as a noninvasive screening tool in patients with suspected LPR to evaluate for dysmotility. There may be utility in a PROM looking at laryngeal symptoms of esophageal dysmotility.

101. Depression and Anxiety in Patients with Subglottic Stenosis

Lenise G. Soileau, MS, Shreveport, LA; Nizar Tejani, MD, Augusta, GA; Michael Rockwell, MD, Jackson, MS;

Karuna Dewan, MD, Shreveport, LA

Educational Objective: At the conclusion of this presentation, the participants should be able to describe the mental health implications of subglottic stenosis.

Objectives: To determine the prevalence of depression and anxiety in adult patients with subglottic stenosis (SGS) and to identify risk factors for the development of depression and anxiety in the SGS population. Study Design: Retrospective chart review. Methods: This is a retrospective chart review of adults diagnosed with SGS at a tertiary care academic otolaryngology clinic over a 10 year period. Data collection focused on demographics, SGS etiology, disease duration, surgical history, tracheostomy status, medication use, dyspnea index and psychiatric history including anxiety and depression. Results: 246 of 568 patients with SGS met inclusion criteria. The average age was 55 years, with a BMI of 32 and an average SGS diagnosis duration of 5.7 years. Intubation related injury was the most common cause of SGS, 42%. 31.3% of patients had a concurrent diagnosis of depression. Patients with anxiety or depression were significantly older than those without ($p = 0.01$). Patients with intubation related SGS had a significantly higher incidence of depression than patients with SGS of other etiologies ($p= 0.03$). Depression was significantly associated with open surgical procedures compared to endoscopic procedures ($p=0.02$). Patients with a history of tracheostomy were significantly more likely to also have a history of depression than those who had never had a tracheostomy ($p< 0.00$). Conclusions: This study found that anxiety and depression rates in SGS patients were significantly higher than the national average, with key factors including open procedures, intubation related causes, age, and disease duration. Identifying these mental health challenges underscores the need for comprehensive and holistic care in treating SGS.

102. Baseline PSG Predictors for Concentric Collapse on DISE

Shreya Sriram, BS, Baltimore, MD; Allie Berges, MD, Baltimore, MD; Emily Huang, BS, Baltimore, MD; Luu Pham, MD, Baltimore, MD; David Eisele, MD, Baltimore, MD; Kevin Motz, MD, Baltimore, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to identify values on polysomnography which may be predictive for a more severe phenotype of obstructive sleep apnea, characterized by concentric collapse on drug induced sleep endoscopy.

Objectives: Drug induced sleep endoscopy (DISE) offers an anatomic assessment of the upper airway and guides surgical approaches for obstructive sleep apnea (OSA) treatment. Identifying complete concentric collapse (CCC) during DISE at the velopharynx contraindicates treatment with hypoglossal nerve stimulation (HGNS). This study aims to identify which variables on polysomnography may predict CCC. Study Design: Retrospective review. Methods: We reviewed DISE in OSA patients and compared polygraphic findings in patients with CCC to those with non-CCC at the velum. To account for the effects of obesity on collapse patterns, we performed secondary analysis in patients with CCC matched to non-CCC by body mass index a 1:2 ratio. Results: Fifteen and 58 patients were identified with CCC and non-CCC, respectively. The CCC patients were younger (mean = 56.3 versus 62.2 years) more likely to be male (97.3% versus 70.7%), had greater BMI (32.6 versus 28.8, $p<0.001$) and greater severity apnea hypopnea index (AHI) (4%: 51.7 versus 33.1, $p=0.022$). Furthermore, patients with CCC demonstrated significantly more frequent fully occlusive apneas during non-REM sleep (apnea index, 31.1 versus 13.6; $p=0.044$). After BMI matching, CCC patients had significantly higher AHI (4%: 51.7 versus 33.8, $p=0.033$) and non-REM apnea index (31.1 versus 11.3, $p=0.028$). Conclusions: CCC at the velum is associated with higher BMI, increased OSA severity, and apnea index determined by AHI. CCC was independently associated with greater severity of airway obstruction. These findings suggest CCC is not an isolated anatomic finding but likely reflects a more severe OSA phenotype and may explain the reduced efficacy of HGNS therapy in patients with CCC.

103. Pediatric Retrograde Cricopharyngeal Dysfunction: A Case Series

Aidan Powell Wright, BS, Houston, TX; Nathaniel B. Hunter, BS, Houston, TX; Vivian Jin, MD, Houston, TX; Andrew G. Tritter, MD, Houston, TX

Educational Objective: At the conclusion of this presentation, the participants should be able to identify the similarities and unique features of RCPD in the pediatric population compared to the adult population. Participants should also be able to identify special considerations when treating children with RCPD.

Objectives: To review the presentation and treatment outcomes of pediatric patients with retrograde cricopharyn-

geal dysfunction (RCPD). Study Design: Retrospective case series and literature review. Methods: Chart review on presenting symptoms, demographics, treatment protocols, and outcomes of pediatric patients diagnosed with RCPD were reviewed at a single institution. Followup data was collected by phone and chart review. Patients less than 18 years old at initial presentation and intervention were included. Results: Twenty patients were identified (mean +/- SD age, 14.8 +/- 4.2; range 1.2 - 17.7). Thirteen (65%) patients were female and seven (35%) were male; most patients were white (80%). Common referral sources included social media (35%), online search (30%), and healthcare providers (20%). Common presenting symptoms included an inability to belch (100%), excessive flatulence (95%), pain/discomfort (95%), and gurgling sounds from the throat (85%). Nine (45%) patients had social anxiety related to their symptoms prior to intervention. Seven (35%) had alternate diagnoses or were told they did not have RCPD by an outside provider. Seventeen (85%) patients were treated in the OR with botulinum toxin (BT) injection into the cricopharyngeus muscle (CPM). The average duration of followup was 173 days. All patients (100%) experienced symptomatic improvement, with 70.6% noting complete symptom resolution and 29.4% noting reduced symptoms. Conclusions: RCPD can present in the pediatric population with symptoms like those observed in adults. Treatment with BT injection into the CPM often results in complete resolution of symptoms. Given the social implications of RCPD, accurate diagnosis and effective management are critical. Studies investigating long term effects of BT injection for RCPD should be considered.

104. Laryngeal Fracture Open Reduction and Internal Fixation: A Case Series and Surgical Technique Guide

Aaron L. Zebolsky, MD, Memphis, TN; Jillian Krebs, MD, Memphis, TN; Abigail Massey, BS, Charleston, SC; Emily Baker, BS, Memphis, TN; Samuel H. Smith, MD, Memphis, TN; Anas Eid, MD, Memphis, TN

Educational Objective: At the conclusion of this presentation, the participants should be able to provide an overview of techniques for performing open reduction and internal fixation of laryngeal fractures, particularly in the setting of other severe head and neck injuries.

Objectives: Characterize surgical techniques for open reduction and internal fixation (ORIF) of laryngeal fractures using multiple fixation approaches in various clinical scenarios. Study Design: Case series. Methods: Cases of laryngeal ORIF from 2021 to 2024 were reviewed. Patient demographics, trauma data, concomitant injuries, surgical techniques, and outcomes were analyzed. Results: Five patients were included (80% male, age 16 - 68 years) with 4 (80%) thyroid and 2 (40%) cricoid fractures. Three patients (60%) underwent ORIF within 24 hours of injury while two (40%) were delayed. Thyroid fractures were fixated using titanium cranial mesh with 4mm self-drilling screws or polydioxanone suture (PDS; n=1, 25%), a double-y plate with 4mm screws (n=2, 50%), or multiple 2 hole 0.6mm miniplates with 4mm screws (n=1, 25%). Cricoid fractures were repaired with a 4 hole miniplate, 4mm screws, and PDS (n=1, 50%) or with simple 3-0 Vicryl suture (n=1, 50%). Four patients (80%) underwent tracheostomy. One had complete laryngotracheal separation in which the distal trachea was emergently sutured to the neck as with a laryngectomy. One had panfacial fractures requiring a delayed Le Fort ORIF and maxillomandibular fixation. Another had bilateral carotid dissections and underwent carotid bypass grafting. Postoperatively, one patient (20%) had a hematoma requiring evacuation. Two patients had postoperative vocal cord paralysis (unilateral, n=1 [20%]; bilateral, n=1 [20%]). Of the 4 patients with a tracheostomy, 3 were decannulated at 27, 35, and 85 days postoperatively. One remained tracheostomy dependent at most recent followup 77 days postoperatively. There were no deaths over the study period. Conclusions: ORIF of laryngeal fractures is often found with other head and neck injuries and may be successfully performed with various surgical techniques.

OTOLOGY/NEUROTOLOGY

105. Music Exposure as a Form of Music Rehabilitation to Enhance Music Enjoyment following Cochlear Implantation

Isaac Lalakea Alter, AB, New York, NY; Alexander Chern, MD, Baltimore, MD; Megan E. Kuhlmey, AuD, New York, NY; Scott Kelly, BS, New York, NY; Tiffany Hwa, MD, Philadelphia, PA; Anil K. Lalwani, MD, New York, NY

Educational Objective: At the conclusion of this presentation, the participants should be able to 1) understand the relationship between pre- and post-implant music activities and music listening with subjective music enjoyment; and 2) implement these findings to counsel CI candidates regarding expectations for post-implant music enjoyment, and CI users regarding strategies to potentially improve music enjoyment

Objectives: Despite significant software and hardware advances, cochlear implant (CI) recipients generally report

decreased music enjoyment that negatively impacts their quality of life. There is promising, but limited, evidence in support of music rehabilitation following implantation. In this study, we investigate pre and postoperative factors that impact music enjoyment to identify opportunities for enhancing post-CI music enjoyment. Study Design: Cross-sectional. Methods: Unilateral and bilateral CI users recruited from a tertiary academic center and community organizations completed a survey, rating music enjoyment and time spent listening to music on 10 point Likert scales; in addition, participants reported pre- and post-implantation music activities (e.g., choirs, orchestras) and formal musical training. Results: Seventy-two CI users participated: 47 unilateral and 25 bilateral implantees. Preimplantation, participation in musical activities was correlated with increased music enjoyment (8.94 vs. 7.78, p=0.015). Post-implantation, neither pre-implantation formal music training nor music activities were significantly associated with music enjoyment (6.29 vs. 5.45, p=0.26 and 6.43 vs. 5.31, p=0.15, respectively). However, post-implant music enjoyment was positively associated with post-implant music activities (7.83 vs. 5.32, p=0.0052) and time spent listening to music ($\hat{I}^2$=0.82, p<0.0001). Conclusions: Prior musical experience is neither advantageous nor detrimental for post-implantation music enjoyment. However, listening to music and participation in musical activities before and following implantation were associated with greater music enjoyment. These results suggest that beyond time intensive music rehabilitation programs, engagement with music after implantation may play a role in restoring music enjoyment. This should inform ongoing work into music rehabilitation and has significant implications for implantees seeking to improve their appreciation of music.

106. Incidence of Cochlear Facial Nerve Dehiscence and Facial Nerve Stimulation for Cochlear Implant Recipients

Ezer H. Benaim, MD, Chapel Hill, NC; Michael W. Canfarotta, MD, Nashville, TN; Margaret E. Richter, AuD, Chapel Hill, NC; Margaret T. Dillon, AuD PhD, Chapel Hill, NC; Nicholas J. Thompson, MD, Chapel Hill, NC

Educational Objective: At the conclusion of this presentation, the participants should be able to identify cochlear facial nerve dehiscence (CFD) on computed tomography and discuss the incidence of CFD and its association with facial nerve stimulation for cochlear implant users.

Objectives: To characterize 1) the distance between the labyrinthine segment of the facial nerve and basal cochlear turn (cochlear facial nerve partition width [CFPW]); 2) the incidence of cochlear facial nerve dehiscence (CFD); and 3) the relationship between CFPW, CFD, and facial nerve stimulation (FNS) in cochlear implant (CI) recipients. Study Design: Retrospective cohort. Methods: Computed tomography (CT) scans of the temporal bone for adult CI recipients at a tertiary academic center from 2020-2022 were independently reviewed by two surgeons to determine CFPW and CFD. Queried data included demographic information and the presence/absence of FNS. Results: Three hundred fourteen cases were independently reviewed with excellent interrater reliability of CFPW (intraclass correlation coefficient = 0.948) and agreement upon all cases with CFD. The mean CFPW for all recipients was 0.48 mm (range 0-1.1 mm). The incidence of FNS was 7% (n=22). The incidence of CFD was 3.2% (n=10). For the 10 cases of CFD, the presence of FNS was not significantly different for lateral wall (4/6) and precurved (3/4) electrode arrays [risk ratio (RR) = 0.89, 95% CI 0.37-2.43)]. Patients with FNS were more likely to have CFD (RR=32.5, 95% CI 9.6-108.1) and a smaller CFPW (0.32mm vs. 0.50mm, t=4.39, p<0.0001). Conclusions: CI recipients with FNS were more likely to have CFD and a smaller CFPW. The presence of FNS for cases of CFD was not significantly related to the electrode array type. Preoperative CT imaging may be used to predict the likelihood of FNS in individual patients.

107. Comprehensive Analysis of Radiotherapy Treatment in Ceruminous Carcinoma: A Systematic Review

Anusha P. Bharadia, BS, Stratford, NJ; Victoria Youssef, BA, Stratford, NJ; Gabrianna Andrews, BS, Stratford, NJ

Educational Objective: At the conclusion of this presentation, the participants should be able to understand the clinical challenges associated with the rare malignancy of ceruminous carcinoma. They will learn to compare the effectiveness of various treatment modalities, including surgery, radiotherapy, and combined approaches. Participants will recognize the role of postoperative radiotherapy in managing advanced or high risk cases, based on both case reports and SEER data. They will also identify gaps in current research and understand the need for further studies to refine treatment strategies for improved outcomes in ceruminous carcinoma.

Objectives: Ceruminous carcinoma is a rare malignancy of the ceruminous glands in the external auditory canal, representing approximately 2.5% of all external ear neoplasms. Due to its rarity, optimal treatment guidance is limited. This systematic review evaluates the role of radiotherapy in ceruminous carcinoma, comparing its effectiveness to

surgery and combined treatment modalities. Study Design: This systematic review assesses the role of radiotherapy in ceruminous carcinoma treatment by comparing radiotherapy, surgery, and combined modalities. It includes case reports and a SEER database analysis to evaluate survival and recurrence outcomes. Methods: A comprehensive search was conducted in PubMed, Scopus, Embase, and Web of Science, along with a SEER (Surveillance, Epidemiology, and End Results) database study analysis. Search terms included 'ceruminous carcinoma', 'ear wax cancer', 'ceruminoma', 'radiotherapy', and 'surgery'. Studies published in English after 2000 were included, focusing on therapeutic approaches and outcomes of ceruminous carcinoma. Out of 340 identified records, 11 case reports, including a SEER database analysis, met the inclusion criteria. Peer reviewed case reports, cohort studies, and database analyses were included, while studies published before 2000 or without full text were excluded. Two independent reviewers extracted data on demographics, tumor characteristics, treatment, and outcomes, adhering to PRISMA guidelines. Discrepancies were resolved by consensus with a third reviewer. Data from the SEER study were incorporated to provide additional population-level insights. A narrative synthesis was conducted, focusing on treatment modalities and outcomes. Results: Eleven studies were reviewed, primarily case reports and the SEER database analysis. Surgery was the most common treatment approach, often supplemented with adjuvant radiotherapy in patients with high risk histological features. Radiotherapy alone was associated with shorter survival (median 45 months), surgery alone yielded a median survival of 111 months (p= 0.252), and surgery combined with radiotherapy showed a mean survival of 107 months. The SEER analysis supported these findings, showing that surgery significantly improved survival outcomes and highlighted the higher recurrence rates associated with radiotherapy alone. Postoperative radiotherapy is recommended in advanced or high-risk cases to enhance local control. Conclusions: When negative margins are attainable, surgical resection alone remains the primary treatment for ceruminous carcinoma. While radiotherapy is less effective than monotherapy, it plays a critical role in postoperative management for advanced or higher risk cases. Additional research, including randomized controlled trials and meta-analyses, should be conducted to understand the significance of varying treatment modalities and better standardize treatment modalities in patients diagnosed with ceruminous carcinoma. Individualized treatment plans and further research, including large scale data from resources like SEER, are necessary to refine the role of radiotherapy and improve outcomes for this rare malignancy.

108. Contribution of Tinnitus Burden and Hearing Loss to Depression in Elderly Populations

Joseph Elliott Chamoun, BA, Cincinnati, OH; Daniel Q. Sun, MD, Cincinnati, OH; Mekibib Altaye, PhD, Cincinnati, OH; Meredith Tabangin, MPH, Cincinnati, OH; Steven A. Gordon, MD MPH, Cincinnati, OH

Educational Objective: At the conclusion of this presentation, the participants should be able to understand the importance of controlling for tinnitus in the study of hearing loss and depression among older adults.

Objectives: Determine if tinnitus is a potential confounding variable in the study of hearing loss and depression in older populations. Study Design: Cross-sectional analysis. Methods: Data from the 2005-2006, 2009-2010 and 2017-2020 National Health and Nutrition Examination Survey was analyzed. The eligible subpopulation (n equals 2,352) was aged greater than 69 years. A logistic regression model used depression as the binary response variable and tinnitus burden and speech frequency hearing loss as the primary predictor variables. The covariates of race, gender, income, age, education, marital status, cancer, diabetes, cardiovascular disease and body weight were used for the adjusted regression model. Results: Hearing loss was not significantly associated with increased risk of depression in this cohort. Surprisingly, mild speech frequency hearing loss showed a mild potential protective effect [adjusted OR (95 percent CI) = 0.57 (0.33-0.99), p equals 0.047]. Importantly, a high tinnitus burden was a large and statistically significant risk factor for depression in both unadjusted and adjusted models [adjusted OR (95 percent CI) = 7.25 (3.48-15.08), p less than 0.001]. Conclusions: Increasing tinnitus burden acts as a significant risk factor in the development of depression for adults greater than 69 years old even while accounting for measured hearing loss. Most studies outlining the impact of hearing loss on depression have not adequately controlled for tinnitus. These findings suggest that tinnitus, rather than hearing loss itself, is potentially the driving factor in the relationship between hearing loss and depression for older adults.

109. How Tranexamic Acid Affects Operative Time and Bleeding Control in Ear Surgeries: A Systematic Review and Meta-Analysis

Piotr Domaszewski, BS, Stratford, NJ; Brandon Goodwin, DO, Stratford, NJ; Ayman Khatib, BS, Stratford, NJ; Adrianna Hekiert, MD, Bridgewater, NJ

Educational Objective: At the conclusion of this presentation, the participants should be able to determine the effica-

cy of tranexamic acid in ear surgeries on operative time, bleeding control, and mean arterial pressure.

Objectives: Tranexamic acid (TXA) is an antifibrinolytic that has been used for the control of hemostasis in various surgeries. Due to restricted access to the operative field in otologic surgery, the risk of complications increases in the absence of adequate visualization of the surgical field. TXA may be a possible remedy to reduce intraoperative bleeding and improve the surgical field. Study Design: A systematic review was conducted following the 2020 PRISMA guidelines. Methods: 5 databases were used (PubMed, Cochrane, Scopus, Web of Science, and Embase). A search yielded 73 articles. 31 were duplicates, and 42 were screened for by two authors. Results: The search yielded five final studies, including 2 on mastoidectomies, 1 on microscopic middle ear surgery, 1 on tympanotomy, and 1 on endoscopic ear surgery. TXA had a significant reduction in operative time (Cohen's D= -0.31), which was statistically insignificant (p= 0.32). There was also a decrease in bleeding volume (Cohen's D= -1.13) that was statistically significant (p= 0.00). Lastly, TXA showed a decrease in MAP (Cohen's D= -0.80), which was statistically significant (p= 0.00). Conclusions: This meta-analysis demonstrated that TXA reduced bleeding and MAP with large effect sizes that were both statistically significant. TXA also reduced operative time, but with a small effect size that was statistically insignificant. While no analysis was performed for physician satisfaction, it was reported that satisfaction was higher with the use of TXA. In summary, TXA could be a valuable means of controlling the amount of bleeding while decreasing MAP during ear surgeries and improving the overall quality of visualization.

110. Benign Paroxysmal Positional Vertigo and Concomitant Peripheral Vestibular Dysfunction

Carly Fiest, BA, New York, NY; Jennifer Ren, BA, New York, NY; Maura Cosetti, MD, New York, NY; Jennifer Kelly, PT DPT NCS, New York, NY

Educational Objective: At the conclusion of this presentation, the participants should be able to discuss the relationship between benign paroxysmal positional vertigo (BPPV) and peripheral vestibular dysfunction.

Objectives: Identify a correlation between unilateral benign paroxysmal positional vertigo and same side unilateral peripheral vestibular dysfunction. Study Design: Cross-sectional analysis. Methods: Clinical records of 315 patients who underwent Dix-Hallpike maneuver testing for BPPV and videonystagmography (VNG) testing for peripheral vestibular dysfunction were obtained and analyzed. BPPV diagnosis was conferred by a positive Dix-Hallpike maneuver and a diagnosis of peripheral vestibular dysfunction was conferred by a caloric weakness percentage of greater than 25%. Results: A total of 277 patients did not have a BPPV diagnosis. Out of those patients, 212 had no associated caloric weakness and 65 had a unilateral caloric weakness. A total of 38 patients had a unilateral BPPV diagnosis. Out of those patients, 33 had no caloric weakness and 5 had a same side unilateral caloric weakness. A chi square independence test showed that there was no significant correlation between a unilateral BPPV diagnosis and a same side unilateral VNG weakness (p-value = 0.152). Conclusions: These findings support the current diagnostic guidelines for BPPV that recommend against VNG testing for differential diagnosis of BPPV. The results also underscore the need for more research to better understand if concomitant vestibular dysfunction contributes to BPPV.

111. Raising Hearing Health in an Urban Setting: Community Audiometry Screening

Afash Haleem, BA, Newark, NJ; Shrey B. Shah, BA, Newark, NJ; Robert W. Jyung, MD, Newark, NJ; Yu-Lan Mary Ying, MD, Newark, NJ

Educational Objective: At the conclusion of this presentation, the participants should be able to understand the value of utilizing a community screening tool for improving adult hearing loss awareness.

Objectives: This pilot study demonstrates the ability of community audiometry screening to improve hearing loss awareness and screening accessibility among adults in an urban setting. Study Design: Pre/post observational study design. Methods: Six 3 hour hearing screenings held at a public library, a quiet, accessible, and frequented branch, from August to December 2023. Library patrons (n = 48) completed a hearing test using the hearWHOpro app, a validated digits in noise test, followed by educational counseling. A scaled hearing score out of 100 was recorded from the hearWHOpro app for each participant. Demographics, overall satisfaction, and self-assessed hearing awareness both before and after screening were recorded. Results: The mean age was 46.6 years old (SD: 18.3). 55.3% of library patrons were female. Library patrons self-identified as 70.8% Black, 12.5% Hispanic, 10.4% White, and 6.3% other. The average hearing score from hearWHOpro was 56.8 (SD 16.4), with six library patrons scoring below 50, indicating a need for followup with an audiologist. Library patrons' self-assessed hearing awareness significantly decreased after the screening (8.0/10 before vs. 7.1/10 after), suggesting increased awareness of their potential hearing deficits

(p = 0.04). Overall satisfaction with the screening process was high, with an average rating of 9.41/10. Conclusions: Community audiometry screening successfully increased awareness and provided valuable, accessible screening services in an underserved community. Expansion to other community access points will further increase accessibility and reduce the burden of undiagnosed hearing loss.

112. Diagnostic Accuracy of the Bedside Hum Test for Identifying Conductive Hearing Loss

Randall Harley, MD, Philadelphia, PA; Garv Mehdiratta, BA, Philadelphia, PA; Yoojin Jo, BA, Philadelphia, PA; Michael J. Ruckenstein, MD, Philadelphia, PA; Tiffany P. Hwa, MD, Philadelphia, PA; Kevin Wong, MD, Philadelphia, PA

Educational Objective: At the conclusion of this presentation, the participants should be able to understand how to perform the hum test and discuss how accurate the hum test is for identifying conductive hearing loss when compared to the tuning fork exam and pure tone audiometry.

Objectives: Tuning fork tests (TFTs), including Weber and Rinne, are reliable ways to identify conductive hearing loss (CHL). However, tuning forks are frequently unavailable in many inpatient and ambulatory healthcare settings. The hum test (HT) has been anecdotally used for many years as a bedside test to detect CHL when a tuning fork or audiometry is unavailable. This study evaluates the diagnostic accuracy of HT. Study Design: Cross-sectional study. Methods: 50 subjects with unilateral CHL and normal contralateral hearing as confirmed on pure tone audiometry were included. All subjects underwent the HT and TFTs. The HT was performed by having a subject hold out a continuous hum for 5 seconds, then indicating if their voice was perceived louder on one side; this was repeated in three states (high pitched hum, low pitched hum, and natural hum). TFTs were performed using a 512hz fork. Results: HT had a sensitivity of 78% (39/50) for identifying CHL. HT identified CHL when tuning forks were falsely negative in 4 cases; tuning forks identified CHL when HT was falsely negative in 6 cases. Average air bone gap (ABG) between those with abnormal and normal HTs was 21dB and 20dB, respectively. There was no significant difference in ABG, speech reception threshold, or word recognition scores between patients with normal and abnormal HTs. McNemar's test demonstrated strong agreement between HT and TFT (P = 0.75). Conclusions: The hum test is a viable alternative to the tuning fork exam for identifying CHL in situations where a tuning fork may be unavailable, with strong agreement and comparable diagnostic accuracy.

113. Automated Systematic Review Screening with a Large Language Model (LLM) in Otolaryngology

Akash Kapoor, BS, New York, NY; Isaac Lalakea Alter, AB, New York, NY; Mickie J. Hamiter, MD, Tampa, FL; Anil K. Lalwani, MD, New York, NY

Educational Objective: At the conclusion of this presentation, the participants should be able to 1) describe the applications and limitations of large language models in systematic review; and 2) understand the accuracy of a large language model when streamlining a systematic review undertaken by humans.

Objectives: Systematic literature reviews are time intensive and resource consuming. While large language models (LLMs) are promising, their ability to conduct the complex text analysis necessary for systematic reviews in otolaryngology remains unexplored. In this study, we investigate an LLM's performance in selecting relevant articles and extracting data for systematic reviews. Study Design: This study is a validation study comparing the performance of a large language model (ENTGPT) to human reviewers in selecting articles and extracting data for an otolaryngology systematic literature review. Methods: ENTGPT (based on GPT-4o) was compared to two human reviewers in article inclusion/exclusion decisions. ENTGPT was provided with inclusion and exclusion criteria, titles, abstracts, and full texts (if available) of the 741 articles retrieved in the original search. For articles lacking abstracts or full texts, ENTGPT made decisions based on the available information. The model's decisions were compared to those made by two human reviewers. For the final set of included articles, ENTGPT was asked to extract data from the abstracts or full texts (e.g., study design, number of patients, main outcomes) and the accuracy of this extraction was manually assessed. Results: ENTGPT achieved 100% accuracy in article classification compared with human reviewers (95% CI: 0.99 - 1.0). When given only titles and abstracts, accuracy declined to 90% (95% CI: 0.88 - 0.92), including 3% false negatives and 7% false positives. The model also extracted the requested data with 100% accuracy (95% CI: 0.97 - 1.0). Conclusions: ENTGPT accurately replicated human reviewers in article selection and data extraction for an otolaryngology systematic review. This performance suggests that LLMs can significantly streamline the systematic review process, potentially saving substantial time and resources for researchers. Further research is needed to address limitations on larger datasets and improve accuracy when only titles and abstracts are available.

114. Cardiovascular Risk Scores as Predictors of Idiopathic Sudden Sensorineural Hearing Loss: Evidence for a Possible Etiology?

Dean Kennedy, MSc, Boston, MA; Yash Shroff, BS, Boston, MA; Julia Gardland, BS, Boston, MA; Genevieve N. Dupuis, BS, Boston, MA; Jessica Levi, MD, Boston, MA

Educational Objective: Participants should be able to identify the relationship between cardiovascular risk factors and the occurrence of sudden sensorineural hearing loss (SSNHL). They will understand how commonly used cardiovascular risk scores, such as the Framingham Risk Score and CHA2DS2-VASc, can be utilized to assess the likelihood of developing SSNHL. Additionally, participants will gain insight into the evidence supporting a cardiovascular etiology of SSNHL

Objectives: To evaluate the association between cardiovascular risk scores (Framingham Risk Score and CHA2DS2-VASc) and the occurrence of sudden sensorineural hearing loss (SSNHL) using a large scale national dataset. Study Design: Retrospective cohort study. Methods: This study utilized the 2020 Nationwide Readmissions Database (NRD) to identify patients diagnosed with SSNHL using ICD-10 code H912. Cardiovascular risk scores were calculated for all patients based on ICD-10 proxies for age, sex, diabetes, hypertension, and other comorbidities. Comparisons of risk scores between patients with SSNHL and without SSNHL were performed using weighted t-tests and Wilcoxon rank sum tests. Logistic regression was used to evaluate the impact of individual cardiovascular risk factors on SSNHL occurrence. Results: A total of 384 patients with SSNHL and 32,335,812 without SSNHL were identified in the NRD. Patients with SSNHL had significantly higher average FRS and CHA2DS2-VASc scores compared to those without SSNHL ($p < 0.0001$). Logistic regression revealed that age, high blood pressure, total cholesterol, diabetes, and vascular disease were all significantly associated with increased odds of SSNHL. Conclusions: Cardiovascular risk scores, particularly the Framingham Risk Score and CHA2DS2-VASc, are significantly associated with the risk of SSNHL. Given the ease of calculating these scores in clinical practice, they may serve as valuable tools for identifying patients at higher risk for SSNHL, warranting closer monitoring and early intervention.

115. Symptom Profiling of Patients Recommended Vestibular Rehabilitation Therapy

Devin Kennedy, BS, Miami, FL; Jacquelyn Golden, BS, Miami, FL; Saara Khan, BS, Miami, FL; Michael Hoffer, MD, Miami, FL; Erin Williams, MSBE, Miami, FL

Educational Objective: At the conclusion of this presentation, the participants should be able to understand key symptom characteristics of patients recommended vestibular rehabilitation therapy including duration, severity, and symptom phenotype clustering by diagnosis.

Objectives: Elucidate common symptomatic features experienced by patients with vestibular dysfunction warranting vestibular rehabilitation therapy (VRT) recommendation and examine factors influencing VRT effectiveness. Study Design: Through a prospective survey, patients (n=122) recommended VRT completed an online questionnaire pertaining to patient demographics, socioeconomic status, diagnosis, symptom characteristics, and VRT. Methods: Patients provided information regarding their vestibular diagnosis and symptom types, duration, and severity. We collected time to VRT participation, duration, and self-reported VRT helpfulness. Logistic regression examined relationships between symptom severity and latency from symptom onset to receiving VRT against VRT helpfulness. Symptom profiles were characterized based on vestibular pathologies, to include the presence of hearing loss, tinnitus, vertigo/dizziness, stress/anxiety, and facial nerve involvement. Results: Participants were on average 54.3 (+/- 11.0) years old and distributed 88.3% female and 11.7% male. Mean symptom onset to VRT participation was 2.8 (+/- 2.0) years. We observed that greater symptom severity and increased time from symptom onset to starting VRT were both negatively correlated with VRT helpfulness, though this was not significant (p greater than 0.05). Patients with vestibular schwannoma and vestibular neuritis had the most symptomatic complaints prior to beginning VRT. Of the vestibular schwannoma patients, symptoms included hearing loss (81.0%), tinnitus (90.5%), vertigo/dizziness (71.4%), anxiety/stress (61.9%), and facial nerve involvement (38.1%). Similarly, amongst 26 patients experiencing vestibular migraine, symptoms included hearing loss (18.2%), tinnitus (68.2%), vertigo/dizziness (81.8%), anxiety/stress (59.1%), and facial nerve involvement (4.6%). Conclusions: Vestibular symptom profiles and time to VRT may impact overall VRT effectiveness. Further investigation into factors influencing VRT outcomes, including standardization of VRT treatment, is required.

116. Prevalence and Risk for Anxiety and Depressive Symptoms in Adults with Vestibular Disorders: A

Systematic Review and Meta-Analysis

Cory Hyun-su Kim, BS, Charleston, SC; Lauren R. McCray, BS, Charleston, SC; Shaun A. Nguyen, MD, Charleston, SC; Jeffrey P. Staab, MD, Rochester, MN; Habib Rizk, MD, Charleston, SC

Educational Objective: To advance our understanding of psychiatric comorbidity in patients with vestibular disorders.

Objectives: To derive more precise estimates of the prevalence of anxiety and depressive disorders in patients with any vestibular illness and common vestibular disorders. Study Design: A systematic review with meta-analysis. Methods: A systematic search of CINAHL, Cochrane Library, PubMed, PsycINFO and SCOPUS was conducted in accordance with PRISMA guidelines. Primary outcome measures included continuous measures (mean), proportions (%), and relative risks (RR) with 95% confidence intervals (CI). Results: Eighty-six studies (N=764,239) pertaining to anxiety, depression and vestibular disorders in adults were included. Mean age for vestibular and control groups were 50.3 and 46.7; proportions of females were 63.8% and 64.3%, respectively. The group with any vestibular disorder had significantly higher prevalence and relative risk than the control group of clinically meaningful anxiety (29.7% vs. 7.6%, p<0.0001; RR = 1.45, 95% CI: 1.05-2.02, p<0.00001) and depressive (25.2% vs. 3.6%, p<0.0001; RR = 2.86, 95% CI: 1.77-4.62, p<0.00001) symptoms. Rates of anxiety and depression were significantly higher in patients with BPPV (29.2%, 21.9%), Meniere's disease (44.9%, 39.7%), vestibular migraine (48.7%, 33.7%), and vestibular neuritis (18.8%, 17.4%) than in the control group (all p<0.0001). Rates were higher for all episodic disorders than vestibular neuritis (all p<0.0001). Patients with unspecified peripheral vestibular disorders had a significantly higher prevalence of depression (6.48%) (p<0.0001) but not anxiety than the control group. Conclusions: This meta-analysis provided the most precise estimates to date of prevalence and relative risk of anxiety and depressive disorders in patients with vestibular illnesses. The greater risk in patients with episodic disorders versus vestibular neuritis (single event) has implications for underlying mechanisms of vestibular psychiatric comorbidity.

117. Investigating the Association between Cocaine Use and Hearing Loss: An NHANES Study

Joshua S. Lin, MD, Los Angeles, CA; Matthew E. Lin, MD, Los Angeles, CA; Tyler J. Gallagher, BS, Los Angeles, CA; Neil N. Luu, MD, Los Angeles, CA; Seiji B. Shibata, MD PhD, Los Angeles, CA; Janet S. Choi, MD MPH, Los Angeles, CA

Educational Objective: At the conclusion of this presentation, the participants should be able to discuss how increased lifetime cocaine use is associated with higher likelihood of subjective and objective hearing loss, as captured by the nationally representative data collected from the National Health and Nutrition Examination Survey (NHANES).

Objectives: Cocaine is the second most abused recreational substance after cannabis in the United States. The increasing cocaine related hospitalizations demands public health awareness. With recent case reports highlighting hearing loss (HL) following cocaine use, we sought to examine how cocaine use is associated with HL. Study Design: Cross-sectional study. Methods: Analyzing data from the 2017-2018 National Health and Nutrition Examination Survey, adults greater than or equal to 18 years who had complete data on audiometry measured and self-reported hearing and lifetime cocaine use (n=3980) were included. Lifetime cocaine use was stratified into heavy (>/= 50), moderate (20-50), and low (/= 25dB HL. Multivariable logistic regression analyses were performed to assess the association between cocaine use and HL while accounting for age, gender, race, socioeconomic status, and health comorbidities. Survey weights were utilized for all analyses. Results: Twelve percent (95% CI=[11.0%-14.9%]) of the cohort reported among life time cocaine use. Our multivariable model accounting for relevant demographics and clinical factors reported >/= 50 lifetime use to associated with self-reported HL (OR=1.86, 95% CI=[1.18-2.95]) relative to cocaine non-users. Similarly, lifetime cocaine use of 1-5 times (OR=3.79, 95% CI=[1.51-10.22]) and 6-10 times (OR=6.23, 95% CI=[1.91-20.32]) were significantly associated with higher odds of audiometry measured HL than non-users. Conclusions: Heavy cocaine use was associated with both objective and subjective HL. Both moderate and low cocaine use were associated with objective HL; moderate cocaine use exhibited a higher likelihood of objective HL than low cocaine use. Further studies are needed to evaluate the underlying pathophysiology between cocaine consumption and HL.

118. Workplace Accommodations for Workers with Hearing Loss: A Scoping Review with Implications for Education

Geethanjeli N. Mahendran, MD MPH, Boston, MA; Heather M. McClure, BS, Farmington, CT (Presenter); Stacey Gray, MD, Boston, MA; Alicia Quesnel, MD, Boston, MA; Jenny X. Chen, MD EDM, Baltimore, MD

Educational Objective: At the conclusion of this presentation, participants should be familiarized with current workplace accommodations for workers with hearing loss (WHL). The secondary objective is to identify the application of these accommodations to improve the educational experience for healthcare trainees with hearing loss.

Objectives: To highlight current workplace accommodation for workers with hearing loss (WHL) with specific emphasis on those in the healthcare sector. To identify how current accommodations could be used to improve the educational experience for healthcare trainees with hearing loss. Study Design: Scoping review. Methods: Four databases (Embase, Ovid Medline, Web of Science and CINAHL Complete) were searched using keywords related to workplace accommodations for WHL. A priori inclusion and exclusion criteria were applied by two authors independently reviewing each article, while a third author resolved any discrepancies. Results were reported according to PRISMA-ScR guidelines. Results: Of the 393 publications identified in the database searches and 8 publications identified from manual bibliographic searches, 11 studies were included. All articles were cross-sectional surveys or qualitative studies. These articles included 714 WHL in a range of workplace settings. 151 (21.1%) and 43 (60.2%) of WHL used personal assistive listening devices (PALD) and American Sign Language, respectively. Among WHL, 254 (35.6%) were healthcare workers. The most common accommodation was the use of captioning technology and PALD. Among healthcare WHL, the use of amplified stethoscopes was frequently highlighted. Additional accommodations desired among healthcare WHL included increased advocacy, financial assistance with PALD, improved technology and implementation of transparent face masks. There was limited commentary on the specific application of these accommodations for medical and surgical trainees, although many might be applicable. Conclusions: While several workplace accommodations have been implemented, there is still room for improvement. Improved accommodation tailored to the needs of healthcare WHL could improve retention, productivity, and patient safety, particularly for trainees.

119. Complications Associated with the Middle Fossa Repair of Superior Semicircular Canal Dehiscence

Cheikh S.A. Mballo, BS MA, Los Angeles, CA; Hong-Ho Yang, BS, Los Angeles, CA; Isaac Yang, MD, Los Angeles, CA; Quinton Gopen, MD, Los Angeles, CA

Educational Objective: At the conclusion of this presentation, the participants should be able to recognize the complications associated with superior semicircular canal dehiscence (SSCD) repair via the MCF approach.

Objectives: Superior semicircular canal dehiscence (SSCD) is characterized by the abnormal thinning or absence of bone overlying the superior semicircular canal. Surgical repair is indicated for patients with disabling symptoms not resolved by conservative therapy. Repair via the middle cranial fossa (MCF) approach permits direct visualization and access to the defect. This study aims to evaluate the complications following the MCF repair of SSCD. Study Design: Retrospective chart review. Methods: A review of consecutive MCF repairs of SSCD conducted at a medical center from 2011 to 2022 was performed. Postoperative followup focused on the identification and documentation of complications. The most recent data from patient records were included in the analysis. Results: A total of 426 SCCD repairs were analyzed. Intraoperatively, cerebrospinal fluid (CSF) leaks occurred in 20.4% (n=87) of cases. Postoperative complications included facial paralysis in 2.2% (n=8), benign paroxysmal positional vertigo (BPPV) in 1.9% (n=7), otomastoiditis in 1.9% (n=7), wound infections in 1.9% (n=7), sensorineural hearing loss in 1.9% (n=7), falls in 1.6% (n=6), syncope episodes in 1.1% (n=4), otitis media in 0.8% (n=3), brain abscess in 0.5% (n=2), and perilymphatic fistula in 0.3% (n=1). Most postoperative complications resolved spontaneously or with conservative management. One patient required facial nerve decompression and an asymmetric brow lift due to persistent facial paralysis. Conclusions: The MCF repair of SSCD is associated with a low risk of complications, with the most common being intraoperative CSF leak, postoperative facial paralysis, and BPPV. Most complications are self-limited or manageable with conservative care.

120. Characterization of Nasopharyngeal Anatomy in Patients with Patulous Eustachian Tube

Zain Mehdi, BA, Houston, TX; Dominique Paderin, BS, Houston, TX; Aatin Dhanda, MD, Houston, TX; Heli Majeethia, BS, Houston, TX; Kenny Lin, MD, Houston, TX; Jeffrey T. Vrabec, MD, Houston, TX

Educational Objective: At the conclusion of this presentation, the participants should be able to understand the unique anatomical differences in the nasopharynx of patulous eustachian tube patients.

Objectives: The pathophysiology of patulous eustachian tube (PET) remains poorly understood. Our previous research suggests that aberrant nasopharyngeal airflow may contribute to symptoms. This study seeks to characterize

nasopharyngeal anatomy in patients with PET. Study Design: Single center, retrospective review. Methods: Recent head CT scans were reviewed for a cohort of patients with diagnosed PET and compared to scans of a matched control cohort. The following locations within the nasopharynx were measured (in mm) bilaterally on CT: lateral recess length and diameter; eustachian tube (ET) orifice diameter and depth; inferior turbinate posterior pharynx extension; and nasopharynx length, width, and cross-sectional area. Results: 32 PET patients had prior CT imaging. 13 PET patients' symptoms lateralized to the right, 12 to the left, and 7 bilaterally. When compared to controls, PET patients demonstrated significantly larger lateral recesses and ET orifices: right lateral recess length (6.77,4.37, p-value = 0.036) and diameter (4.25,2.59, p-value = 0.0002); right ET orifice diameter (5.64,4.68, p-value = 0.0064) and depth (6.74,5.03, p-value = 0.0021); left lateral recess length (6.61,4.43, p-value = 0.053) and diameter (4.25,2.53, p-value = 0.0001); left ET orifice diameter (5.17,4.48, p-value = 0.041) and depth (6.97,5.31, p-value = 0.0054). Additional measurements were not significantly different: right inferior turbinate extension (2.20,1.38, p-value = 0.560); left inferior turbinate extension (2.46,1.39, p-value = 0.378); nasopharynx length (20.8,20.4, p-value = 0.636), width (20.5,20.3, p-value = 0.723), and cross-sectional area (429,412, p-value = 0.513). The only significant difference noted in a subgroup analysis of PET patients with laterality to the right, left, or bilateral demonstrated a larger left lateral recess in patients with left laterality compared to right: (5.15,3.62, p-value = 0.01). Conclusions: PET patients appear to have larger air space volume within the nasopharynx compared to controls, specifically within the lateral recess and ET orifice. PET laterality does not correlate with differences in nasopharyngeal measurements. This is the first study to characterize the anatomy of the nasopharynx in PET patients

121. A Scoping Review of Uncommon Hearing Instability Disorders

Jeremiah Olabosipo, MS, Washington, DC; Christina Zhu, BS, Washington, DC; Julia Telischi, BS, Miami, FL; Michael Hoa, MD, Washington, DC

Educational Objective: At the conclusion of this presentation, the participants should be able to understand the scope of etiologies that lead to presentations of hearing instability, which are characterized by sudden or fluctuating sensorineural hearing loss (SNHL). Excluding more common etiologies (Meniere's, sudden SNHL, autoimmune inner ear disease, and enlarged vestibular aqueduct syndrome), recognition of less common etiologies can improve diagnostic awareness and prompt targeted treatment strategies.

Objectives: The aim of this scoping review is to identify and categorize uncommon disorders of hearing instability, enabling a better understanding of their clinical presentations and treatments. Study Design: Scoping review. Methods: A comprehensive literature search was performed across Medline, Web of Science, Embase, and Cochrane Central. A total of 328 studies were included after screening, and data from 2,478 patients was extracted. Categories of diagnoses included hematologic, vascular, oncologic, infectious, genetic, and metabolic origins. Data collected included hearing loss type (sudden, fluctuating, or both), associated symptoms, comorbidities, treatments administered, and hearing recovery outcomes. Results: The most common etiologies per study were infectious (26.2%, n=86 studies), vascular (25%, n=82 studies), and oncologic (24.1%, n=79 studies). Among patients, 88.1% exhibited sudden hearing loss, while 9.8% experienced fluctuating hearing loss. Oncologic related hearing instability had the highest number of total patients (n=1229 patients), predominantly involving vestibular schwannomas (n=582 patients) while infectious diseases had the second highest number of patients (n=493 patients), with cytomegalovirus as the most reported infection (n=146 patients). Average age across cases was 45.9 years (range: 2-93). Conclusions: Hearing instability can arise from a variety of uncommon causes. Increased awareness of these conditions may help clinicians initiate appropriate treatment sooner, potentially improving patient outcomes.

122. Tinnitus Talk: Public Forum Assessing Trends in Tinnitus Management

Devanshi Patel, BA, Newark, NJ; Christopher Tseng, MD, Newark, NJ; Yu-Lan Mary Ying, MD, Newark, NJ

Educational Objective: At the conclusion of this presentation, the participants should be able to better understand current popular trends among patients for tinnitus management.

Objectives: Tinnitus is characterized by a perception of sound without an identifiable source. It is a challenging otolaryngology condition that has no definitive or agreed upon treatment. The objective is to understand current popular trends among patients for tinnitus management. Study Design: Database and literature review. Methods: An online public support forum, Tinnitus Talk, where users can communicate online about their experiences with tinnitus treatments, was searched for management strategies. These strategies were grouped into main categories: supplements, medications, dietary changes, spirituality/meditation, masking, stem cells, behavioral therapy, chiro-

practic, acupuncture, laser/light therapy, nerve/electric stimulation, physical therapy/exercise, specialists, TMJ, eustachian tube dysfunction, and miscellaneous. Results: A total of 637 original posts from 2011-2022 were analyzed. The most frequently encountered treatment modality was supplements (36.42%) such as vitamins and natural plant based compounds. Other frequently discussed treatment modalities were physical therapy/exercises (10.2%) such as massages, masking (9.11%) using sound therapy or hearing aids, medications (5.97%), dietary changes (5.65%) such as drinking green tea, nerve/electric stimulation (4.24%), and consulting specialists or specialty clinics (4.08%). Other less popular modalities included spirituality/meditation (2.98%), behavioral therapy (2.98%), laser/light therapy (2.67%) particularly using low light laser therapy, stem cell therapy (1.88%), eustachian tube dysfunction (0.94%), chiropractic (0.78%), TMJ (0.63%), and acupuncture (0.47%). Conclusions: The three commonly used treatment modalities are supplementations, physical therapy/exercise, and masking. However, current published guidelines do not conclusively recommend supplements or physical therapy. With these results, clinicians should be aware of therapies that continue to be commonly used for tinnitus to better inform clinician patient discussions.

123. Kcnab2 Expression in Auditory Brainstem Is Modulated by Cochlear Activity and Kcnab2 Deletion Mice Exhibit Audiogenic Seizures

Erik Vo, MS, Dallas, TX; Hitomi Sakano, MD PhD, Dallas, TX (Presenter); Christopher G. Hoffman, BS, Dallas, TX; Sophia B. Kirkland, MS, Dallas, TX

Educational Objective: At the conclusion of this presentation, the participants should be able to understand that Kcnab2 expression in the auditory brainstem is modulated by hearing and reduction of Kcnab2 may lead to auditory hypersensitivity.

Objectives: An initial survey of a voltage gated potassium channel subunit, Kcnab2, in the mouse auditory brainstem. Kcnab2 was previously identified as a possible gene candidate for hyperacusis through a transcriptomic screen using cochlear nuclei of the Fmr1 knockout (KO) mouse, an autism model that exhibits behaviors of auditory hypersensitivity. Here, we characterize the expression pattern of Kcnab2 in the auditory brainstem; the effect of cochlear damage on Kcnab2 levels in cochlear nucleus; and the audiogenic seizure rates with Kcnab2 deletion. Study Design: Basic science. Methods: Immunohistochemistry of mouse brain using Kcnab2 specific antibody. Quantitative reverse transcription polymerase chain reaction to measure Kcnab2 expression in cochlear nucleus after unilateral cochlear ablation on adult mice. Testing of Kcnab2 KO and wildtype (WT) mice for audiogenic seizures to 120dB noise. Results: Kcnab2 is expressed most strongly in the cochlear nucleus and superior olivary complex in the mouse auditory brainstem. Hearing loss from cochlear damage reduces the expression of Kcnab2 in cochlear nucleus of WT mice, but not in Fmr1 KO mice which already have reduced levels at baseline. The audiogenic seizure rates and scores were significantly higher in Kcnab2 KO mice compared to WT mice. Conclusions: Kcnab2 is expressed in auditory brainstem nuclei. Hearing loss from cochlear damage reduces the expression of Kcnab2 in WT cochlear nucleus, indicating that there is activity dependent neuroplasticity of Kcnab2 expression in WT that is lacking in Fmr1 KO mice. Kcnab2 KO mice exhibit audiogenic seizures, which phenocopies the Fmr1 KO mice and may indicate auditory hypersensitivity.

124. Conductive Hearing Loss Is Associated with Depression and Dysthymia in the All of Us Research Program

Hannah N.W. Weinstein, BA, New York, NY; Lauren H. Tucker, BA, New York, NY; Michael W. Denham, MD MS MPhil, New York, NY; Justin S. Golub, MD MS, New York, NY

Educational Objective: Participants will appreciate the relationship between conductive hearing loss (CHL), depression, and dysthymia.

Objectives: Studies have shown associations between sensorineural hearing loss and depression. There has been little investigation of hearing loss types, including conductive. We investigate if there is an association between CHL and depressive disorders in a large national cohort. Study Design: Cross-sectional epidemiologic study. Methods: >\= 18 years old participants (n=399,927) from the NIH All of Us Research Program were included. The exposure was CHL defined by ICD-10 codes (H90.0-90.2). The outcome was depressive disorders defined by major depressive disorder (ICD-10 F32-33) or dysthymia (ICD-10 F34.1). The odds of depression or dysthymia in subjects with and without CHL were assessed with univariable and multivariable regression, controlling for age, sex, and education. Results: Mean (SD, range) age was 56 years old (+/- 17, 20-124); 242,911 (60.7%) identified as female. The cohort included 1,274 (0.3%) participants with CHL. Controlling for covariates, the odds of major depressive disorder increased by 3.6 times (95% CI 3.2-4.0; p<0.0001) for those with CHL compared to those without CHL. Controlling for covariates, the odds of dysthymia increased by 4.3 times (95% CI 3.3-5.5; p<0.0001) for those with CHL compared to those without

CHL. Conclusions: CHL is strongly associated with major depressive disorder and dysthymia in the All of Us Research Program. To our knowledge, this is the first study to report on an association between CHL and depressive disorders. This suggests that hearing loss, regardless of its underlying etiology, is related to psychologic disorders.

125. Allergies Positively Influence Recovery from Sudden Sensorineural Hearing Loss following Standard Treatment

Lucienna Wolf, BS, Miami, FL; Devin Kennedy, BS, Miami, FL; Valerie Yunis, MSBE, Miami, FL; Matthew Wiefels, BS, Miami, FL; Erin C. Williams, MSBE, Miami, FL; Michael E. Hoffer, MD, Miami, FL

Educational Objective: At the conclusion of this presentation, the participants should be able to understand how various comorbidities may influence recovery from sudden sensorineural hearing loss (SSHL) following standard treatment modalities.

Objectives: Investigate the impact of frequently observed comorbidities on recovery outcomes following treatment with oral and intratympanic steroids for sudden sensorineural hearing loss (SSNHL). Study Design: Through retrospective chart review, participants (n=260) with SSNHL who underwent standard treatment modalities for SSNHL were identified. Methods: Each chart was reviewed for presence of comorbidities at the time of first SSHL diagnosis, steroid treatment modalities, and audiological outcomes following treatment. Frequencies for prevalent comorbidities were calculated, and treatment response was defined by the AAO-HNS Clinical Practice Guidelines as no response, partial recovery, and complete recovery. Multiple correspondence analysis (MCA) was utilized to identify symptom clustering patterns and subsequent logistic regression models were employed as predictors against recovery outcomes. Results: Three proportional odds logistic regression models accounting for 27% of the variance were generated. Allergy consistently had a significant positive effect on recovery outcomes (OR: ~2.66, p=0.01), while conditions like anxiety, GERD, diabetes, sleep apnea, and hypertension showed no significant effects (p=0.05). The presence of asthma was also positively correlated with recovery outcomes but was not significant. Thresholds between recovery groups were significant in the first two models accounting for the dimensions 1 and 2. Conclusions: Allergy had a positive impact on hearing recovery in patients with first time diagnoses of SSHL. Further investigation is needed to understand the role of immune activation in SSNHL pathogenesis, changes in response over time, and clinical differentiation versus similar conditions (i.e., autoimmune inner ear disease) for more targeted management of SSNHL.

126. Insights into Tympanic Membrane Calcification in Tympanic Membrane Regeneration Therapy

Tomoya Yamaguchi, MD, Osaka, Japan; Shin-ichi Kanemaru, MD PhD, Osaka, Japan; Rie Kanai, MD, Osaka, Japan; Toshiki Maetani, MD PhD, Osaka, Japan; Ryohei Yuki, MD, Osaka, Japan; Razumu Shirai, MD, Osaka, Japan

Educational Objective: At the conclusion of this presentation, the participants should be able to investigate the characteristics of calcification cases in tympanic membrane regeneration therapy.

Objectives: To analyze the age distribution, causes, and outcomes of tympanic membrane calcified cases, and explore management strategies for calcification. Study Design: Retrospective cohort study. Methods: Tympanic membrane regeneration therapy (TMRT) involves mechanically creating a fresh wound around the edge of the perforation, filling the inside and outside of the tympanic cavity with gelatin sponge infiltrated with basic fibroblast growth factor, and covering with fibrin glue. In principle, all calcifications were removed. TM regeneration is confirmed approximately three weeks later, and up to four treatments can be performed. 381 patients who underwent this treatment were divided into two groups based on whether or not they had preoperative calcification, and the TM closure rate, age distribution, causes, adverse events. were compared. Results: Calcification was observed in 68.2% (260/381) of cases, and in both groups, the majority of patients were in their seventies. In patients aged 60 years or older, the incidence was 72.7% in the calcified group and 55.4% in the non-calcified group. In patients aged less than 30 years, the incidence was 13.5% in the calcified group and 17.4% in the non-calcified group. The main cause of perforation in both groups was chronic otitis media. In patients aged less than 30 years, tube insertion was more common in the calcified group (25.7%) and trauma was more common in the non-calcified group (47.6%). The closure rate was 98.1% in the calcified group and 96.7% in the non-calcified group. Adverse events with TMRT did not differ between the two groups. Conclusions: Calcification appears to be associated with prolonged inflammation and tube insertion. High closure rates were observed regardless of the presence or absence of calcification.

PEDIATRIC OTOLARYNGOLOGY

127. Presentation and Management of Orbital Floor Fractures at a Level 1 Pediatric Tertiary Care Hospital

Kamar Abdullahi, BS, Minneapolis, MN; Sivakumar Chinnadurai, MD MPH, Minneapolis, MN; Brianne Roby, MD, Minneapolis, MN

Educational Objective: At the conclusion of this presentation, the participants should be able to understand the common presentations, surgical techniques, and management of pediatric orbital floor fractures.

Objectives: To aid in the clinical decision making involved with pediatric orbital floor fractures. Study Design: Cross-sectional study. Methods: A retrospective chart review of children (ages 0-18) seen at a level 1 pediatric tertiary care hospital between January 2000 to January 2024 for orbital floor fractures. Data was collected on demographics, presentation, management and complications. Results: A total of 138 patients (ages 1-17) were identified with an average age of 10.9 years old at presentation. A majority of patients were male (69.57%), and Caucasian (61.59%). Common causes of orbital floor fracture included sports injury (39.3%), falling (12.1%) and assault (11.4%). A subset of patients presented with muscle entrapment (17.3%) and oculocardiac reflex (5.1%). Surgical management was indicated for 29.2% of patients with a transconjunctival approach being the most commonly used technique (97.2%). A majority of surgical repairs utilized resorbable implants (72.2%). No significant differences were found in short term complications between resorbable versus non-resorbable implants. Diplopia was found to be statistically significant both as an indication for surgery ($p<0.001$) and as a short term complication of surgery ($p = 0.011$). Conclusions: Pediatric orbital floor fractures can be caused by mechanisms of injury that differ from those seen in adult populations. Surgical repair was most commonly done using a transconjunctival approach and resorbable implants. However, no differences in short term complications between non-resorbable versus resorbable implants were observed. Diplopia may be a helpful indication for surgery, however, surgery may not always immediately resolve double vision.

128. Sociodemographic Disparities in Adenotonsillectomy Utilization among Children with Moderate to Severe Obstructive Sleep Apnea

Brandon A. Aguilar, BS, Pittsburgh, PA; Luke J. Schloegel, MD, Oakland, CA

Educational Objective: At the conclusion of this presentation, the participants should be able to delineate why children with moderate to severe OSA by PSG did not undergo adenotonsillectomy and understand sociodemographic differences that may lead to opportunities for improvement in adenotonsillectomy utilization.

Objectives: There is limited research on the determinants influencing the decision by patient and family to proceed with adenotonsillectomy (AT) in the setting of moderate to severe obstructive sleep apnea (OSA) by polysomnogram (PSG). For this study, sociodemographic data and patient/family preferences were reviewed in a group of children with moderate to severe OSA who chose not to pursue AT. This study aimed to identify disparities that would lead to opportunities for improvement in adenotonsillectomy utilization. Study Design: Retrospective case control study. Methods: Retrospective analysis was conducted on children aged 3-12 diagnosed with moderate to severe OSA via polysomnography (PSG) in a comprehensive healthcare system from December 2016 to May 2019. Variables collected included age at PSG, body mass index (BMI), race/ethnicity, zip code, primary language, tonsil size, and apnea hypopnea index (AHI). Individual chart review identified reasons for not electing surgery, such as fear of complications, pursuing other treatments, or failure to schedule. Patients who did not undergo AT were compared to those who did. Results: Among 246 children diagnosed with moderate to severe OSA, 67 (27.2%) did not undergo surgery, while 179 (72.8%) did. The non-surgical group's mean age, BMI%, and AHI were 6.4, 69.5, and 12.0, respectively. In contrast, the surgical group had mean values of 5.9, 63.4, and 16.6. Analysis showed that Hispanic patients in the non-surgical group had a larger number of parents who did not schedule surgery and had greater concerns about surgical complications. Conclusions: Children with moderate to severe OSA who did not pursue surgery had similar health and demographic variables as those who did. A larger portion of patients who did not followup with scheduling and had fear of complications were Hispanic. Addressing these concerns may improve surgical uptake in this subgroup.

129. Characterization of Pathophysiological Immune Markers in PANDAS Patients: Insights from a Prospective Cohort Study of Tonsillectomy Patients

Deeptha Bejugam, BS, Washington, DC; Jasmine Gulati, MAPP, Washington, DC; Veranca Shah, BS, Washington, DC; Earl H. Harley, MD FAAP FACS, Washington, DC

Educational Objective: At the conclusion of this presentation, the participants should be able to identify key markers (IL-17A, FoxP3+) in PANDAS, explain their role in neuroinflammation, and discuss potential therapies like secukinumab and the role of ENTs in PANDAS diagnosis and management.

Objectives: PANDAS (pediatric autoimmune neuropsychiatric disorders associated with streptococcal infections) is a condition characterized by sudden onset neuropsychiatric symptoms in children following streptococcal infections, which are thought to trigger an autoimmune response. This study evaluates if PANDAS patients demonstrate a significantly different number of immune markers which may contribute to its pathogenesis and recurring flares. Study Design: Prospective cohort study. Methods: This study utilized immunohistochemistry (IHC) to analyze mucosa samples from 21 clinically diagnosed PANDAS patients and 6 controls who underwent tonsillectomy with or without adenoidectomy. Expression levels of CD3+, CD4+, CD25+, FoxP3+, IL-17A+, and RORÎ³t+ markers, obtained as percentages of the total cells in the mucosa samples, were compared between the two groups. Results: Mean age of the PANDAS cohort was 11.4 years (SD 3.9) and 10.1 years (SD 6.2) for the control cohort. Mann-Whitney tests for mucosa IHC data revealed statistically significant higher levels of cells with FoxP3+ (2.00% v 0.00%, p = 0.0166) and IL-17A+ (1.00% v. 0.00%, p = 0.04298) markers in PANDAS patients compared to controls. No significant differences were observed for CD3+, CD4+, CD25+, or RORyt+ markers between PANDAS and control groups. Conclusions: The elevated levels of IL-17A and FoxP3+ cells in PANDAS patients align with recent literature emphasizing the role of Th17 lymphocytes and regulatory T (Treg) cells in PANDAS/PANS pathology. Increased IL-17A supports the hypothesis of persistent neuroinflammation, while elevated FoxP3+ expression may indicate a potentially dysregulated Treg response. These results highlight the need for further research into anti-IL-17A therapies, such as secukinumab, and their potential therapeutic benefits in managing PANDAS. These findings emphasize the role of an interdisciplinary approach that includes ENT related and immunological interventions to manage and treat PANDAS effectively.

130. Economic Evaluation of Tympanostomy Tube Placement

Keith Dylan Brendes, BA, Phoenix, AZ; Chase Beckerman, BS, Phoenix, AZ; Mark Evan Gerber, MD, Phoenix, AZ

Educational Objective: At the conclusion of this presentation, the participants should be able to understand the economic benefits of using the Hummingbird Tympanostomy device to both the patient and the hospital system. Because of the device's efficacy and ease of use, it allows far more pediatric patients to have ear tube placement procedures completed in the clinic, as opposed to requiring the procedure to be done in the OR. This results in saving all parties involved, including the patient, insurance, and hospital systems, time and money, in addition to avoiding the additional risks of completing the procedure in the OR.

Objectives: The purpose of this study is to compare the economics related to the placement of ear tubes in office using the Hummingbird device versus ear tube procedures completed in the operating room (OR). We aim to make clear the financial discrepancy between these methods of tympanostomy tube placement for all parties including the family and insurer. Study Design: A retrospective chart review was completed for patients <18 years requiring tympanostomy tube placement between from 12/1/21-3/1/24. Methods: Patients were identified and separated into two cohorts: Hummingbird tube placement in office versus standard tube placement in the OR. Patients who were billed for another service on the same day or those who were considered medically complex were excluded from the study. Financial data, including the type of insurance and billed charges, were compared amongst the two cohorts. These cohorts were further divided into public versus private insurance. The groups were compared using paired t-tests. Results: 168 patients were included, 84 from each cohort. P values of less than 0.05 were obtained in comparing the total cost of the procedure between the Hummingbird and OR cohorts. The average total cost for the Hummingbird procedure across all groups was $808, while that for the OR procedure was $2535. Conclusions: Study results demonstrate a significant decrease in overall cost for both the family and insurer when ear tubes are placed in office using the Hummingbird device compared to the standard placement in the OR, while avoiding common risks of completing any procedure in the OR.

131. Parental Tobacco Use and Pediatric Dysphagia: Assessing the Impact of Secondhand Smoke on Swallowing Difficulties in Children

Jonathan M. Carnino, BS, Boston, MA; Frances Rodriguez Lara, MD, Boston, MA; Elizabeth M. Puyo, BA, Boston, MA; Chelsea A. Sykora, MD, Portland, OR; Megan Willis, MS, Boston, MA; Jessica R. Levi, MD, Boston, MA

Educational Objective: At the conclusion of this presentation, the participants should be able to identify the relationship between parental tobacco use and the occurrence of dysphagia symptoms in pediatric patients, explaining potential mechanisms by which secondhand smoke exposure may contribute to swallowing difficulties in children. They should be able to discuss the clinical implications of secondhand smoke on pediatric respiratory and swallowing health, recognizing the importance of assessing parental smoking habits when evaluating pediatric patients with dysphagia. Additionally, participants should be equipped to propose strategies for educating parents on the health risks that tobacco use may pose to their child's swallowing function and overall wellbeing, and to summarize the study's findings within the context of public health considerations for children exposed to secondhand smoke.

Objectives: This study aimed to evaluate the impact of parental tobacco use on dysphagia symptoms among pediatric patients, particularly focusing on the influence of secondhand smoke on swallowing health. Study Design: We conducted a retrospective interview based study analyzing a cohort of pediatric patients who underwent modified barium swallow (MBS) testing and/or clinical feeding evaluations. Methods: Data were collected from 113 participants regarding parental smoking status (never, former, or current smoker), age, marital status, and socioeconomic indicators. Children's dysphagia symptoms were categorized by difficulties with solids, soft foods, and liquids, as well as incidents of coughing or choking during meals. Descriptive and multinomial logistic regression analyses were conducted, controlling for confounders such as child age, sex, race, and family income. Results: Of the sample, 83% had nonsmoking parents, 8% had parents who currently smoked, and 9% had parents who were former smokers. Children of current smokers exhibited significantly higher odds of daily dysphagia with liquids (OR: 9.11, 95% CI: 1.31-63.44) and more frequent incidents of coughing or choking while eating. Former smokers' children showed an increased risk of sometimes experiencing coughing or choking (OR: 8.16, 95% CI: 1.32-50.46). Symptoms were less prevalent among children of nonsmokers, with most reporting no swallowing difficulties. Conclusions: Parental tobacco use, particularly current smoking, appears to be associated with higher rates of dysphagia symptoms in children. These findings underscore the potential risks of secondhand smoke, highlighting the importance of tobacco cessation to reduce pediatric dysphagia risk and improve health outcomes. Further research is needed to explore the underlying biological mechanisms.

132. Evaluating the Impact of "Heads Up Football" Campaign on Pediatric Football Related Facial Trauma: A 20 Year Review

Kenechukwu C. Charles-Obi, MS, Philadelphia, PA; Nathaniel Tchangou, BS, Philadelphia, PA; Papa Abdoulaye Diack, MS, Philadelphia, PA

Educational Objective: At the conclusion of this presentation, the participants should be able to appreciate the impact of the "heads up football" campaign and associated safety interventions on the incidence of football related facial trauma in the pediatric population.

Objectives: 1) Understand the key principles of the heads pp football (HUF) campaign and its safety protocols; 2) evaluate the effectiveness of the HUF campaign in reducing the incidence of football related facial injuries in the pediatric population since its implementation in 2012; 3) identify the trends in pediatric facial trauma related to football and recognize how safety interventions have influenced these trends. Study Design: Retrospective analysis. Methods: Data from the National Electronic Injury Surveillance System (NEISS) was collected and analyzed from the year 2004 to 2023. Facial trauma injury was defined by avulsion, contusion or abrasions, crushing, fracture, hematoma, hemorrhage, laceration and nerve damage affecting the head and neck region. The head and neck region included the following parts of the body: head, face, and mouth. Children were aged 5-18 years old. Facial trauma injuries from periods 2004-2012 and 2013-2023 were compared. A t-test was used to assess the statistical significance of the differences in injury rates between the two periods. Results: There was a steady decrease in injuries starting from 2012 (n=18,045) until 2018 (n=11,385), before increasing in 2019 (n=17,489). The lowest year was 2020 (n=5,589). The highest year was 2006 (n=25,417). Overall, the total number of facial trauma injuries was 183,073 from 2004-2012, and 179,766 from 2013-2023. There was a significant reduction in facial trauma injuries between the two periods after implementation of the safety policy ($p = 0.0000684$). Conclusions: The findings suggest that the heads up football campaign and other safety protocols have contributed to a reduction in pediatric football related facial trauma. These results highlight the importance of safety interventions in sports, particularly for younger athletes, and provide evidence supporting continued education and enforcement of injury prevention measures in football.

133. WITHDRAWN - Pediatric Post-Tonsillectomy Hemorrhage Management: A Cross-Sectional Otolaryngology and Emergency Medicine Survey

Dylan Zayne Erwin, MD, San Antonio, TX; Matthew Y. Liu, MD MPH, San Antonio, TX; Whitney W. Schwarz, MD, San Antonio, TX; Andrew D. Meyer, MD MS, San Antonio, TX; Marisa A. Earley, MD MBA, San Antonio, TX; Mark R. Zonfrillo, MD MSCE, Providence, RI

134. Attentional Performance in Children with Sleep Disordered Breathing

Daniel C. Fong, BS, Baltimore, MD; Nithya Navarathna, BS, Baltimore, MD; Sophia Uddin, MD PhD, Baltimore, MD; Heather Bortfeld, PhD, Merced, CA; Amal Isaiah, MD PhD MBA, Baltimore, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to recognize the weak correlations between parent reported behavior and psychometrically assessed attention in children with SDB and appreciate the implications when considering surgical management.

Objectives: Sleep disordered breathing (SDB), characterized by habitual snoring and sleep disruption, affects 10% of children, and negatively impacts their behavior, specifically attention. Clinically significant SDB is typically managed by adenotonsillectomy, a procedure performed in 500,000 children/year. As SDB treatment is principally driven by parental reports, the extent of bias in reporting a child's attentional performance is unknown. Therefore, our primary aim was to assess the correlation between qualitative parental reports and quantitative measures of attention in children with SDB. We hypothesized that parent reports of behavior correlate with quantitative assessments of attention in children with SDB. Study Design: We performed a prospective observational study of children aged 5-11 years with SDB. They were administered the Flanker Inhibitory Control and Attention (Flanker) assessment while parents completed the Behavior Rating Inventory of Executive Function (BRIEF). Methods: The Flanker test measures response inhibition and provides an objective quantitative measure of attentional performance. The BRIEF provides a qualitative measure of a child's executive function, including attention. We assessed the correlations between Flanker age corrected standard scores and the BRIEF-2 initiate and inhibit subscale t-scores. Results: We included 64 children (mean age 7.9 years, 53.1% male) with SDB. The sample was predominantly Black (59.0%), non-Hispanic (88.5%), and publicly insured (74.6%). Weak negative correlations were observed between Flanker scores and BRIEF-2 initiate (Ï=-0.14, P=0.27) and Inhibit (Ï=-0.20, P=0.126) subscales. Conclusions: These results suggest that parent reports of behavior in children with SDB poorly correlate with their psychometrically assessed attentional performance. Clinicians should be aware of the potential parental bias when considering surgical management in children with SDB.

135. WITHDRAWN - A Comparison of Dexmedetomidine and Propofol DISE Sedation Protocols

Norman R. Friedman, MD, Aurora, CO; Kaitlin E. Olson, MS, Aurora, CO; Luka Bahra, BS, Aurora, CO; Thanh Nguyen, MD, Aurora, CO

136. Demographic Influences on Treatment and Comorbidities in Pediatric Head and Neck Vascular Malformations

Brandon M. Hemeyer, BS, Salt Lake City, UT; J.B. Eyring, BS, Salt Lake City, UT; Brock T. Coleman, BS, Salt Lake City, UT; Audrey M. Wade, BS, Salt Lake City, UT; Reema K. Padia, MD, Salt Lake City, UT

Educational Objective: At the conclusion of this presentation, the participants should be able to identify demographic factors that influence treatment pathways and the development of comorbidities in pediatric patients with head and neck VMs.

Objectives: Head and neck vascular malformations (VMs) require complex management that may be influenced by social determinants of health. This study aimed to assess how demographic characteristics and socioeconomic status (SES) affect the treatment course and comorbidities associated with vascular malformations. Study Design: A retrospective review of 301 patients with VMs seen at a large, quaternary care hospital between 2010-2024 was performed. Exclusion of adults and VMs outside of the head and neck yielded a final cohort of 229 patients. Methods: Demographic characteristics included sex and race/ethnicity. Patient SES was approximated using 2020 census tract derived median household income, percentage of households receiving food stamps, and income to poverty ratio, obtained from the AHRQ Social Determinants of Health database. VM characteristics included location and volume. Outcomes included treatment with sclerotherapy or surgery and the development of comorbidities such as obstructive sleep apnea (OSA) and dysphagia. Statistical analyses included t-tests, linear regression, and chi square tests, which were performed using SAS 9.4. Results: Female patients had smaller VMs on average (23.9 cm3 vs. 60.8 cm3, $p<0.05$) and were more likely to undergo surgical excision (47.8% vs. 34.5%, $p<0.05$). No significant differences in the development of OSA or dysphagia were found based on sex. Patients receiving sclerotherapy were more likely

to live in areas with lower median household income and higher poverty rates ($p<0.05$). Patients who underwent surgery were more likely to live in areas with a higher percentage of households receiving food stamps ($p<0.05$). SES variables were not associated with the development of OSA or dysphagia. Conclusions: The findings suggest that patient sex and SES may influence differences in access and clinical decision making in VM management. Female patients, despite presenting with smaller VMs, were more likely to undergo surgical excision. Patients in lower SES areas were more likely to receive interventions like sclerotherapy and surgery. Future research is needed to further explore these associations and promote equitable care.

137. Development of a Deep Learning Pipeline for Automated and Efficient Computation of Tonsil and Adenoid Segmentation Volumes from MRI Scans

Adway Kanhere, MSE, Baltimore, MD; Cody H. Savage, MD, Baltimore, MD; Nithya Navarathna, BS, Baltimore, MD; Vishwa S. Parekh, PhD, Baltimore, MD; Prashant Raghavan, MD, Baltimore, MD; Amal Isaiah, MD PhD MBA, Baltimore, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to understand the use of artificial intelligence for the automated calculation of tonsil and adenoid segmentation volumes in pediatric MRI scans.

Objectives: 1) Develop an efficient deep learning model for automated tonsil and adenoid segmentation in pediatric MRI scans; and 2) quantify the accuracy of the automated volume calculations compared to manual segmentation. Study Design: Retrospective analysis of MRI data from the nationwide Adolescent Brain Cognitive Development study using the baseline dataset (v4.0). Methods: We developed a deep learning pipeline using the nnU-Net framework with a 3D full resolution residual encoder U-Net configuration. The tonsils and adenoids were segmented using standard anatomic landmarks. Training used five-fold cross-validation with Dice score, a measure of spatial similarity (0 none to 1 perfect), and cross-entropy loss functions on five NVIDIA RTX A6000 GPUs. Results: Using 103 randomly selected T2 weighted MRI scans (85 training, 18 testing) from the baseline dataset (mean age: 8 years [95% CI, 9-11 years], 17.5% Black), our model achieved mean Dice coefficients of 0.95 (95% CI, 0.94-0.97) for tonsils and 0.96 (95% CI, 0.95-0.97) for adenoids. The mean absolute volume difference between manual and automated segmentation was 0.33 (95% CI, 0.22-0.45 cmÂ³) for the tonsils and 0.56 cmÂ³ (95% CI, 0.33-0.79 cmÂ³) for adenoids. Conclusions: Our custom deep learning pipeline demonstrates high segmentation accuracy. These results represent a crucial step towards developing ultrasound based volume computation for preoperative assessment, addressing the current practice of performing most adenotonsillectomy based on symptoms alone. This could enable large scale research on adenotonsillar size and pediatric health outcomes, leading to refined clinical guidelines and more objective preoperative assessments.

138. An Assessment of Early Life Hearing Loss: A Risk Factor Analysis

Richard Kijoon Kim, BS, Richmond, VA; Kelley M. Dodson, MD, Richmond, VA

Educational Objective: At the conclusion of this presentation, the participants should be able to understand the current state of hearing loss risk factor reporting in the United States, as well as identify key areas for improvement.

Objectives: Evaluate JCIH hearing loss risk factor reporting in newborns in the United States over the ten year period between 2011-2021 and identify gaps in risk factor reporting nationwide. Study Design: This was an IRB exempt, 10 year retrospective meta-analysis study using anonymized data collected by each state's EHDI program. Reports of JCIH risk factors and prevalence of later confirmed hearing loss were aggregated for analysis. Methods: We contacted EHDI representatives from all 50 states as well as Puerto Rico and the District of Columbia to request anonymized risk factor data and rates of hearing loss on a state by state basis. Data was collected for the years 2011, 2016, and 2021, when available. States that were unable to provide such data were noted and excluded from analysis. Results were binned by geographic region and compared via Pearson's chi square test. Results: Risk factor analysis on a nationwide level is currently impossible, despite the existence of nationwide EHDI programs for over 20 years. Of the U.S. states and territories contacted, six have responded and are willing to provide anonymized hearing loss and risk factor data, and responses from the remaining 44 states and 2 territories are pending. Conclusions: There are currently significant gaps in the collection and reporting of hearing loss risk factor data in newborns. Though participation in newborn hearing screening and EHDI programs continues to increase, this gap in data reporting represents a major opportunity for improvement.

139. Examining Audiometric Screening Outcomes in Pediatric Patients of Non-Native English Speaking Families

Christopher Peter Kruglik, MSc MPH, Burlington, VT; John L. Rustad, BA, Burlington, VT; Josephine Yalovitser, BA, Burlington, VT; Jonathan Chen, BS, Burlington, VT; Andrea Green, MD, Burlington, VT; Daniel A. Gerges, MD, Burlington, VT

Educational Objective: At the conclusion of this presentation, the participants should be able to identify the disparities in audiometric screening among non-native English speaking pediatric patients and recognize the impact of cultural and language barriers on health literacy and access. Furthermore, they should be able to discuss the importance of targeted interventions and enhanced provider education to improve adherence to American Academy of Pediatrics (AAP) guidelines and ensure equitable access to hearing assessments for non-native English speaking children.

Objectives: This is the first study in the literature that explores disparities in audiometric screening among pediatric non-native English speakers. Study Design: Retrospective cohort analysis. Methods: A retrospective review was conducted on 172 patients seen for well child visits at ages 4, 5, 6, or 8 between January 2020 and December 2021. Inclusion criteria included patients who were ages 9 through 13 to capture the well child checks of interest. Exclusion criteria encompassed patients who had documented hearing loss before age 4 or had prior involvement with otolaryngology or audiology services before age 4. Patient demographics and audiometric screening data were collected to assess compliance with AAP guidelines. Statistical analyses included independent t-tests to compare demographic variables and Fisher's exact test to evaluate differences in audiometric screening rates between the English preferred and non-English preferred groups. Results: A total of 172 patients were grouped into English preferred (N = 86) and non-English preferred (N = 86). The mean age of participants across both groups was 10.8 years (p=0.83), with all patients enrolled in state insurance and a near equal distribution of males and females. The most common non-English languages spoken were Nepali (41.9%), Mai Mai (11.6%), and Swahili (8.1%). English preferred patients who attended appointments were 1.2 times more likely to receive audiometric screenings. A statistically significant difference was observed in screening rates at the 4 year well child visit, with 72% of English speakers screened versus 55% of non-English speakers ($p<0.04$). There was no statistically significant difference in screening occurrence at 5, 6, and 8 year visits. Conclusions: Our study demonstrates the critical disparities in audiometric screening among non-native English speaking children, with fewer non-native English speaking patients screened for hearing loss at age 4. The findings indicate that patients who first engaged with the new American refugee clinic at age 4 faced challenges in receiving timely audiometric assessments, largely due to the complexities of their medical needs and care coordination. This underscores an urgent need for targeted interventions aimed at bias mitigation and enhanced provider education to ensure equitable access to hearing assessments.

140. Eustachian Tube Dysfunction and Associated Otologic Disease in Children with Trisomies: An Epidemiological Study Using a Large Multi-Institutional Database

Justin G. Lau, BS, Cleveland, OH; David C. Kaelber, MD PhD MPH, Cleveland, OH; Todd D. Otteson, MD MPH, Cleveland, OH

Educational Objective: At the conclusion of this presentation, the participants should be able to identify the prevalence and risk for eustachian tube dysfunction and other otologic complications in children with trisomy syndromes.

Objectives: This study seeks to characterize the prevalence of eustachian tube dysfunction (ETD) and related otologic complications in children with trisomies 13, 18, and 21 compared to a control population using a large multi-institutional database. Study Design: Retrospective cohort study. Methods: TriNetX was queried on 7/3/24 for three cohorts of patients </=18 years with trisomy 13, 18, or 21, respectively. A control cohort was queried to include patients </=18 years without any diagnosis of trisomy 13, 18, or 21. The relevant outcomes that were recorded were ETD, otitis media, cholesteatoma, conductive hearing loss, TM perforation, TM retraction, and tympanostomy tube placement. A secondary query was performed excluding cleft palate diagnoses in the trisomy cohorts and the same outcomes were recorded. Results: The trisomy 13, 18, and 21 cohorts had 728, 1408, and 39694 patients, respectively. Compared to control, the trisomy cohorts had increased risk of eustachian tube dysfunction, with relative risks of 9.246 (95% CI: 8.041-10.633), 7.464 (95% CI: 6.655-8.371), and 10.476 (95% CI: 10.292-10.633), respectively. The trisomy cohorts also had higher risk for all other otologic outcomes as well. Trisomy 21 had the highest risk for conductive hearing loss (14.579, 95% CI: 14.268-14.896), while trisomy 13 had the highest risk for cholesteatoma (36.345, 95% CI: 22.018-59.993) and TM perforation (10.853, 95% CI: 8.091-14.557). The trisomy cohorts excluding cleft pal-

ate showed decreased risk for the reported outcomes relative to the initial cohorts, but the relative risks were still statistically significant compared to control. Conclusions: Children with trisomies 13, 18, and 21 have higher risks of ETD and associated otologic complications, including tympanostomy tube placement. The maintained risk with the exclusion of cleft palate in these patients suggests craniofacial development may still have a large impact on development of otologic disease. Further study on how skull development in children with trisomies affects the eustachian tube and risk impact for otologic conditions is important for developing more tailored care for these patients.

141. Postoperative Complications following Prophylactic Thyroidectomy in Pediatric Patients for MEN2 -- A Systematic Review

Ina A. Lee, MS, Nashville, TN; Christopher Naranjo, BS, Nashville, TN; Rahul K. Sharma, MD, Nashville, TN; Ryan Belcher, MD MPH, Nashville, TN

Educational Objective: At the conclusion of this presentation, the participants should be able to describe the likelihood of postoperative complications, particularly hypocalcemia, in pediatric patients with MEN2 who undergo prophylactic thyroidectomy (PT).

Objectives: To investigate postoperative outcomes in children with MEN2 who have undergone a prophylactic thyroidectomy (PT) in the context of genetics, preoperative testing, and findings on pathology. Study Design: Retrospective cohort study and systematic review. Methods: An electronic database search of PubMed sought to include articles on complications following PT in children with MEN2. The study characteristics, patient demographics, genetic mutations, preoperative testing, and pathology results were collected. The data concerning postoperative complications, including hypocalcemia and hypoparathyroidism, were also collected and analyzed. Simple descriptive statistics were performed for studies in aggregate. Studies with individual patient data were combined with an institutional retrospective review, and multivariate logistic regression was performed to identify predictors of postoperative hypocalcemia. Results: In our systematic review, 19 articles were included that comprised a total of 277 children with MEN2 who underwent PT. Of all patients, 122 (44%) patients were reported to have hypocalcemia postoperatively. Of the included patients, 222 specified the rate of transient (30.1%) and permanent hypocalcemia (11.3%). There were 3 (1%) cases of recurrent laryngeal nerve injury reported. There were no reported cases of hematoma/seroma or tracheal injury. For individual patients, 59 were included for analysis. On multivariable logistic regression, medullary thyroid microcarcinoma (OR 0.05, 0.01-0.66, p=0.034) and central neck dissections (OR 9.94, 1.07-136.0, p=0.05) were associated with transient hypocalcemia after adjusting for age and preoperative calcium levels. Conclusions: Rates of postoperative hypocalcemia in PT for those with MEN2 is approximately 44%. Surgical characteristics and pathology were the primary predictors of adverse events. Such data can be used to better counsel patients on postoperative expectations.

142. Use of Transparent 3D Printed Models of Congenital Aural Atresia for Patient and Family Surgical Counseling

Ina A. Lee, MS, Nashville, TN; Shreyas G. Krishnapura, MD, Nashville, TN; Brenton D. Griffith, BS, Nashville, TN; Marc L. Bennett, MD FACS, Nashville, TN; Sumit Pruthi, MBBS, Nashville, TN; Jason Park, MD PhD, Nashville, TN

Educational Objective: At the conclusion of this presentation, the participants should be able to discuss the value of a three dimensional printed temporal bone model for improving patients' and families' understanding of congenital aural atresia and its treatment options by providing opportunities for detailed anatomic visualization and hands on interaction.

Objectives: Understanding treatment options for congenital aural atresia (CAA) within the context of complex temporal bone anatomy is challenging for patients and families. We explored the utility of a custom three dimensional (3D) printed transparent model of a skull with unilateral CAA as a tool for surgical counseling. Study Design: Prospective cohort study. Methods: A custom 3D printed model skull was created using a computed tomography scan of a patient with right unilateral CAA. Bone was printed in transparent VeroClear material. The facial nerve, auditory ossicles, and the bony labyrinth were printed in contrasting colors within the model (red, green, and blue). 3D models were used during standardized counseling about CAA. Families were surveyed regarding their understanding of CAA and their impressions of the model. Results: 7 families were counseled and surveyed. Patients' average age was 9.2 (SD 4.8) years. Resources used most by families to learn about CAA were online (71%) and doctor's visits (86%). On a scale of 1-5 (strongly disagree to strongly agree), families strongly agreed that having a 3D model made it easier

to understand the anatomy of CAA (4.9/5, SD 0.4), goals of surgical repair (4.9/5, SD 0.4), and risks of atresiaplasty surgery (4.7/5, SD 0.5). Model use also increased comfort level with treatment decision making (4.6/5, SD 0.8). Conclusions: A novel, transparent 3D printed model of CAA that allows patients and families to visualize and physically interact with complex temporal bone anatomy can be a valuable, effective, and readily available tool to improve patient surgical counseling.

143. Hearing Impaired Otorhinolaryngologists Assess ChatGPT's Responses to the Concerns of Adolescents with Hearing Loss in Real World Settings: Peer Led Evaluation

Masaomi Motegi, PhD MD, Gunma, Japan; Teppei Noda, PhD MD, Fukuoka, Japan; Tsunetaro Morino, PhD MD, Tokyo, Japan; Sho Yoshida, MD, Nagasaki, Japan; Junichi Torii, MD, Tokyo, Japan; Hiroto Ohto, MD, Tokyo, Japan

Educational Objective: At the conclusion of this presentation, the participants should be able to understand the potential and limitations of utilizing artificial intelligence to support hearing impaired adolescents who face psychological barriers in seeking advice from peers.

Objectives: Hearing impaired adolescents often struggle to share their challenges, which peers cannot fully empathize with. Lacking problem solving skills, they are prone to unstable self-esteem. Large language models offer accessible, anonymous alternatives for advice. This study evaluates ChatGPT-4o's effectiveness in addressing medical, psychological, and social concerns in real world settings. Study Design: A cross-sectional analysis by hearing impaired otorhinolaryngologists. Methods: Twenty inquiries, reflecting common issues faced by hearing impaired adolescents, were created in five areas: social communication, education, emotional conflict, future uncertainty, and hearing aid usage. ChatGPT-4o generated responses, evaluated by six hearing impaired otorhinolaryngologists using seven criteria: quality, empathy, medical consensus, accuracy, comprehension, harm, and age appropriateness on a Likert scale (1-5). Logistic regression analysis identified predictors of overall quality. Results: Of the 120 responses, the average for quality, empathy, consensus, appropriateness, comprehension, harm, and age appropriateness were 3.62, 4.03, 4.19, 4.41, 4.48, 4.54, and 4.01, respectively. Logistic regression analysis showed that empathy (OR 8.15, $p < .0001$) and comprehension (OR 2.65, $p = 0.036$) significantly predicted high quality. Kruskal-Wallis test revealed a significant difference in "medical consensus" across categories ($p = 0.009$). The Mann-Whitney U test found that in the "medical consensus" category, "emotional conflict" (median 4.0, IQR 1.25) had a significantly lower score than "hearing aid usage" (median 5.0, IQR 1.0) (Bonferroni adjusted $p = 0.0148$). Conclusions: The study suggests ChatGPT-4 offers medically consistent advice for hearing impaired adolescents, especially on hearing aid usage; however, its consistency is limited when addressing psychological issues.

144. Association between Obesity and Habitual Snoring in a Population Based Sample: Insights from the ABCD Study

Nithya Navarathna, BS, Baltimore, MD; Amal Isaiah, MD PhD MBA, Baltimore, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to understand the relationship between body mass index (BMI) percentile and parent reported snoring and recognize the implications of these findings for addressing sleep disordered breathing (SDB) in the context of obesity for U.S. adolescents.

Objectives: Snoring, the key feature of sleep disordered breathing (SDB), affects ~10% of children in the U.S. and is associated with adverse neurobehavioral, cardiovascular, and quality of life outcomes. Our knowledge of the relationship between obesity and snoring is based only on clinical populations. Hence, we aimed to assess the relationship between children's body mass index (BMI) percentile and parent reported snoring in a national longitudinal cohort of U.S. adolescents. Study Design: We conducted a longitudinal study using data from the Adolescent Brain Cognitive Development (ABCD), the most extensive long term study of child health in the United States. The study enrolled 11,875 typically developing children aged 9-10 and aims to follow them for 10 years. Methods: We used a linear mixed effects model to assess the association between BMI percentile and parent reported children's snoring, evaluated on a Likert type scale from none to nightly, over five years of the ABCD study. We included sex, race, income, time of assessment, and age, with random effects accounting for the potential clustering of children within study sites. Results: At baseline, we included 10,825 children (mean age 9.9 years, 52% male, 14.3% Black). A significant positive association was found between BMI percentile and habitual snoring ($b=0.283$, 95% CI: 0.24-0.32, $P<0.001$). A significant negative interaction was also identified between the two variables ($b=-0.09$, 95% CI: -0.15-0.02, $P=0.009$). Conclusions: This study, leveraging data from a large, nationally representative cohort, found that higher BMI percen-

tiles were significantly associated with snoring among U.S. youth. This relationship weakened over time, highlighting the transition of these children to adolescence. These findings underscore the importance of obesity as a significant risk factor for SDB and emphasize measures to improve weight management in U.S. adolescents.

145. Knowledge Gaps in Tympanostomy Tube Followup Guidelines

Akshay Prabhakar, BSA, Dallas, TX; Romaine Johnson, MD, Dallas, TX

Educational Objective: At the conclusion of this presentation, the participants should be able to acknowledge the latest "strong recommendation" addition to tympanostomy tube guidelines, recognize the current rates of followup within 3 months, and consider social and informational factors that may influence adherence to initial followup visits.

Objectives: 1) To quantify the percentage of pediatric patients following up within three months after tympanostomy tube insertion; and 2) to explore followup behaviors and patient characteristics influencing the likelihood of first followup within three months. Study Design: Retrospective cohort study. Methods: Tympanostomy tube insertions performed between 15 physicians at a pediatric tertiary care hospital from 2021 to 2023 for children aged 0 to 18 years were analyzed based on patient demographics, signs and symptoms at preoperative clinic visit, and date and complications at postoperative followup visits to the surgeon. The first followup date since the procedure was measured and those that visited their otolaryngologist within the three months of the tympanostomy tube insertion were considered positive for the new guidelines and the patients whose first followup was over three months since the surgery were considered negative. Results: Of the 200 pediatric subjects included, 79 (39.5%) were seen within three months of the tympanostomy tube insertion by the otolaryngologist who performed the patient's surgery. Notable patient factors included Spanish speaking patients with a 37.50% rate of following up within three months (TMFU) and patients with otitis media with effusion (OME) for over 3 months prior to procedure had a 45.38% TMFU. Also, OME resolved at a higher rate in patients whose first followup was within 3 months. Conclusions: The current rate of pediatric patients following up within three months of tympanostomy tube insertion is low despite literature supporting the benefits of timely followup after surgery. Further research is needed to determine whether surgeon informational gaps or patient social and logistical factors drive this low rate.

146. Understanding Non-Attendance in Pediatric Otolaryngology: A Retrospective Study of Demographics, Socioeconomics, and Pandemic Effects

Elizabeth M. Puyo, BA, Boston, MA; Rohith R. Kariveda, BS, Boston, MA; Neha Garg, BA, Boston, MA; Jonathan M. Carnino, BS, Boston, MA; Ajay S. Nathan, MS, Boston, MA; Jessica R. Levi, MD, Boston, MA

Educational Objective: At the conclusion of this presentation, the participants should be able to understand how the COVID-19 pandemic influenced appointment attendance in a pediatric otolaryngology clinic at a large safety net hospital. In addition, participants should be able to understand the demographic and socioeconomic factors that influence appointment attendance.

Objectives: The objective of this study is to identify factors associated with missed pediatric otolaryngology appointments at a large safety net hospital, focusing on demographic, socioeconomic, Covid related, and appointment related factors. Study Design: Retrospective study. Methods: A retrospective chart review was conducted on children (<18 years old) with scheduled outpatient appointments in the otolaryngology department from May 1, 2015, to May 1, 2022. Data were extracted from the EMR, encompassing appointment related factors (status, type) and patient demographics (age, sex, race, ethnicity, zip code). Statistical analyses utilized a binary mixed effects model to identify predictors of appointment non-attendance across pre-Covid, during Covid, and post-Covid periods. Results: Out of 13,868 patients, 3,287 (19.2%) were classified as no show. Older age increased the likelihood of missing appointments (OR 1.015, 95% CI [1.003, 1.027]). Black/African American patients were more likely to not show up (OR 1.676, 95% CI [1.376, 2.04]), and there was no significant difference in attendance by sex or ethnicity. Participants residing in regions outside of our city and those with private insurance (OR 0.549, 95% CI [0.460,0.654]) were less likely to miss appointments. Patients with appointments after the COVID-19 pandemic were more likely to not attend compared to pre-pandemic (OR 1.187, 95% CI [1.068, 1.319]). In person appointments had a higher no show rate compared to telemedicine visits (OR 63.953, 95% CI [26.696,137.729]). Conclusions: Non-attendance in pediatric otolaryngology clinics is affected by various demographic and socioeconomic factors, revealing notable disparities among racial groups and age categories. The COVID-19 pandemic altered attendance patterns, indicating changes in healthcare dynamics and patient behavior. Engaging families and exploring their specific challenges can inform targeted interventions aimed at improving appointment adherence in pediatric otolaryngology clinics.

147. Healing Hands or Hidden Harms? Pediatric Airway Interventions Causing Injuries

Deepa Shivnani, MBBS DNB ENT, Bangalore, India; Eshwaran Venkat Raman, MBBS DLO MS ENT, Bangalore, India; Shruthi Kobal, MBBS MS ENT, Bangalore, India

Educational Objective: After this presentation, the participants should be able to 1) identify common causes of iatrogenic airway injuries in pediatric patients; 2) understand the outcomes of such injuries and the importance of early intervention; 3) apply preventive strategies through an improved selection of instruments and techniques; and 4) recognize the role of adequate training and supervision in reducing airway related complications.

Objectives: The purpose of this study was to evaluate the causes and outcomes of iatrogenic airway injuries other than intubation trauma in pediatric patients. Study Design: Retrospective study. Methods: A retrospective analysis of pediatric patients with documented iatrogenic airway injuries caused by prior airway interventions between January 2015 and January 2023 was included and analyzed using SPSS. Excluded cases were those with injuries resulting from intubation trauma, neck trauma, and cardiac, or gastrointestinal procedures. Data on the nature of injuries, causative factors, interventions required, and long term outcomes were collected and reviewed. Results: A total of 17 patients with ages ranging from 1 month to 14 years were included. The majority of the patients had LASER associated injuries (58.8%), 17.6 % of injuries were caused by powered instruments, and 23.5 % were caused by inappropriate device selection. Laryngeal lesions requiring tracheostomy and long term management were acquired transglottic stenosis, grade 4 subglottic stenosis, supraglottic adhesion, and stenosis. 41.1% of patients underwent open reconstruction surgeries. 23.5% of children are still tracheostomized and the remaining 76.5 % underwent a total of 58 procedures to restore their airway. Conclusions: Early identification of iatrogenic injuries is crucial in preventing long term complications in the pediatric airway. Appropriate selection and handling of instruments, particularly when using advanced technologies like LASER or powered tools, play a key role in reducing injury risks. Emphasizing training and supervision ensures better outcomes and minimizes such injuries.

148. Long Term Complications of Obstructive Sleep Apnea (OSA) in Autistic Patients

Michael A. Silva, BS, Riverside, CA; Emmi Deckard, BS, Riverside, CA; Camron Davies, MD, Loma Linda, CA; Jared Inman, MD, Loma Linda, CA

Educational Objective: At the conclusion of this presentation, participants should be able to identify the risks associated with OSA in autistic patients and subsequently counsel patients and families, engaging in shared decision making to mitigate these risks in the future.

Objectives: Examine the long term complications of OSA in patients with autism spectrum disorder (ASD) compared to neurotypical patients with OSA. Study Design: A retrospective cohort study using the TriNetX database to examine the long term complications of OSA in pediatric patients with ASD. Methods: Pediatric patients under 18 years old with a diagnosis of OSA and ASD (ASD +) were identified using ICD-10 codes and compared to a matched control group of pediatric neurotypical OSA (ASD -). Matching was performed based on age, gender, race, and comorbid conditions. Primary outcomes included the incidence of anxiety, diabetes, depression, hypertension, heart failure, asthma, ER visits, ICU admissions and mortality. Statistical significance was defined as a p-value < 0.05. Results: Analysis included 21,908 ASD + vs 21,908 ASD - matched patients from the cohort of 290,273 patients with OSA. Results presented as odds ratios with 95% confidence interval (OR [95%CI]). The ASD + cohort had significantly higher risk of asthma (1.509 [1.447,1.574]), anxiety (3.703 [3.496, 3.923]), depression (1.733 [1.464, 2.053]), ER visits (1.636 [1.571, 1.704]), and ICU admissions (1.464 [1.351, 1.586]). Conversely, the ASD - cohort had a lower risk of heart failure (0.731 [0.612, 0.874]) diabetes (0.760 [0.659, 0.876]) and mortality (0.617 [0.490, 0.778]). Conclusions: ASD + are at a higher risk of developing depression, anxiety, asthma, ICU admission and visiting the ER compared to those without ASD. These findings highlight the importance of recognition and management of OSA in the ASD population to potentially mitigate the long term complications associated with these comorbidities by engaging in shared decision making with families, and possibly a more aggressive approach in those with ASD.

149. Pediatric Acute Mastoiditis: Comparative Occurrence and Management Trends with the COVID-19 Pandemic

Rushi Vekariya, BS, Orlando, FL; Ariana Johnson, BS, Orlando, FL; Timothy Maul, PhD, Orlando, FL; Adriana Cadilla, MD, Orlando, FL; Cedric Pritchett, MD, Orlando, FL

Educational Objective: At the conclusion of this presentation, the participants should be able to recognize the impact of the COVID-19 pandemic on the incidence, demographic changes, and clinical management of pediatric acute mastoiditis.

Objectives: The aim of this study was to examine the change in hospital case volume, risk factors, and clinical management of pediatric acute mastoiditis before and after the COVID-19 pandemic. Study Design: Retrospective comparative study. Methods: Demographics and clinical data were collected from the electronic medical record on subjects 0-18 years of age with acute mastoiditis (ICD-10: H70.0; ICD-9: 383), between October 2014 and April 2024 from a freestanding, tertiary care pediatric hospital. Results: A total of 78 patients were included in the cohort: 18 prior to January 1, 2020, and 60 subsequent to that date. Mean age was 8.1 years and surgical intervention was pursued in 46.7% of subjects pre-2020; while mean age was 6.7 years and surgery occurred in 75.0% of subjects post-2020 (p=0.057). White children were the largest racial demographic pre-2020 but not post-2020 (66.7% vs 43.3%). Tympanostomy tubes alone composed 23.1% of surgeries pre-2020 and 40.0% of surgeries post-2020. Unilateral mastoidectomy composed 26.9% of surgeries pre-2020 and 21.4% of surgeries post-2020. The mean length of stay was 3.1 days pre-2020 and 4.6 days post-2020. Conclusions: Our institution experienced a post-pandemic rise in acute mastoiditis cases with notable shifts in demographics and an increased need for surgical treatment. These data support concerns the COVID-19 pandemic may have influenced both disease progression and treatment approaches for pediatric patients with acute otitis media.

150. Gender Differences in Congenital Aural Atresia: A Systematic Review and Meta-Analysis

Angelica M. Walker, BS, Charleston, SC; Pranav Patel, BS, Charleston, SC; Shaun A. Nguyen, MD FAPCR, Charleston, SC; Clarice Clemmens, MD, Charleston, SC; David R. White, MD, Charleston, SC

Educational Objective: At the conclusion of this presentation, the participants should be able to understand the differences in gender present in the care of patients with congenital aural atresia.

Objectives: Analyze gender differences in diagnosis and intervention for congenital aural atresia. Study Design: Systematic review and meta-analysis. Methods: A comprehensive literature search of Scientific databases (CINAHL, Cochrane Library, PubMed and Scopus) was completed from inception to September 2024 identifying 1801 English language articles. Meta-analysis of proportions (%), relative risk (RR), and continuous measures with 95% confidence interval (CI) were calculated using random and fixed effects models. Results: Data from 28 studies were included, with a total study population of 1923 children with AA. The mean age was 8.8 years (range 0.01-17), with an overall male predominance at 63.7% (CI 59.89-67.43). In our study population, 25.4% (CI 15.17-37.15) of children were considered syndromic, the most prevalent being Treacher Collins (16.97%, CI 7.01-30.16). The majority of patients studied were Marx III [61.9% (CI 48.21-74.7)] with an average Jahrsdoerfer score of 7.2 (CI 6.03-8.34). The proportion of males in the canaloplasty group (69.6%, CI 63.64-74.1) was significantly higher (11.7%, CI 4.73-18.72, p=0.0009) than in the bone conduction hearing device group (57.9%, CI 50.04-65.79). Males were more likely to have a bilateral defect (RR=1.82, p=0.14) and, when unilateral, a right sided defect (RR=1.31, p=0.05). There was no significant difference in risk based on gender for severity (RR=1.15, p=0.88) or Jahrsdoerfer score greater than 7 (RR=0.84, p=0.73). Conclusions: Laterality within AA may be influenced by gender, with males having an observed increased risk for bilateral and right sided defects. Male patients with AA are undergoing canaloplasty more often than hearing device intervention, though more stratified studies are needed to understand additional gender differences.

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1996 . . . . . William R. Hudson, MD
1997 . . . . . H. Bryan Neel, MD
1998 . . . . . Stanley M. Blaugrund, MD

Presidents cont'd

1999 . . . . . Mansfield F. W. Smith, MD
2000 . . . . . Charles W. Gross, MD
2001 . . . . . Edward L. Applebaum, MD
2002 . . . . . Gerald B. Healy, MD
2003 . . . . . Roger L. Crumley, MD
2004 . . . . . Robert A. Jahrsdoerfer, MD
2005 . . . . . Patrick E. Brookhouser, MD
2006 . . . . . Stanley M. Shapshay, MD
2007 . . . . . David F. Wilson, MD
2008 . . . . . Harold C. Pillsbury, MD
2009 . . . . . Myles L. Pensak, MD
2010 . . . . . Frank E. Lucente, MD
2011 . . . . . Gerald S. Berke, MD
2012 . . . . . Robert H. Ossoff, DMD MD
2013 . . . . . Jesus E. Medina, MD
2014 . . . . . Jonas T. Johnson, MD FACS
2015 . . . . . Derald E. Brackmann, MD
2016 . . . . . Fred D. Owens, MD
2017 . . . . . Charles W. Beatty, MD FACS
2018 . . . . . Mark S. Persky, MD FACS
2019 . . . . . Sigsbee W. Duck, MD FACS
2020/2021 . . . . . C. Gaelyn Garrett, MD
2022 . . . . . Michael S. Benninger, MD FACS
2023 . . . . . Ralph B. Metson, MD FACS
2024 . . . . . Andrew N. Goldberg, MD MSCE FACS
2025 . . . . . Michael E. Hoffer, MD FACS

Guests of Honor

1947 . . . . . J. McKenzie Brown, MD
1948 . . . . . Harold Walker, MD
1949 . . . . . Claude C. Cody, Jr., MD
1950 . . . . . Harris P. Mosher, MD
1951 . . . . . Duncan McPherson, MD
1952 . . . . . D.C. Jarvis, MD
1953 . . . . . Charles A. Thigpan, MD
1954 . . . . . J. Parsons Schaeffer, MD
1955 . . . . . Edward P. Fowler, MD
1956 . . . . . Harold L. Lillie, MD
1957 . . . . . Not Available
1958 . . . . . Arnold S. Diehl, MD
1959 . . . . . Frederick T. Hill, MD
1960 . . . . . Terence Cawthorne, MD
1961 . . . . . Milton J. Robb, MD
1962 . . . . . Thomas C. Galloway, MD
1963 . . . . . Robert C. Martin, MD
1964 . . . . . C. Stewart Nash, MD
1965 . . . . . Georges Portmann, MD
1966 . . . . . Gordon D. Hoople, MD
1967 . . . . . Albery C. Furstenberg, MD
1968 . . . . . Francis E. LeJeune, MD
1969 . . . . . Lawrence R. Boies, MD
1970 . . . . . Victor Alfaro, MD
1971 . . . . . Vern O. Knudsen, PhD
1972 . . . . . Carlos Munoz-MacCormick, MD
1973 . . . . . Dean Lierle, MD
1974 . . . . . Raymond Jordon, MD
1975 . . . . . Frank Lathrop, MD
1976 . . . . . John Bordley, MD
1977 . . . . . Max Soni, MD
. . . . . W.E.N. Harrison, MD
1978 . . . . . Moses Lurie, MD
1979 . . . . . Shirley Baron, MD
1980 . . . . . Frank Lathrop, MD
. . . . . Harry Rosen-Wasser, MD
1981 . . . . . Ben Senturia, MD
1982 . . . . . Harold Schuknecht, MD
. . . . . Ugo Fisch, MD
1983 . . . . . Walter Work, MD
. . . . . Roy B. Cohn, MD
1984 . . . . . Beverly Armstong, MD
1985 . . . . . G.O. Proud, MD
1986 . . . . . Daniel Miller, MD
1987 . . . . . Paul Ebert, MD
1988 . . . . . Robert W. Brown, MD
1989 . . . . . Hallowell Davis, MD
1990 . . . . . George Reed, MD
1991 . . . . . Victor Goodhill, MD
1992 . . . . . Roger Boles, MD
1993 . . . . . C. Ryan Chandler, MD
1994 . . . . . John Conley, MD
1995 . . . . . Paul H. Ward, MD
1996 . . . . . Bobby Ray Alford, MD
1997 . . . . . Robert Cantrell, MD
1998 . . . . . Patrick J. Doyle, MD
1999 . . . . . Richard L. Goode, MD
2000 . . . . . A. Paul Keller, MD
2001 . . . . . Charles W. Cummings, MD
2002 . . . . . Stanley M. Shapshay, MD
2003 . . . . . Brian F. McCabe, MD
2004 . . . . . Byron J. Bailey, MD
2005 . . . . . Robert H. Miller, MD MBA
2006 . . . . . Gerald B. Healy, MD
2007 . . . . . William F. House, MD
2008 . . . . . Patrick E. Brookhouser, MD

Guests of Honor cont'd

2009 . . . . . Harry R. van Loveren, MD
2010 . . . . . Gady Har-El, MD
2011 . . . . . Harold C. Pillsbury, MD
2012 . . . . . Paul A. Levine, MD
2013 . . . . . Robert H. Mathog, MD
2014 . . . . . Michael M.E. Johns, MD
2015 . . . . . Gerald S. Berke, MD FACS
2016 . . . . . William H. Owens, MD
2017 . . . . . H. Bryan Neel, III, MD PhD FACS
2018 . . . . . Dana M. Thompson, MD FACS
2019 . . . . . Harold C. Pillsbury, MD FACS
2020 . . . . . cancelled due to COVID
2021 . . . . . Mark S. Courey, MD
2022 . . . . . Robert T. Sataloff, MD FACS
2023 . . . . . Stacey T. Gray, MD FACS
2024 . . . . . Andrew H. Murr, MD FACS
2025 . . . . . Fred F. Telischi, MD FACS

Joseph H. Ogura, MD Lecturers

1986 . . . . . Hugh F. Biller, MD
1987 . . . . . Paul H. Ward, MD
1988 . . . . . John Conley, MD
1989 . . . . . George A. Sisson, MD
1990 . . . . . Sir Donald F.N. Harrison
1991 . . . . . Robert W. Cantrell, MD
1992 . . . . . Michael E. Johns, MD
1993 . . . . . John A. Kirchner, MD
1994 . . . . . John Lewis, MD
1995 . . . . . Eugene Myers, MD
1996 . . . . . Charles W. Cummings, MD
1997 . . . . . Harold C. Pillsbury III, MD
1998 . . . . . Frank E. Lucente, MD
1999 . . . . . Haskins Kashima, MD
2000 . . . . . Christopher Perry, MD
2001 . . . . . Richard R. Gacek, MD
2002 . . . . . David G. Nathan, MD
2003 . . . . . Arnold G. D. Maran, MD
2004 . . . . . Ernest A. Weymuller, Jr., MD
2005 . . . . . Gerald B. Healy, MD
2006 . . . . . Jonas T. Johnson, MD
2007 . . . . . Byron J. Bailey, MD
2008 . . . . . Paul A. Levine, MD
2009 . . . . . Robin T. Cotton, MD
2010 . . . . . Marvin P. Fried, MD
2011
. . . . . Lord Bernard Ribeiro Kt CBE FRCS FACS (Hon.)
2012 . . . . . James L. Netterville, MD
2013 . . . . . Randal S. Weber, MD
2014 . . . . . David E. Eibling, MD FACS
2015 . . . . . Uttam K. Sinha, MD FACS
2016 . . . . . Jonas T. Johnson, MD FACS
2017 . . . . . Eric J. Moore, MD FACS
2018 . . . . . Dana M. Thompson, MD FACS
2019 . . . . . James P. Bagian, MD PE
2020 . . . . . cancelled due to COVID
2021 . . . . . C. Buddy Creech, MD MPH
2022 . . . . . Lara Jehi, MD MHCDS
2023 . . . . . Rochelle P. Walensky, MD MPH
2024 . . . . . Jennifer R. Grandis, MD FACS
2025 . . . . . Cherie-Ann Nathan, MD FACS

In Memoriam

The following deaths have been reported to the Administrative Office since the publication of the 2024 Annual Program.

	Elected	Died
Stanley M. Blaugrund, MD	1974	2024
Jack D. Clemis, MD	1973	2025
Berkley S. Eichel, MD	1976	2024
George A. Gates, MD	1979	2025
Charles S. Giffin, MD FACS	1971	2024
Merrill Goodman, MD FACS	1964	2024
Volker Jahnke, MD FACS	1992	2024
Roger S. Kaufman, MD	1973	2024
William Lawson, MD FACS	1979	2024
William H. Lippy, MD FACS	1980	2024
Thomas B. Logan, MD FACS	2012	2024
W. Fred McGuirt Sr., MD FACS	1982	2024
George T. Nager, MD	1963	2010
Michael M. Paparella, MD	1963	2024
Richard C. Parsons, MD	1965	2024

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Triological Society CME Breakdown	
May 15, 2025	
2:30 - 3:10 Thesis Award Presentations	0.75
3:35 - 5:18 Panel and Podium Presentations	1.75
May 16, 2025	
8:30 - 10:15 Concurrent Sessions Session 2: Head and Neck Session 3: Pediatric Otolaryngology	1.75
10:35 - 12:20 Concurrent Sessions Sesson 4: General Session 5: Otology	1.75
Concurrent Sessions 1:30 - 3:10 Session 6: Laryngology AND Session 8: Rhinology 1:30 - 3:10 Session 7: General and Sleep	1.75
Concurrent Sessions 3:35 - 5:25 Session 9: General 3:35 - 4:15 Session 10: Rhinology	Session 9 -- 2.00 Session 10 -- 0.75
Total CME	9.75

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Orlando, FL

Sections Meeting Abstract Submission
July 1, 2025 - August 1, 2025

128th Annual Meeting at COSM

April 22-26, 2026
Sheraton Phoenix Hotel,
Phoenix, AZ

Annual Meeting Abstract Submission
July 1, 2025 - October 15, 2025

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