TIPS AND TRICKS FOR PRIMARY CARE PROCEDURES
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OBJECTIVES
• Identify techniques to ease pediatric fears when performing invasive procedures
• Identify three techniques to successfully remove a foreign body from the nasal cavity or ear canal
• Demonstrate three techniques to achieve hemostasis when managing epistaxis
• Demonstrate the use of the woods lamp to examine the eye for foreign body or lesions
• Verbalize management techniques with ocular foreign bodies and lesions

FOREIGN BODY REMOVAL

THE PATIENT...
• Provide developmentally appropriate choices
• Give the patient (no matter the age) the power
• “Which ear would you like me to look in first?”
• “You can leave your socks on or off today. Which do you choose?”
• “Do you have a question for me?”

THE PATIENT....
• Set the agenda with clear expectations
  • “This machine will press against your chest and take a picture of your body.”
  • “I'm going to ask you some questions, then I will ask your mom/dad questions.”
• “It's ok to feel scared or nervous.”
• Validate their fears
• Lerwick, 2016
PEAR FOREIGN BODY

- Most common: beads, plastic toys, pebbles, popcorn kernels
- Techniques: water irrigation, forceps, cerumen loop, right-angle ball hook, suction catheter, acetone to dissolve Styrofoam
- Refer when: requires sedation, non-graspable foreign body, tightly wedged, touching TM, sharp FB, unsuccessful removal

PEAR FOREIGN BODY

- Cartilaginous and bony passage lines by thin layer of skin and periosteum
- Very sensitive due to little cushion
- Can become impacted at this point
- Adequate visualization, patient cooperation and confident provider is a must

PEAR FOREIGN BODY

- Asymptomatic
- Tinnitus (feeling of fullness)
- Hearing loss
- Symptoms of otitis media

PEAR FOREIGN BODY

- Live insects
  - Instill alcohol or Lidocaine 2% to instantly kill insect
  - Remove after insect is dead
- Do NOT irrigate with button batteries—liquefaction tissue necrosis
- Acetone to dissolve Styrofoam
- All orifices should be examined for foreign bodies
- Otic antibiotics needed with concurrent otitis externa or trauma from removal
EAR FOREIGN BODY
- Alligator forceps
- Cerumen loops
- Right-angle ball hooks
- Frasier tip suction catheter

MYRINGOTOMY TUBES

CERUMEN IMPACTION
- Impacted if:
  - Cerumen obscures the exam of a large portion of the external auditory canal, middle ear, and tympanic membrane
  - Cerumen causes pain due to being extremely hard, dry, and irritative
  - Cerumen is associated with a foul odor, infection, dermatitis
  - Cerumen cannot be removed without magnification and multiple instruments

CERUMEN IMPACTION
- Cerumenolytics
  - Water based: Cerumenex, hydrogen peroxide
  - Oil based: almond oil, mineral oil
  - Non-water/non-oil: Debrox
  - No superior agent
- Manual removal
  - Scoop or spoon

Verhovshek, 2016
Mitchaudet, C. & Malatay, J., 2018
Bell, L. 2017
CERUMEN IMPACTION

- Irrigation
  - Warm water
  - Avoid if suspicion of TM rupture

- NJEM: Evidence suggests using cerumenolytic followed by irrigation of the most effective treatment for cerumen removal

Bell, L., 2017

NASAL FOREIGN BODIES

- Children under age 5
- Purulent unilateral nasal discharge
- Localized pain
- Foul odor
- Epistaxis

Guthrie, 2016

NASAL FOREIGN BODIES

- Button batteries
- Magnets
- Jacks
- Beads
- Beans
- Peanuts
- Paper wads
- Erasers

Guthrie, 2016

NASAL FOREIGN BODIES

- If the foreign body is organic (bean, cotton) do not irrigate → SWELL
- Magnets and button batteries take priority
- Anterior to middle turbinate or just below inferior turbinate
- A turb-in-what????

Guthrie, 2016

TOOL KIT

- Otoscope
- Head lamp
- Topical Lidocaine and epinephrine
- Lubricant
- Katz extractor
- Suction
- Positive pressure
- Forceps
- Fine tip suction

Guthrie, 2016

TECHNIQUE #1

- Kissing technique
- Parent to place mouth or child's mouth, occlude unaffected nostril, BLOW

Guthrie, 2016
TECHNIQUE #2
• Right angle hook
• Forceps
• Suction

Guthrie, 2016

NASAL FOREIGN BODIES
• ALWAYS ....
  • Promptly remove batteries to prevent necrosis-REFER to ENT
  • Failing to locate other foreign bodies
  • Failure to refer to ENT with suspected nasopharyngeal dam

Guthrie, 2016

TECHNIQUE #3
• Cotton tip applicator and adhesive (patient must be cooperative)
• Katz extractor
• Magnet (for metallic objects)

Guthrie, 2016

CAUSES OF EPISTAXIS
• Direct trauma, nose picking, irritation, dryness
• Bleeding disorders, congenital, traumatic AVMs, anticoagulation, neoplasm
  * Hypertension was significantly associated with the risk of hypertension

Gallegos, 2017

EPISTAXIS
• Anterior bleeding
  • Majority of cases
  • Kiesselbach’s plexus
• Posterior bleeding
  • Severe cases
  • Sphenopalatine artery

Gallegos, 2017

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Visualize; ensure airway; expel clots (lighting and speculum)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pressure Compressible clips</td>
<td></td>
</tr>
<tr>
<td>Irrigation</td>
<td>Warm-water irrigation</td>
</tr>
<tr>
<td>Silver Nitrate</td>
<td>Cauterize anterior bleeding</td>
</tr>
<tr>
<td>Tampon/Packing</td>
<td>Hemostat, oxymetazoline or bacitracin for lubrication</td>
</tr>
<tr>
<td>Balloon catheters</td>
<td>for posterior bleeding</td>
</tr>
<tr>
<td>Afrin/Medication</td>
<td>Oxymetazoline used as vasoconstrictor</td>
</tr>
<tr>
<td>TXA</td>
<td>3000mg/5ml applied to packing</td>
</tr>
<tr>
<td>Interventional radiology or Surgery</td>
<td>Severe refractory bleeding</td>
</tr>
<tr>
<td>Discharge</td>
<td>Admit with posterior packing or hemodynamic instability; ENT follow up with discharge letters, ASERT</td>
</tr>
</tbody>
</table>

Gallegos, 2017
VISUALIZATION

Opens top down, not side to side

PRESSURE

NEUTRAL POSITION

SILVER NITRATE/CAUTERY

- Cauterize if bleeding vessel is identified
- DO NOT USE BILATERALLY
- Apply gently to mucosa and not skin
- Avoid accidental burn and staining

NASAL TAMPON

- Merocel and Rapid Rhino
- Lubricate with bacitracin/lidocaine
- Slide along floor of nasal cavity
- Apply TXA (500mg/5ml) to tampon for expansion
- Oxymetazoline can also be used
- Best for anterior bleeding
- Consult ENT
- Discuss the use of anti-staphylococcal antibiotics

BALLOON CATHETERS

Gallegos, 2017

Gallegos, 2017
BALLOON CATHETERS
• Substitute with 10/12 F foley catheter
• Anterior balloon lies in nasopharynx (instill with 15 ml saline)
• Posterior balloon lies in oropharynx (up to 30 ml)
• Use caution with packing with concern for facial fractures
  Gallegos, 2017

TRANEXAMIC ACID
• Topical Tranexamic Acid for the Treatment of Acute Epistaxis: A Systematic Review and Meta-analysis.
• Not statistically different when compared to control but TXA group had fewer episodes of re-bleeding and higher patient satisfaction

DISPOSITION
• Posterior packings can cause bradydystrhythmias
  • Observe in hospital setting
  • Re-bleeding can occur
  • ENT consult
• Hemodynamic stability and hemostasis
  • Home with ENT follow-up in 24-48 hours
  • Antibiotic coverage for prevention of Toxic Shock Syndrome
  Gallegos, 2017

EYE FOREIGN BODY
• History
  • When?
    • FB in eye for many days?
    • FB in eye today?
  • Object?
    • Metal on metal drilling?
    • Organic FB?
    • High rate of speed?
  • Symptoms?
    • Excessive watering, increase pain, redness, photophobia, gritiness
  Frankel, A., Lee, L., Lee, G. 2017

EYE FOREIGN BODY REMOVAL
• Snellen chart—ALWAYS!!!!
• Bright light
• Fluorescein strips
• Topical anesthetics (proparacaine, tetracaine)
• Cobalt blue light
• Cotton tip applicator
• Normal saline flushes
• Sterile 25-guage needed
  Frankel, A., Lee, L., Lee, G. 2017
OPHTHALMIC ANESTHETIC

Proparacaine  Teracaine

Lasts 1.3 minutes longer than Tetracaine
Less pain with instillation
Lasting 10.7 minutes

More pain with instillation
Lasts 9.4 minutes

Bartfield, JM., Holmes, TJ., Raccio-Robak, N., 1994

CONSIDERATIONS

• Snellen chart
  • Hand-copy
  • Smartphone app
• Can instill anesthetic drop prior to exam
• If using corrective lens, wear glasses
• Globe rupture
  • Seidel sign
  • Used to test for leakage from anterior chamber

EYE EXAM

• Using bright light
  • Examine conjunctiva, cornea, and anterior chamber
  • Location, size, and depth of corneal foreign body
  • Rust ring, infection, edema, scar tissue
• Eyelid eversion
  • Upper and lower lids
  • Eye FB removal

Lin, 2010

WOODS LAMP

• Fluorescin
  • Strip or drops
  • Saline flush
• Woods lamp
  • Cobalt blue
  • Penlight
  • Detects epithelial defect associated with FB
    • Defect will turn green fluorescent color

Frankel, A., Lee, L., Lee, G., 2017
U-M Kellogg Eye Center, 2014

WOODS LAMP EXAM

• Corneal abrasion
• Corneal ulcer
• Herpes Zoster
• Fungal infections

EYE FOREIGN BODY REMOVAL

• Supine
  • Focus on a point on the ceiling
• Avoid the lids and lashes for sterility
• Eyelid speculum, cotton tip applicator, or assistant
• Approach from the side
**EYE FOREIGN BODY REMOVAL**

- Cotton tip removal
- Dab moistened cotton tip or nudging motion
- 25-gauge needle/scalpel
  - #15 blade
  - Bevel away from cornea
  - Bend at 90 degrees
  - Motion comes from fingers with hand resting on firm object
- Irrigation
  - 10 ml saline flush to irrigate and residue after procedure

**AFTERCARE**

- Ophthalmic antibiotics
  - Non-contact lens: Erythromycin 0.5% QID or Sulfacetamide 10% 5x/day
  - Contact lens: Ophthalmic fluoroquinolone
- Organic matter: Ophthalmic fluoroquinolone
- Topical Analgesics
  - Ketorolac ophthalmic 0.4% QID
  - Oral Analgesics

**WHEN TO REFER...**

- Penetrating eye trauma
- Incomplete removal
- Persistent FB symptoms
- Persistent rust ring
- Keratitis: inflammation of the tissue over the cornea
- Endophthalmitis: inflammation of the intraocular cavities
- Persistent epithelial defect
- Pediatric or uncooperative patient

**WHEN TO PRESCRIBE OPHTHALMIC STEROIDS??**

**REFERENCES**

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