Approaching the Core Exam: Content & Strategy

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Disclosures

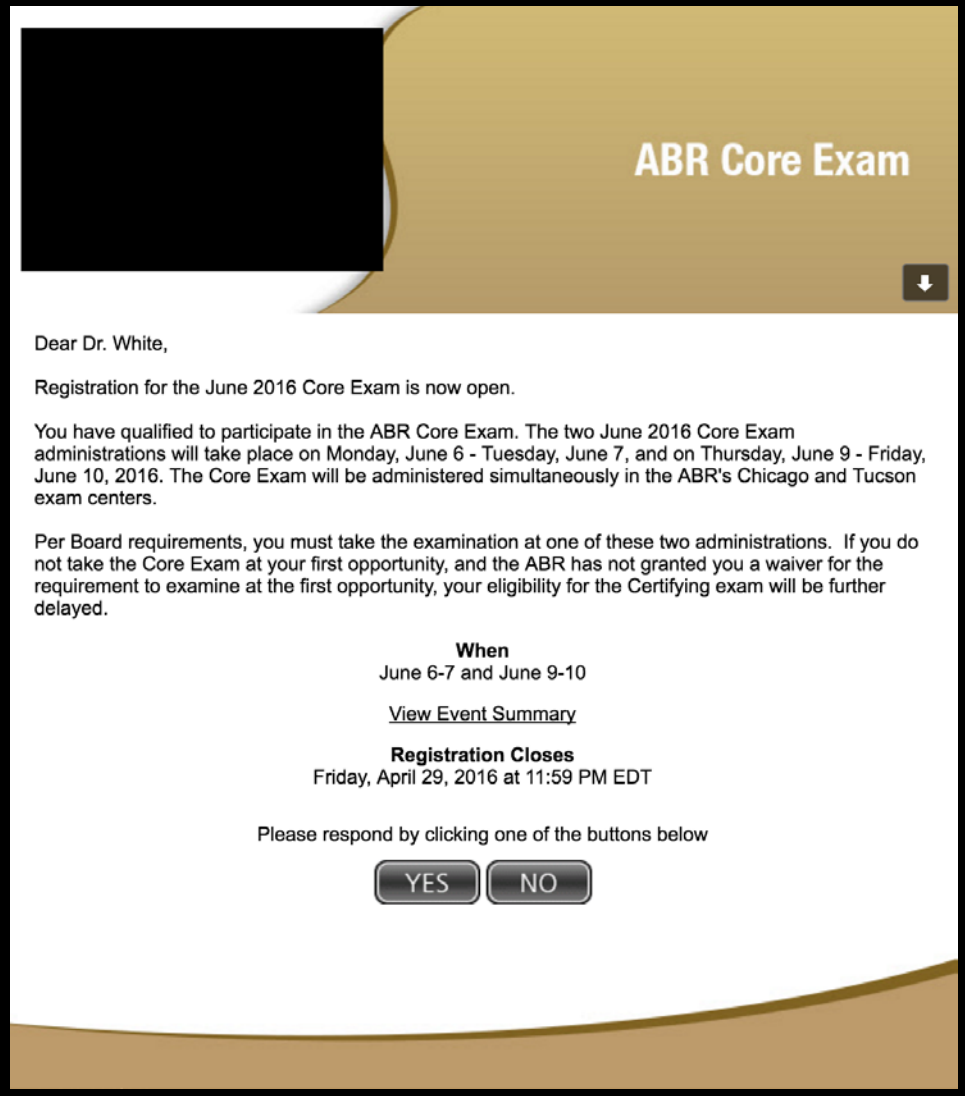
- I run a lightly-monetized website that discusses, among other things, radiology

- One time, the ABR sent me a threatening letter telling me to not use anything that had their logo (the ABR Mark™) on it, because you (a smart doctor) might spuriously think that I had a relationship with the ABR
  - I have no official relationship with ABR and possess no insider knowledge

Logistics

Familiarity combats anxiety

Registration



Location (switches possible)

Chicago

- 560 spots
- Shuttle from hotel with “staging room”
- Easier flights

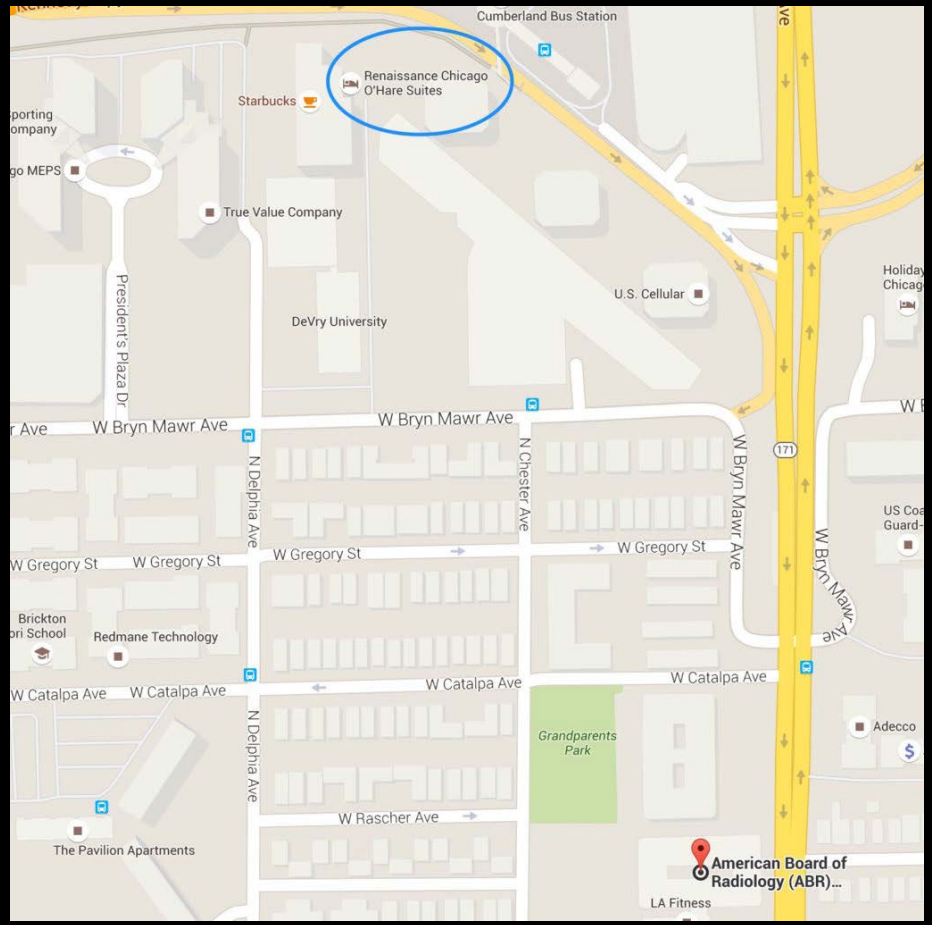
Tucson

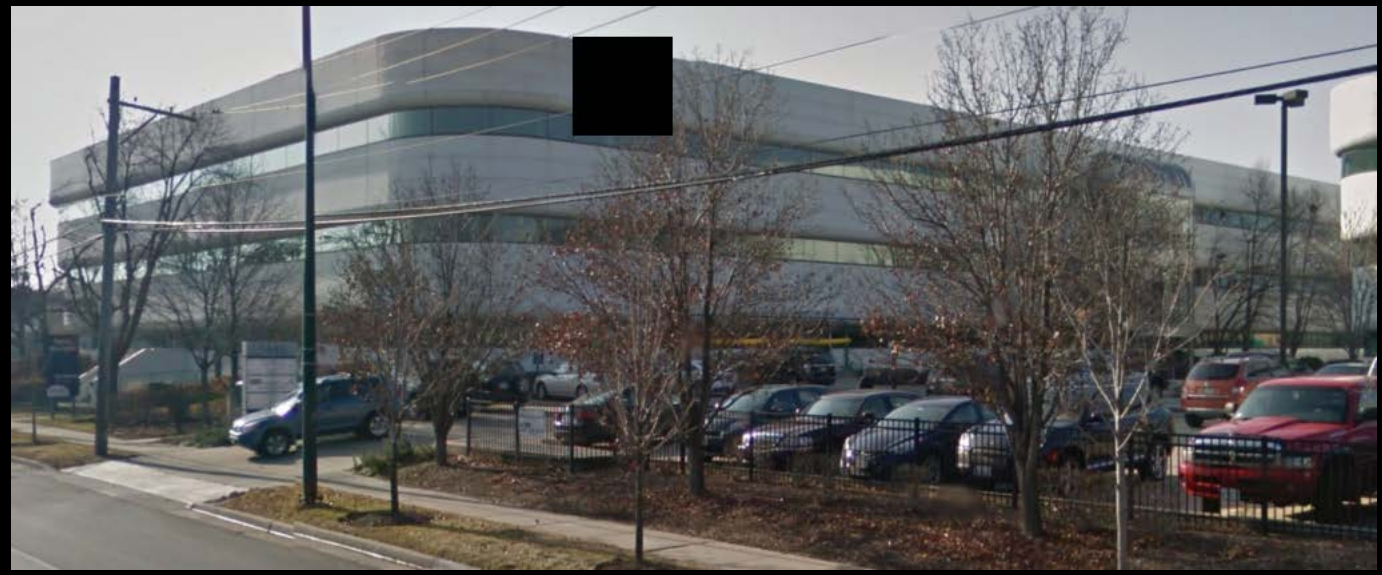
- 180 spots
- 30 second walk
- More limited flights (consider phoenix)

You can fly out in the late afternoon / early evening no problem. The second day lasts ~5.5 hours.

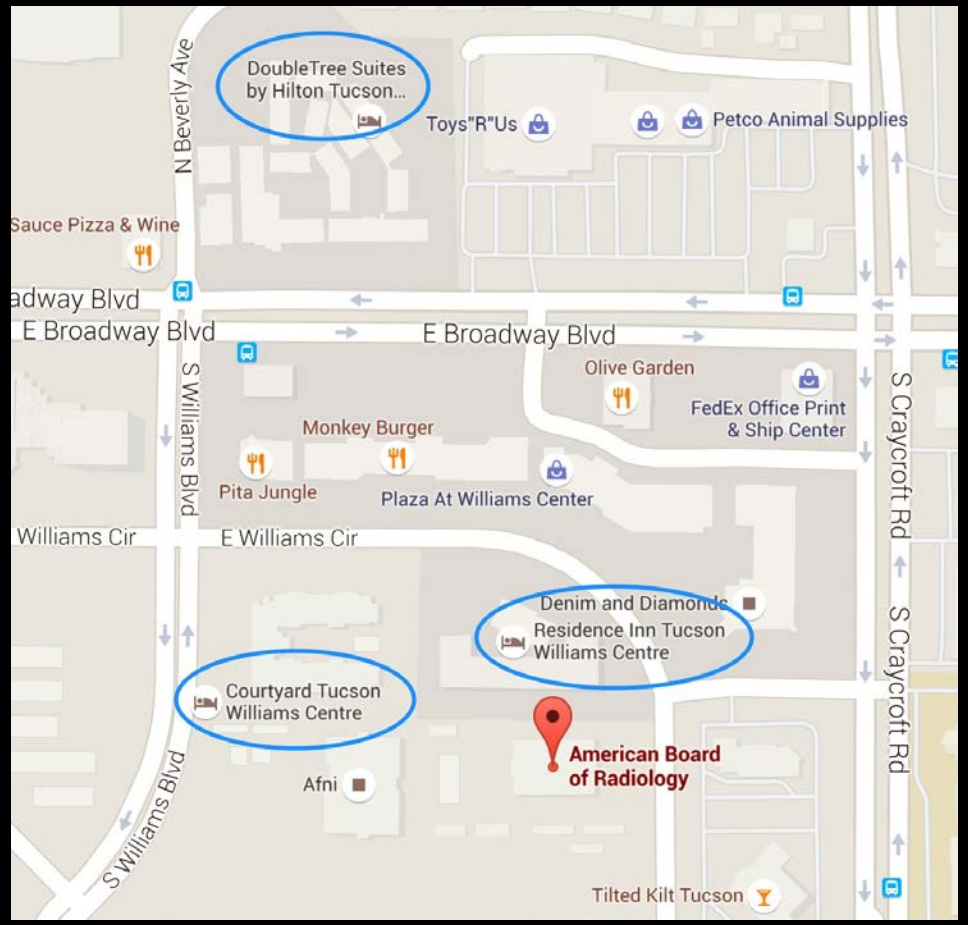
https://www.theabr.org/diagnostic-radiology/initial-certification/diagnostic-radiology-initial-certification-abr-exam-centers

Chicago


Cumberland Bus Station
Renaissance Chicago O'Hare Suites
Starbucks
True Value Company
President's Plaza Dr
DeVry University
U.S. Cellular
W Bryn Mawr Ave
N Delphia Ave
N Chester Ave
W Gregory St
W Catalpa Ave
Brickton
Redmane Technology
Grandparents Park
Adecco
W Rascher Ave
The Pavilion Apartments
American Board of Radiology (ABR)...
LA Fitness



Tucson


DoubleTree Suites by Hilton Tucson...
Toys"R"Us
Petco Animal Supplies
N Beverly Ave
Sauce Pizza & Wine
E Broadway Blvd
E Broadway Blvd
Olive Garden
FedEx Office Print & Ship Center
S Craycroft Rd
Monkey Burger
Pita Jungle
Plaza At Williams Center
S Williams Blvd
Williams Cir
E Williams Cir
Denim and Diamonds
Residence Inn Tucson Williams Centre
Courtyard Tucson Williams Centre
American Board of Radiology
Afni
S Craycroft Rd
S Williams Blvd
Tilted Kilt Tucson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PUBLIC TRUST EST. 1934

The Experience

Source: ABR.org

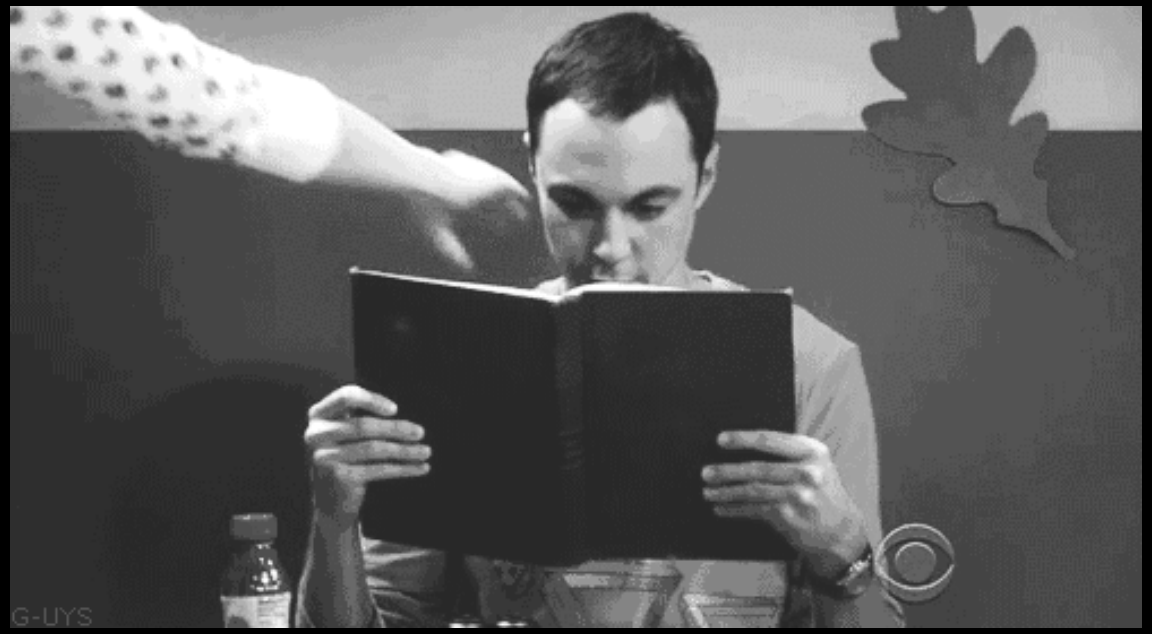
Duration

- 1 min per question

- Day 1: 6 hours questions + 30 min break + 30 min check-in = 7 hours
- Day 2: 5 hours questions + 30 min break + 30 min check-in = 6 hours

- You can take breaks once you use up your break time, your exam time just continues to tick down.

The Bathroom



To take a break, you just hit the “Take a Break” button and walk away

…but this guy is monitoring the potty

Food


AQUAFINA


Lean
CUISINE
CRAVEABLES
PEPPERONI
PIZZA
20g PROTEIN


diet
Mtn
DEW
Low Calorie DEW
SEALED

Pro/cons of the ABR experience

Pros

- No fingerprint
- No check-in/check-out for breaks
- Free water

Cons

- Creepy bathroom monitor
- You travelled across the country

Breakdown & difficulty

	Breast	Cardiac	GI	MSK	Neuro	Peds	Thorax	Repro / Endo	Urinary	Vascular	Q#
CT											85
IR											60
MR											89
NM/Molecular											81
Rad/Fluoro											73
US											79
Physics											136
Safety											71
Q#	60	60	60	60	60	60	60	60	60	60	

657 total questions (questions can double count)

Historical Breakdown

Day 1

- 360 questions
- Breast, cardiac, GI, MSK, Neuro, Peds
- Nucs and NIS

Day 2

- 297 questions
- Chest, Repro/endo, GU, Vascular
- Nucs and NIS

Originally: Organized one section at time

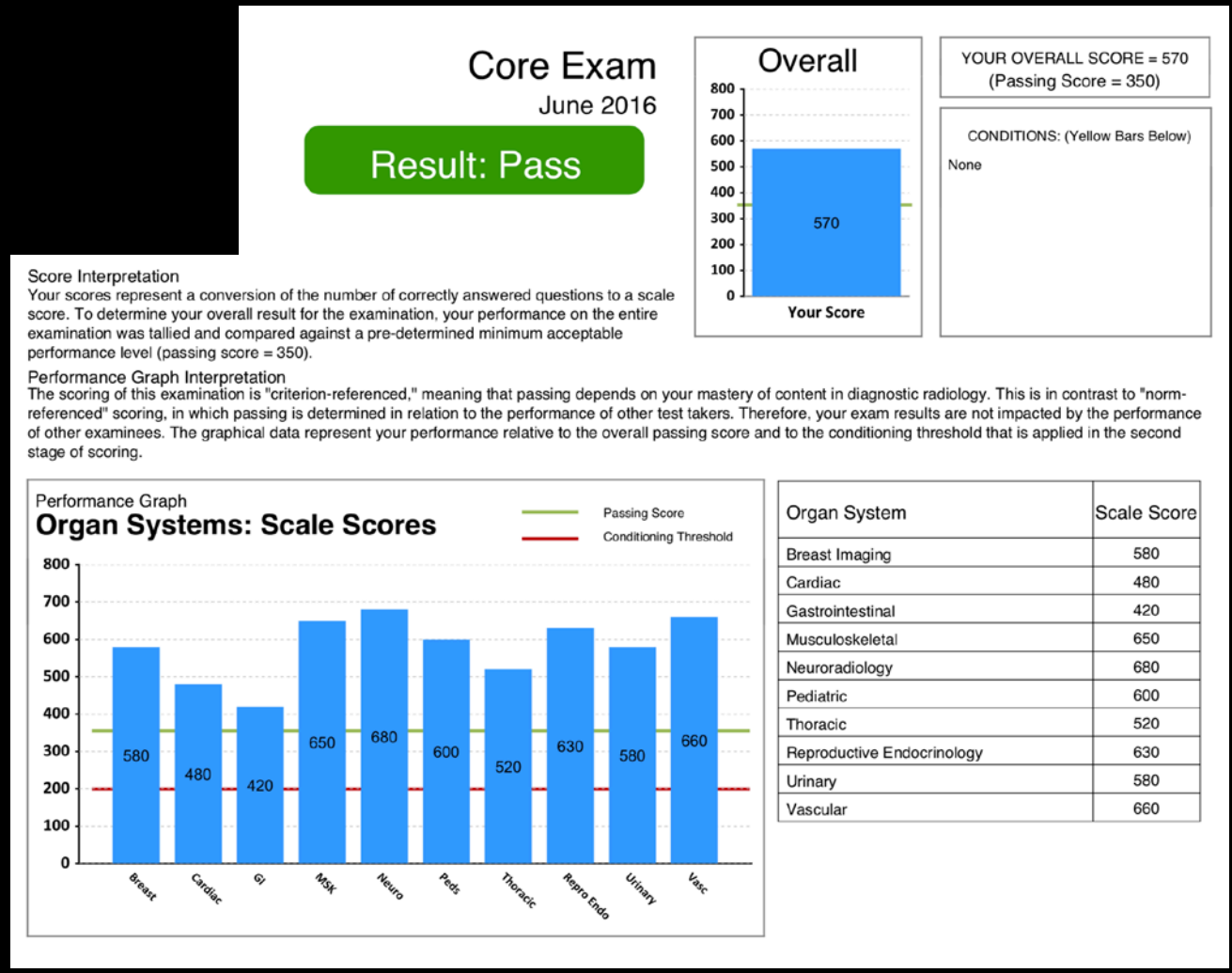
Last year: Jumbled but still divided into Day 1&2 breakdown

This year: ??

Scoring

- **If you pass every category**, your overall result is "**Pass.**"
- **If you fail 1-5 categories** (<200 or <350 physics), your overall result is "**Condition.**"
- **If you fail more than 5 categories**, this exceeds the acceptable number of failed categories, and your overall result is "**Fail.**"

- The green bar (350) does not have any meaning with regard to passing or failing a non-physics section. It is a threshold identified by the ABR committee as a measure of competency.
- These numbers have **NO USEFUL MEANING**
- **People only condition physics**



Core Exam

June 2016

Result: Pass

Overall

YOUR OVERALL SCORE = 570
(Passing Score = 350)

CONDITIONS: (Yellow Bars Below)

None

Score Interpretation

Your scores represent a conversion of the number of correctly answered questions to a scale score. To determine your overall result for the examination, your performance on the entire examination was tallied and compared against a pre-determined minimum acceptable performance level (passing score = 350).

Performance Graph Interpretation

The scoring of this examination is "criterion-referenced," meaning that passing depends on your mastery of content in diagnostic radiology. This is in contrast to "norm-referenced" scoring, in which passing is determined in relation to the performance of other test takers. Therefore, your exam results are not impacted by the performance of other examinees. The graphical data represent your performance relative to the overall passing score and to the conditioning threshold that is applied in the second stage of scoring.

Performance Graph

Organ Systems: Scale Scores

Organ System	Scale Score
Breast Imaging	580
Cardiac	480
Gastrointestinal	420
Musculoskeletal	650
Neuroradiology	680
Pediatric	600
Thoracic	520
Reproductive Endocrinology	630
Urinary	580
Vascular	660

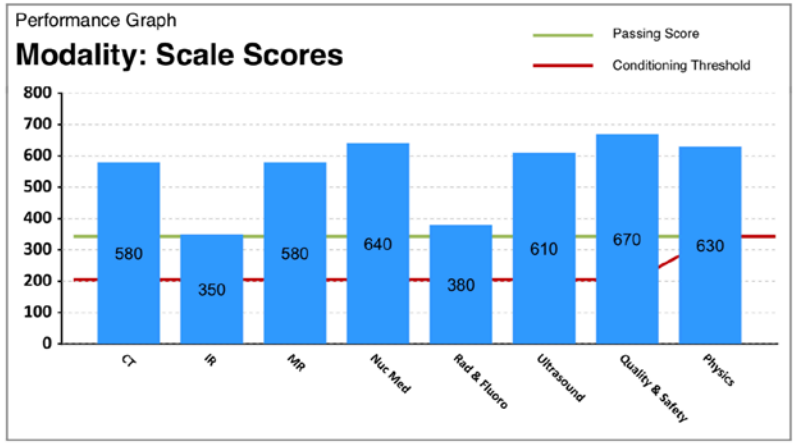
Modality Scoring

- Modalities are sections too.
- Physics is the only section where the conditioning threshold is the same as the passing threshold.
- Everything else has the 200-350 cushion, which is why no one fails anything else

Core Exam

June 2016

Performance Graph



Modality	Scale Score
Computed Tomography	580
Interventional Radiology	350
Magnetic Resonance	580
Nuclear Medicine	640
Radiography & Fluoroscopy	380
Ultrasound	610
Quality & Safety	670
Physics	630

Scoring for the Core Examination

The ABR Diagnostic Radiology (DR) Core Examination is scored in a two-stage process. This process is performed for each individual examinee.

Stage One

Your overall score for the entire examination is tallied and compared against a pre-determined minimum acceptable performance level, or passing score. This level is set by a group of content experts and educators who, for each question on the exam, determine whether a resident just above the competency threshold would be expected to select the correct response. This standard psychometric process, known as the Angoff standard setting, has been used by the ABR for many years for all of its "written" and computer-based examinations. Exam scores are calculated on a scale, which ranges from 150 (lowest possible score) to 800 (highest possible score).

If your overall score is below the passing score, your overall result is "Fail."
If your overall score is at or above the passing score, stage two of scoring is applied.

Stage Two

Your performance in each of the 18 categories is independently calculated and compared against a conditioning threshold specific for each category, which is set by the Board of Trustees. For the initial Core Examinations, this level is higher for Physics than for the other categories.

If you pass every category, your overall result is "Pass."
If you fail 1-5 categories, your overall result is "Condition."
If you fail more than 5 categories, this exceeds the acceptable number of failed categories, and your overall result is "Fail."

No “curve”

- Grading is “criterion”-based and not “norm”-based.
- Theoretically, each question is fair and designed to be answerable by a proportion of “competent” radiologists
- The Angoff method:
  - a panel of “experts” grade each question with the proportion of minimally competent examinees they estimate would get the question correct.
  - Sum of the averages of each question = raw score = passing threshold.
  - Sounds scientific

Segue

Content

- 40% easy, 40% reasonable, 20% BS or legitimately challenging

- 1-2 sentence question stems
- Majority are 1 to 4 still images/slices
- Ultrasound and (cardiac) MRI - CINE clips
- Very few CT images with scrolling
- ~10 linked question sets
- Rare drop-down menu or matching

Physics

- Most physics items practical and reasonable
- What is this artifact? How could you fix the artifact?
- How would you reduce dose?

- ***Do not*** focus on film-screen esoterica
- ***Do*** focus on relationships (e.g. kVp, MAS, dose, image contrast, spatial resolution). Linear or exponential?
- ***Do*** focus on nucs microdetails including **radionuclide safety**

Study Approach

- Limit your resources, don’t let gunners make you question your prep
- Don’t spend all day chasing zebras that aren’t classic Aunt Minnies.
- Esoteric knowledge may help with achieving a high score but it will never be necessary to pass an exam aimed at **minimal competence**.
- Don’t buffet-dinner your schedule and over-pack it
- **No resource has a monopoly on radiologic pathology.**

Cases & Qbanks

- **A Core Review** (n=9) = 4.6
- Rad Cases (n=7) = 3.5
- **CTC Case Companion** (n=9) = 4.3
- Case Review Series (n=1) = 4
- Cases in Radiology (n=0)

- **RadPrimer**
- Qevlar
- BoardVitals
- Face The Core
- Rock The Boards

Physics & NIS

- **War Machine**
- RSNA Modules
- Huda
- Radiographic MRI artifacts
- Raphex tests

- **ABR Syllabus**
- CTC
- Stanford NIS Videos

Test Day

- Don't overthink the questions.
- Don't try to outsmart the test.
- There are plenty of easy questions.
- Be prepared to grab the points and run.

- Totally a thing:
  - Normal variants
  - Unusual, nonmalignant, or physiologic uptake on nucs
  - Classic things in weird views or modalities
  - Anatomy

The beauty of multiple choice

- Recognize > Know
- Answer choice priming
- No “my differential is longer” contests

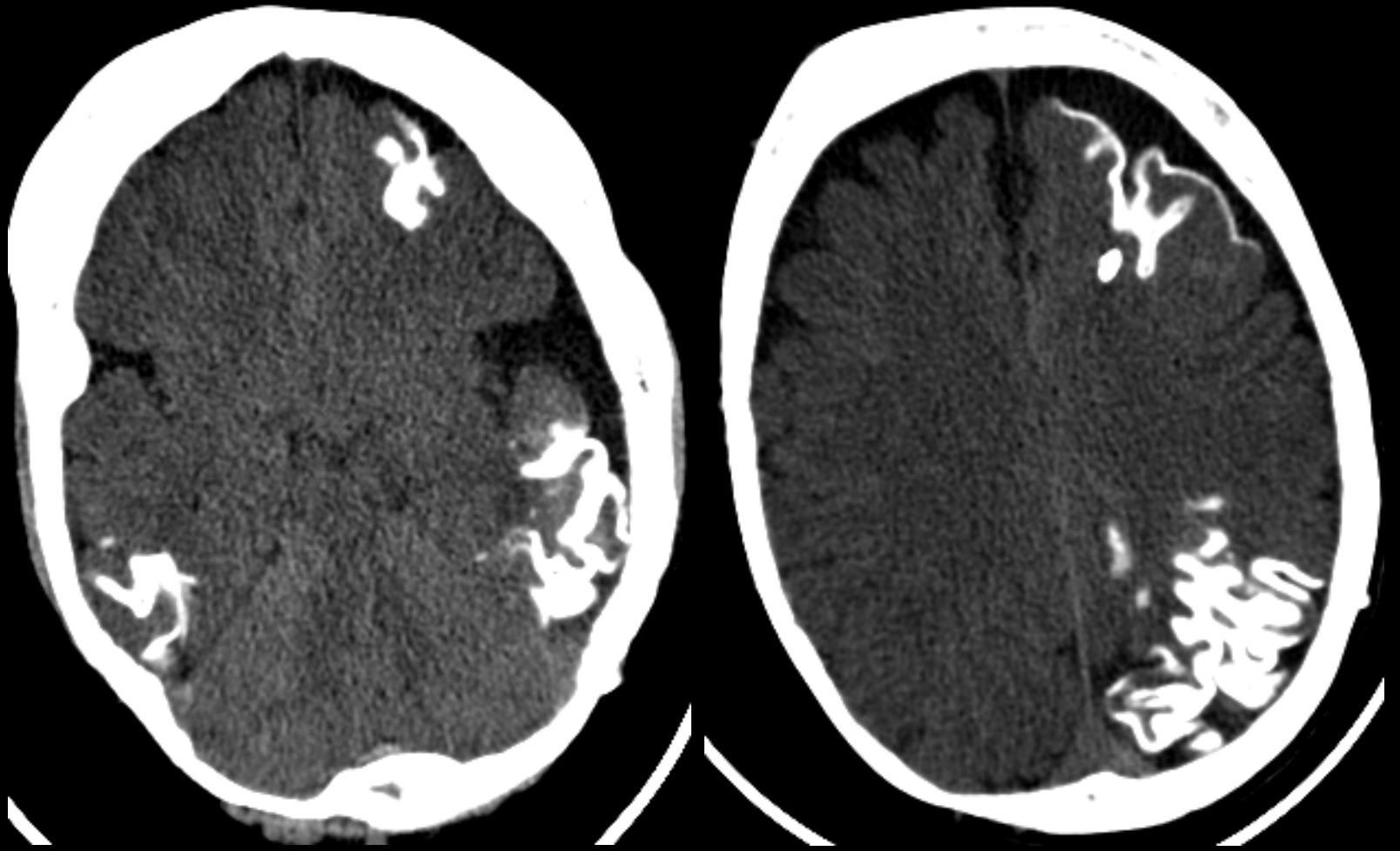
Question styles

Different diagnoses lend themselves better to certain formats

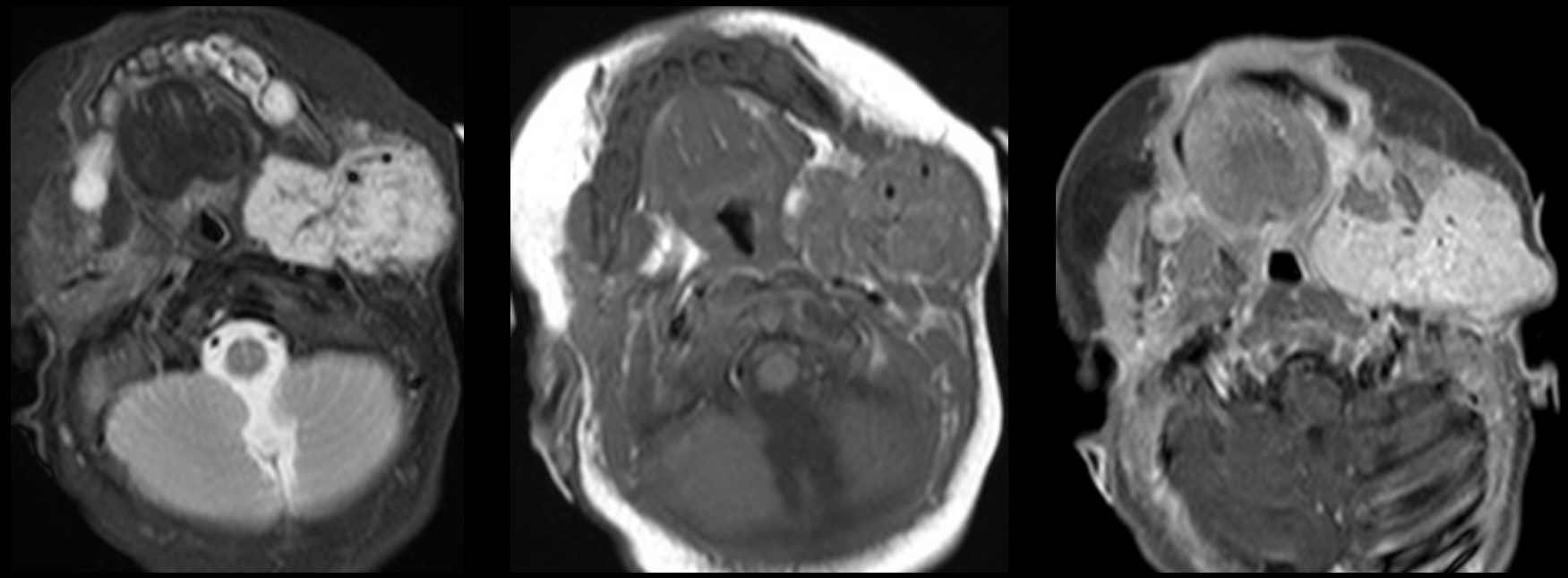
Aunt Minnies

- You know her when you see her

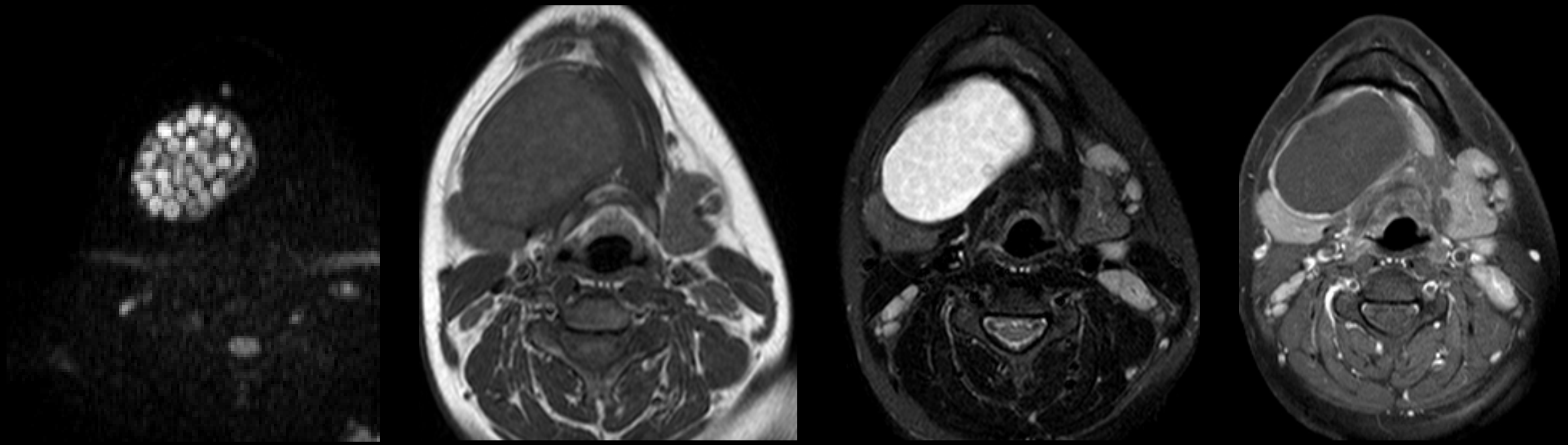
Sturge Weber



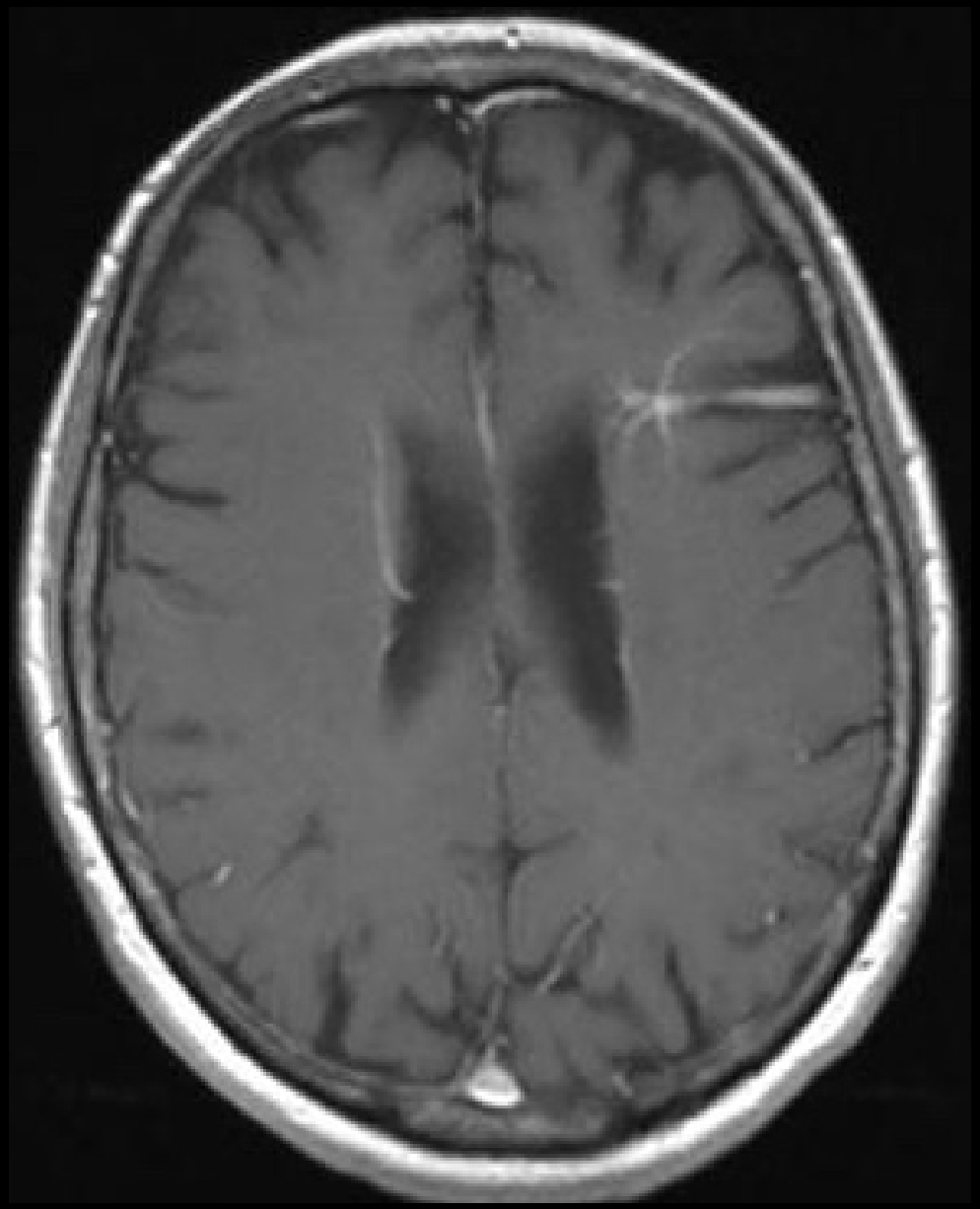
Infantile hemangioma



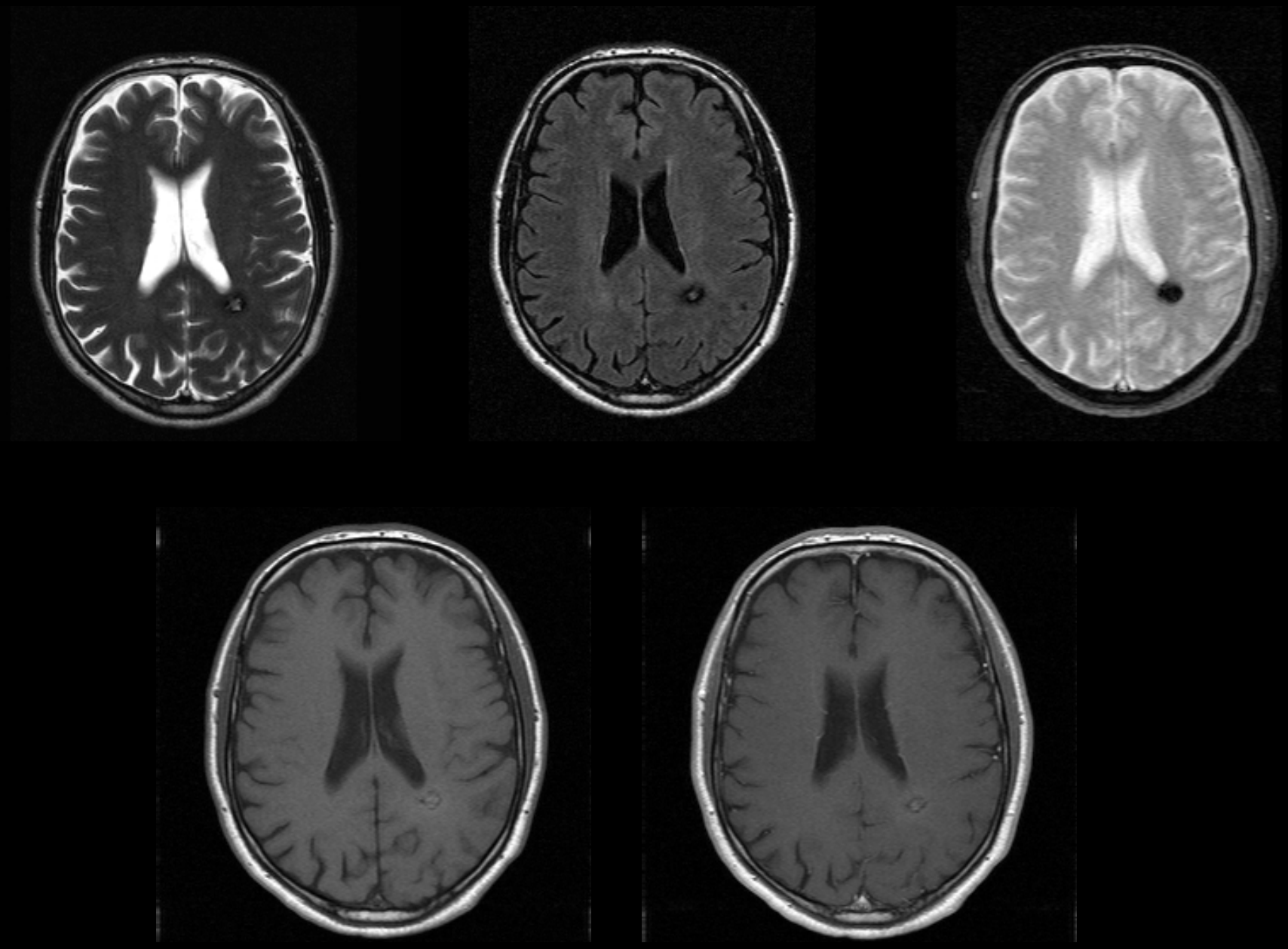
Dermoid



DVA



Cavernoma

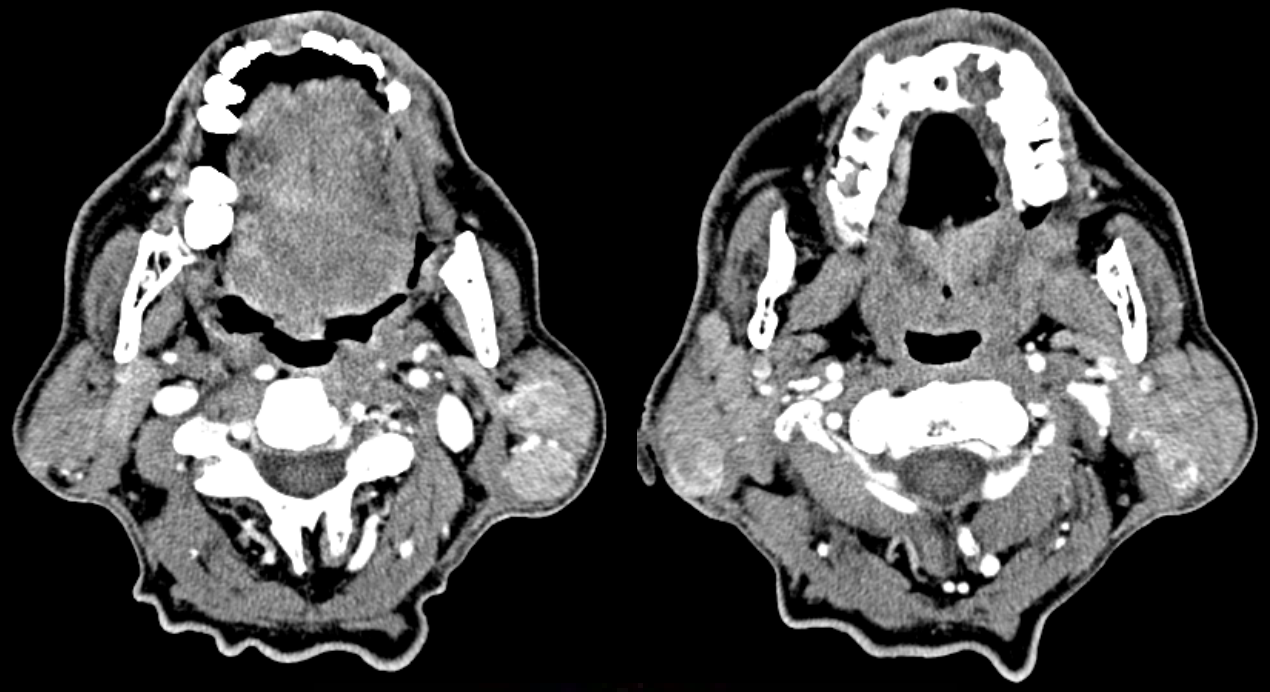


Nonspecific to specific

- History
- Special feature

Warthin

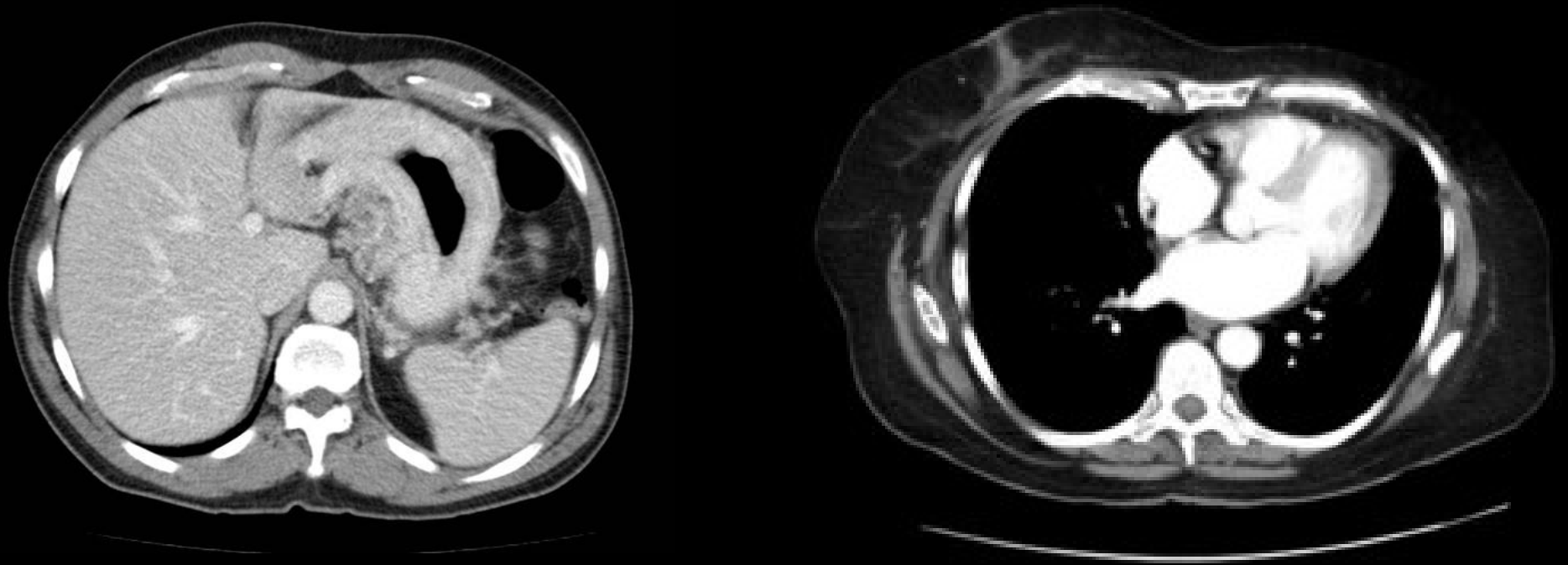
a) Adenoid cystic carcinoma
b) Benign mixed tumors
c) Carcinoma ex pleomorphic adenoma
d) Mucoepidermoid carcinoma
e) Pleomorphic adenoma
→ f) Warthin tumor



Rare: the oral boards ancillary finding

- Sometimes, you need a second separate finding to inform the first

Scirrhous metastasis from breast cancer



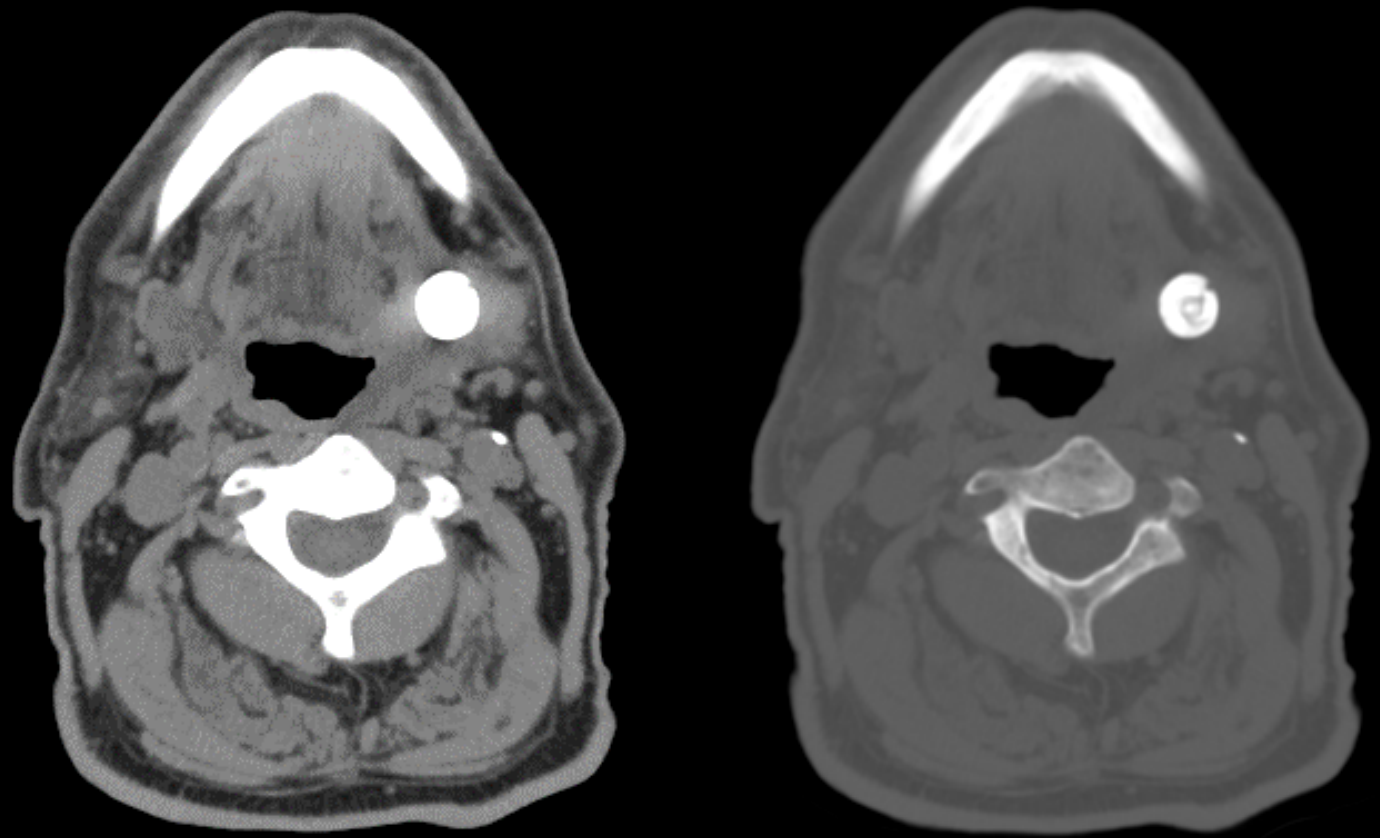
Scleroderma

Anatomy & behavior

Sialothiasis

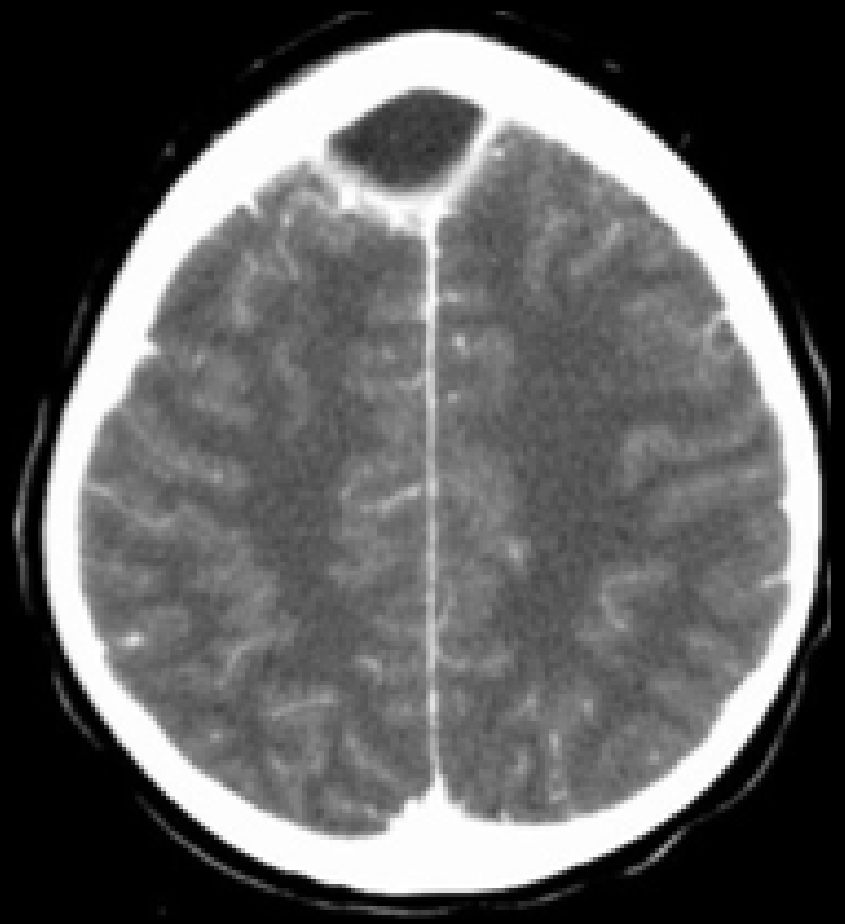
Which gland is most commonly affected?

a) Sublingual gland
b) Submandibular gland
c) Minor salivary glands
d) Parotid gland
e) Von Ebner’s glands



Epidural abscess

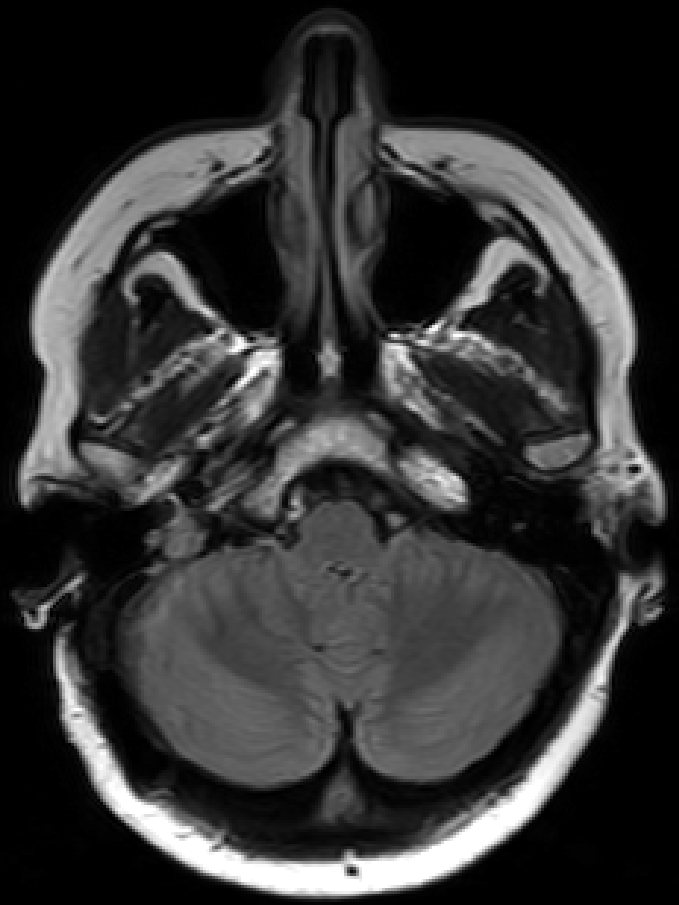
a) Subarachnoid
b) Subdural
→ c) Epidural
d) Epiploic
e) Medullary

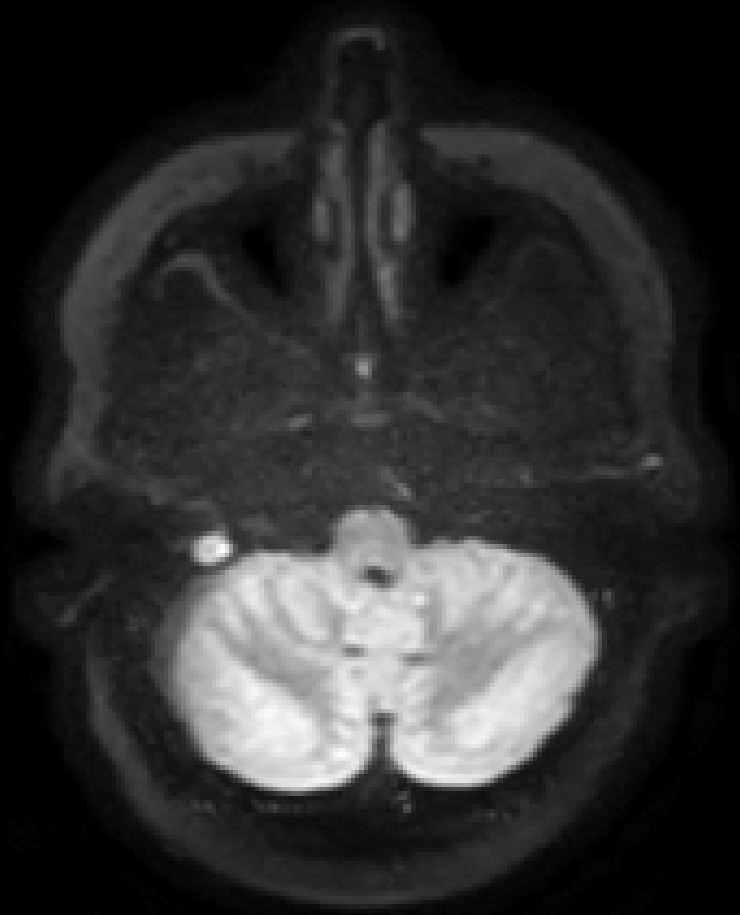


MRI: when signal is everything

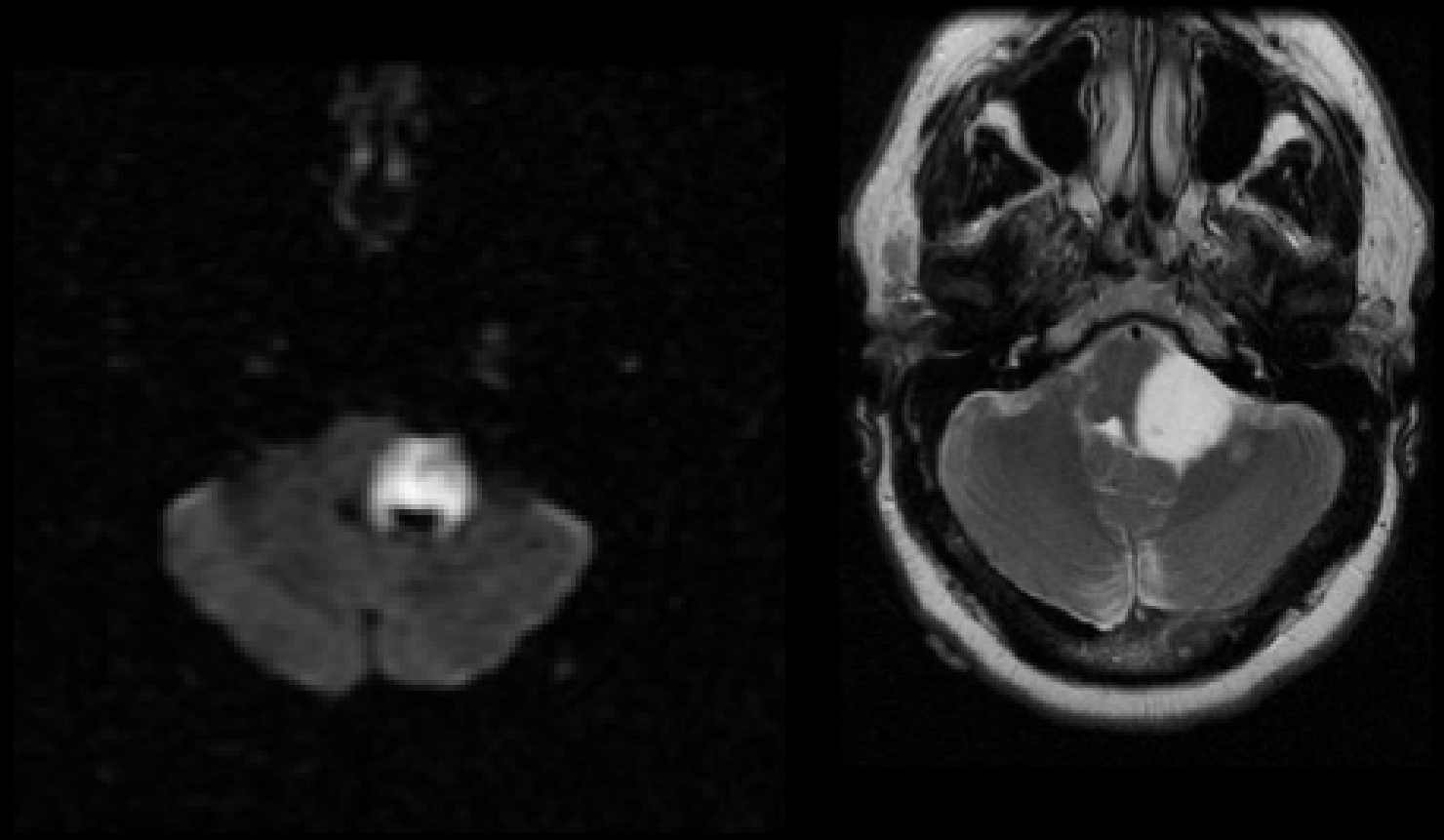
- Especially T1 and DWI

Cholesteatoma

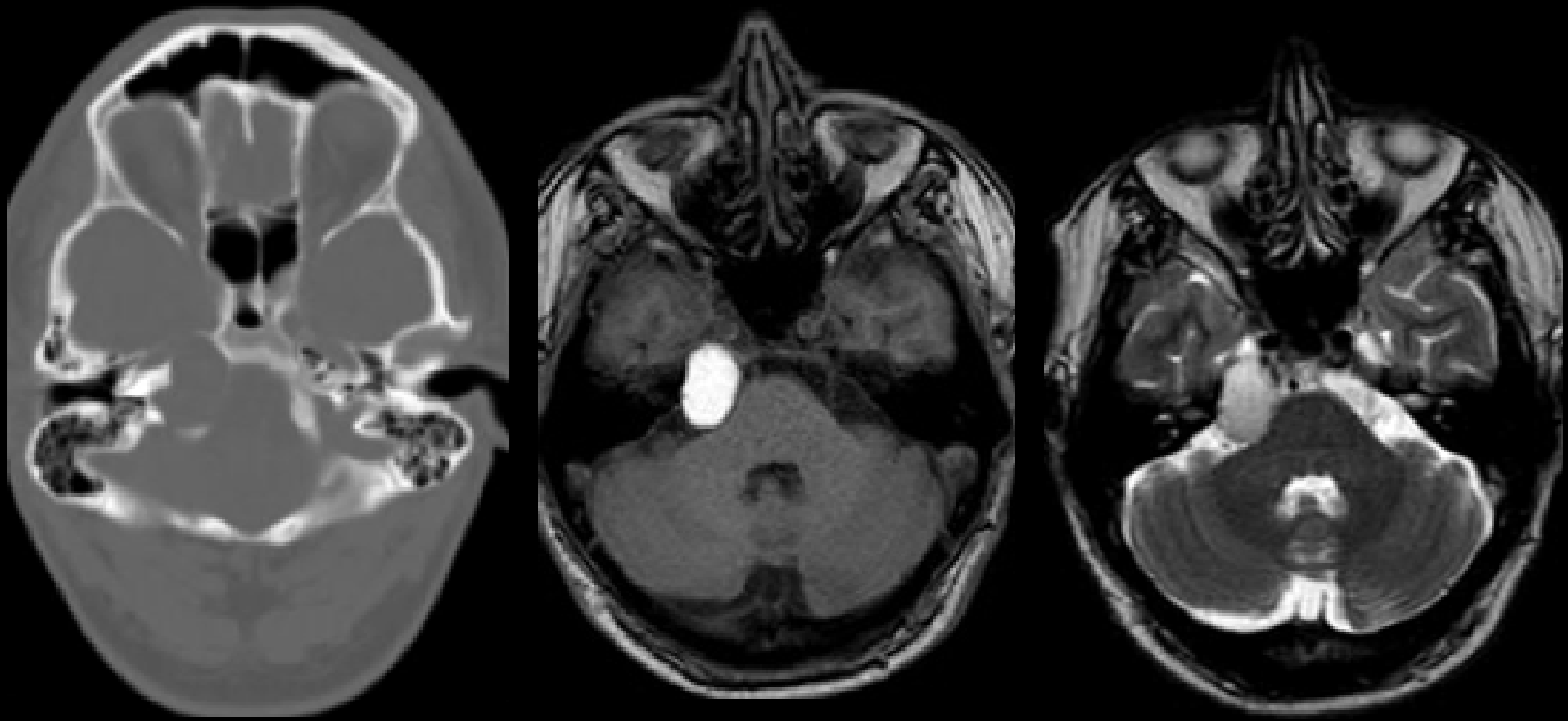




Epidermoid



Cholesterol granuloma

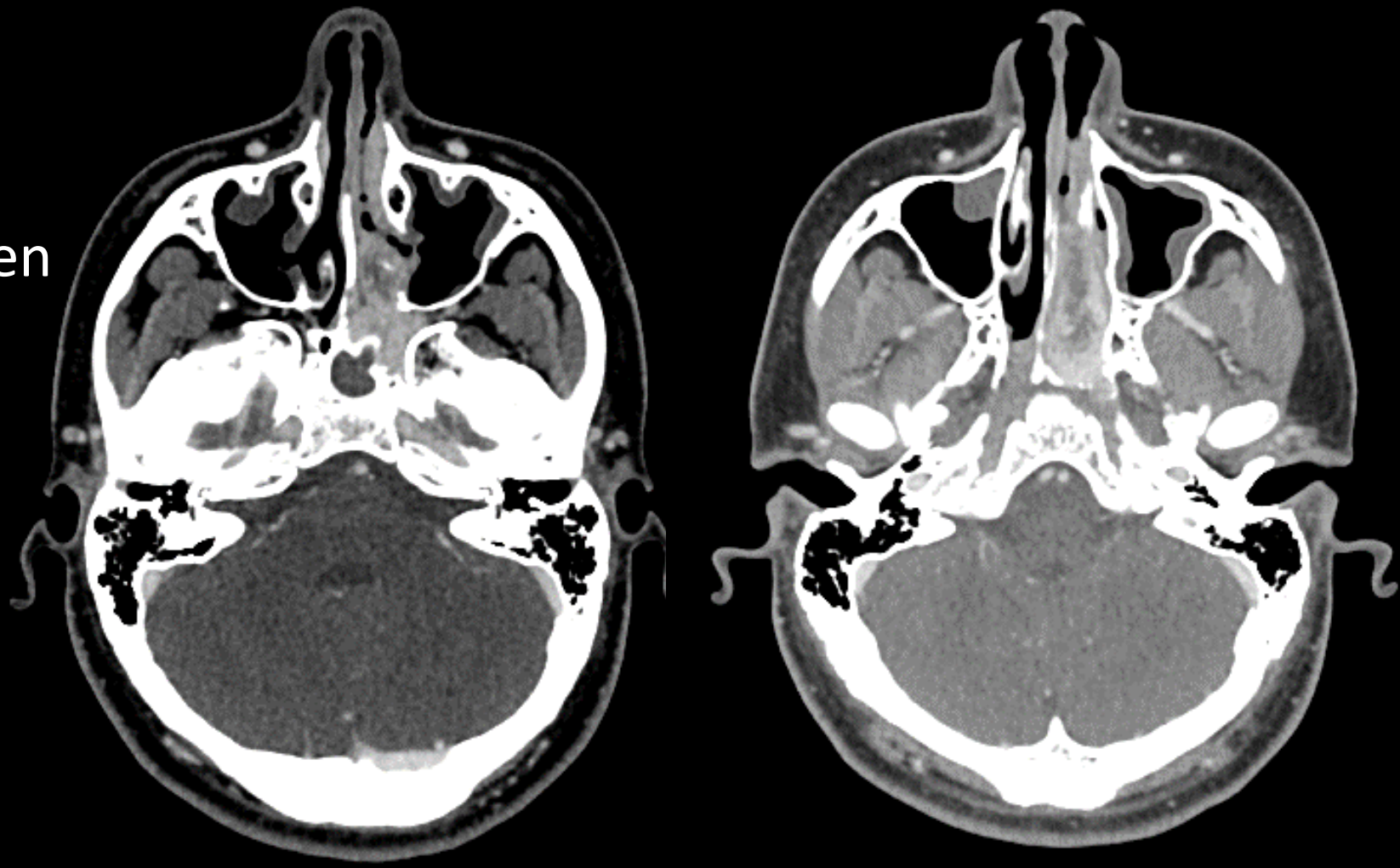


Second order only for the super-easy

Juvenile nasopharyngeal angiofibroma

Originates?

a) Sphenopalatine foramen
b) Pterygopalatine fossa
c) Middle meatus
d) Fossa of Rosenmueller
e) Kisselbach's triangle

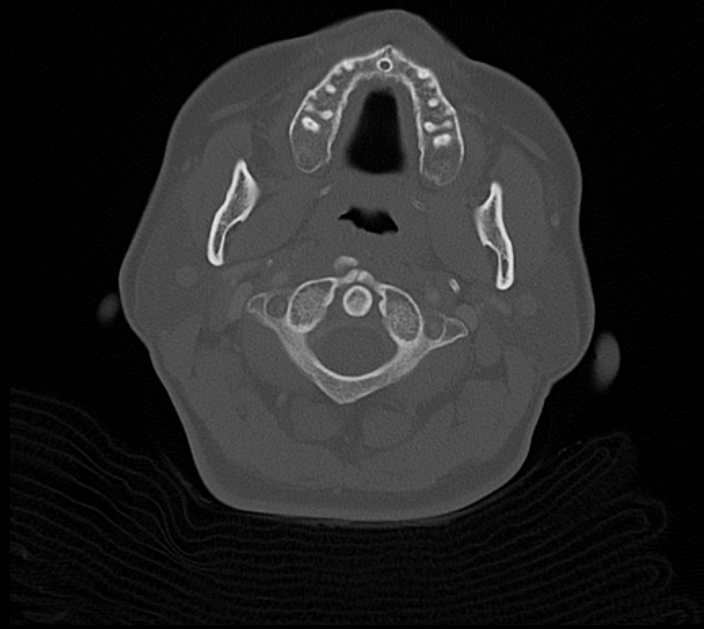


Predominately nasal mass that originates at the **sphenopalatine foramen** and involves the pterygopalatine fossa.

May require thought

Longus colli calcific tendinitis

a) Retropharyngeal abscess
b) Pharyngeal sarcoma
c) Deep cervical fasciitis
d) Ludwig Angina
→ e) Longus colli calcific tendinitis



Management

Back pain

45-year-old male s/p MVC with mild midline reproducible back pain. Next step?

a) Flexion-extension views
b) Oblique foraminal views
c) CT thoracic spine
d) No further imaging necessary

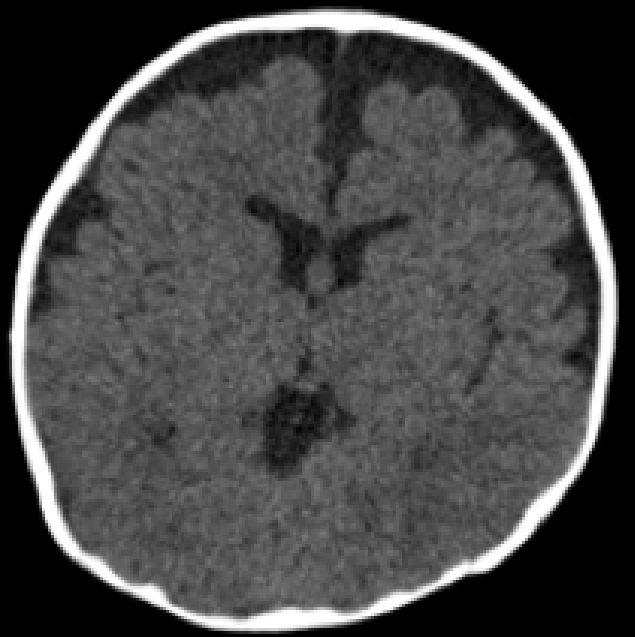
Next step?

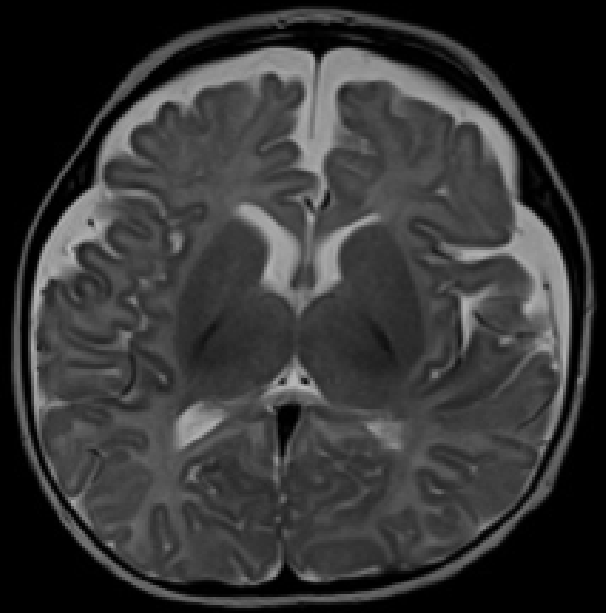
a) Drop the Mic.
b) Document fracture in report. Powerscribe sign.
c) Call ordering provider and document phone call using their full name and SSN
d) Call spine service directly because the midlevel in the ED is a dolt

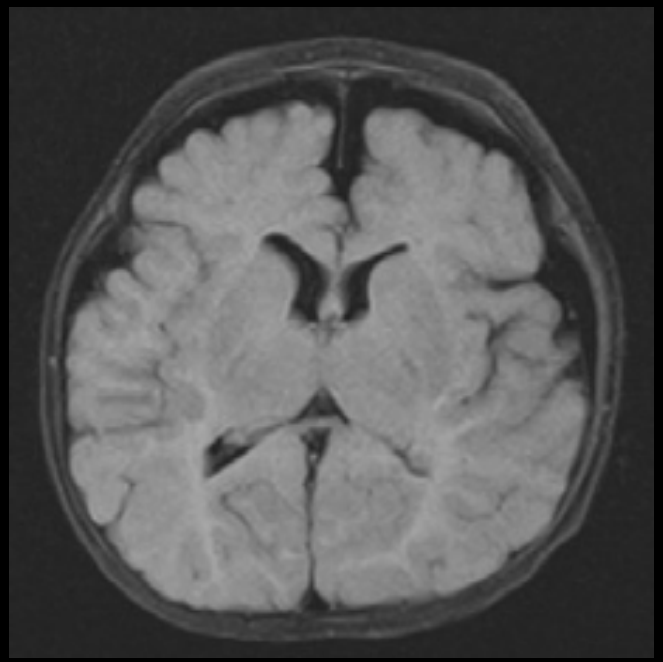
BESSI

4-month-old male with head circumference greater than the 95th percentile. Normal development. What is the recommended course of action?

a) Investigate metabolic, toxic, and genetic causes for neurodegenerative disease.
b) Perform a lumbar puncture to confirm suspected meningitis.
→ c) Requires expectant follow-up only.
d) Initiate an investigation for possible physical child abuse.







Gamesmanship

They can’t outsmart you.

You can only outsmart yourself.