



HEAD AND NECK IMAGING

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FULL DISCLOSURE!

- No conflicts of interest
- No financial relationships
- I'm a doctor (not an MRI expert!)
- What follows is my personal experience (everyone's different)
- Images should be used only for teaching purposes, not put on social media or published in any format

AIMS

- To show you what I do every time I report MRI
 - To present a rationale for the sequences I use
 - To challenge you to interpret some images
 - Present some cases that illustrate key points
-
- Not to cover the whole of head and neck imaging
 - Use MRI to solve problems- this is a 'user' group after all!



THE BEGINNING...

- Why use MRI?
 - Obviously....it's the best!
 - Excellent soft tissue detail
 - Lesion characterisation
- When do I use MRI?
 - For all head and neck tumours (bar one)
 - Cranial nerve imaging
 - TMJs etc.....
- When don't I use MRI?
 - Acute trauma/ infection
 - Laryngeal cancer



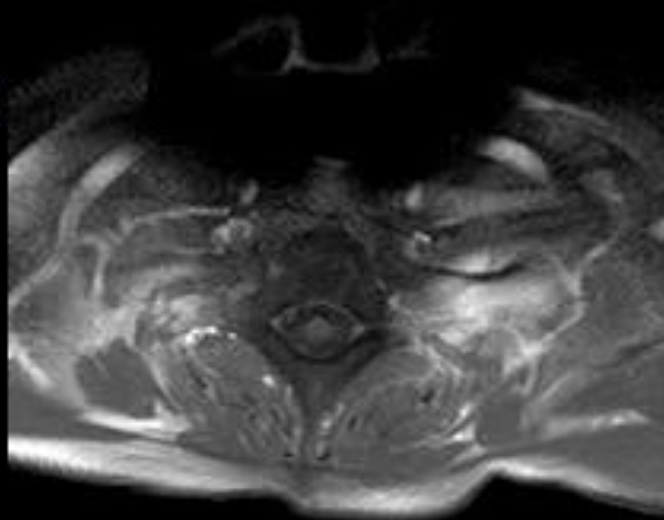
CHALLENGES AND SOLUTIONS

- Complex anatomy
- Thin and thick bits
- Metallic artefact
- Breathing and swallowing

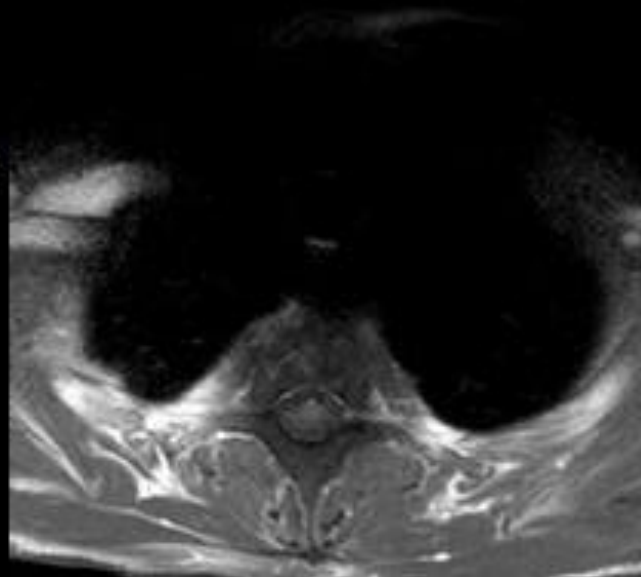
- High resolution imaging
- High quality, reliable fat saturation
- Anti-artefact sequences
- Don't breathe or swallow (only joking!)



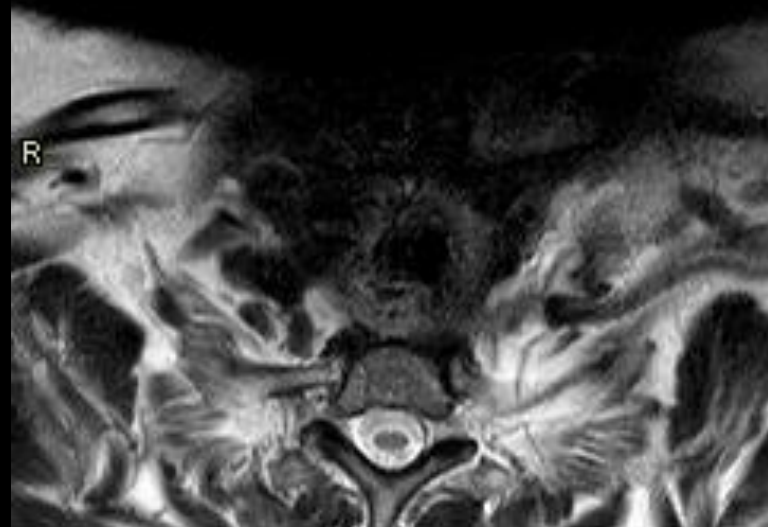
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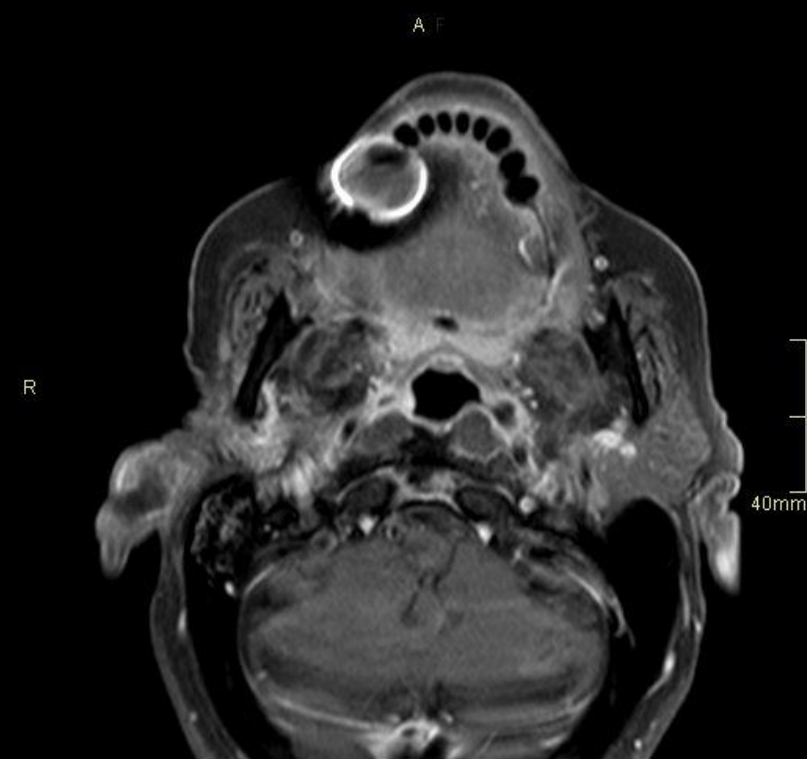
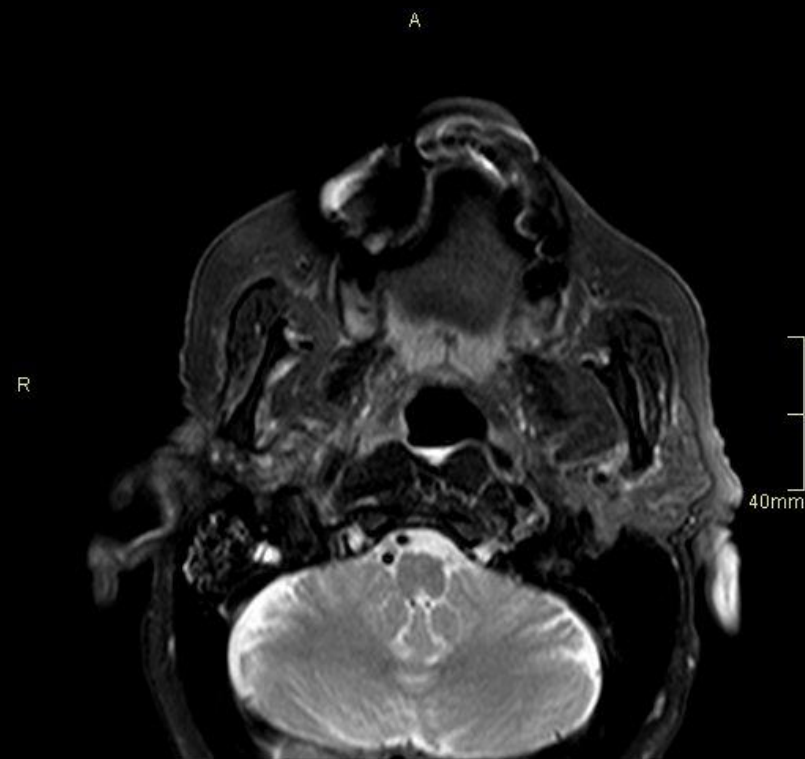
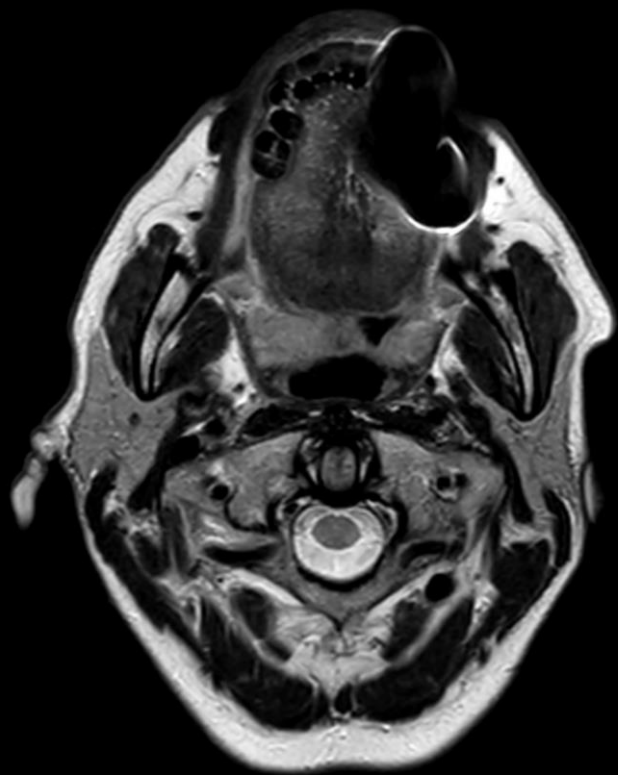


R



R





JIGSAW PUZZLE

- MRI is like a jigsaw
- You need all the pieces to make sense of the picture
- Taking one sequence alone limits your ability to solve the puzzle
- If one sequence isn't very good- is it tempting to think 'never mind, the rest were OK so let's not repeat it'?
- What if everyone in this room had to come up with the answers?
- Challenge yourself in this session to do so!



MNECKC

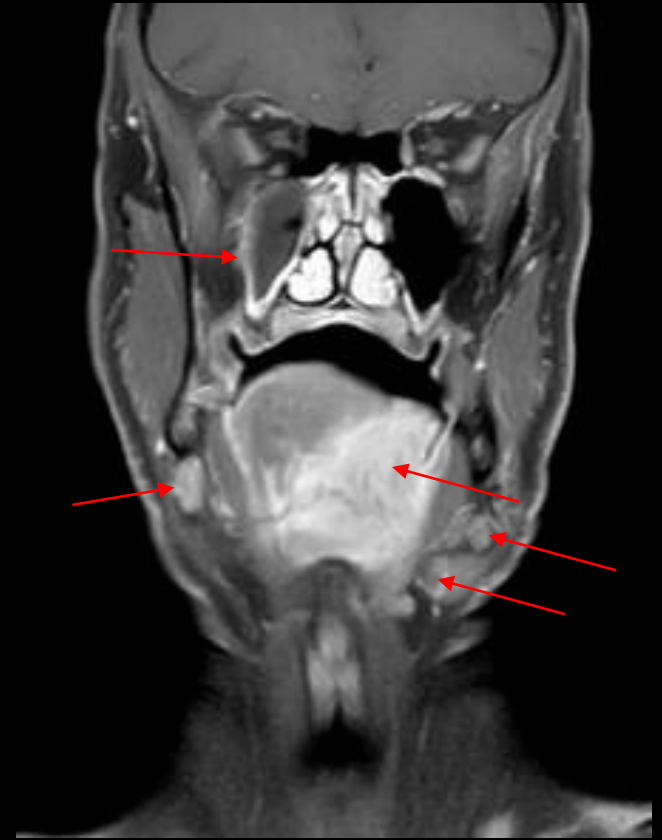
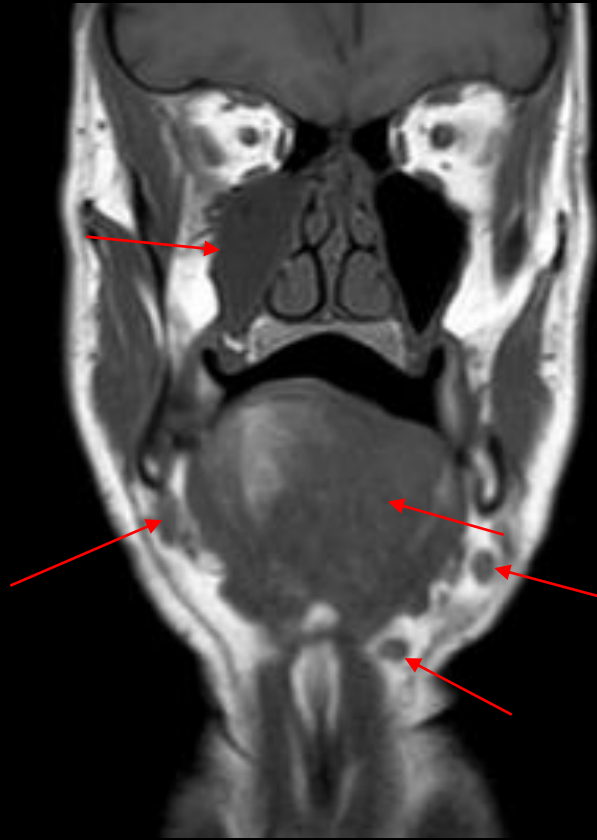
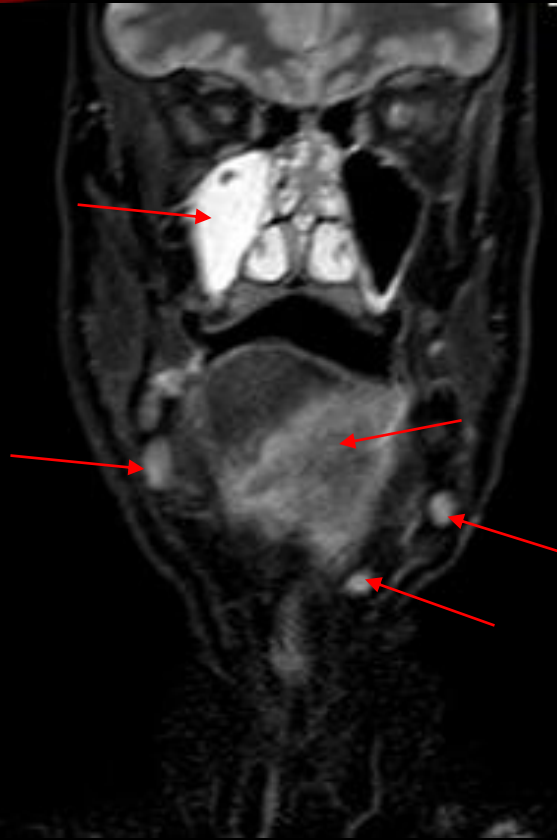
- My standard soft tissue neck jigsaw puzzle
- Coronal- STIR, T1W, fat sat post-Gd T1W
- Axial- high-res T2W (or fat sat T2W), T1W, fat sat post-Gd T1W
- Sagittal- tongue base and nasopharynx T1W and fat sat post-Gd
- DWI

- Skull base to clavicles (covering lung apices)
- Think- light-bulb, anatomy, pathology!





CASE 1- 69 YR OLD MALE; DYSPHAGIA



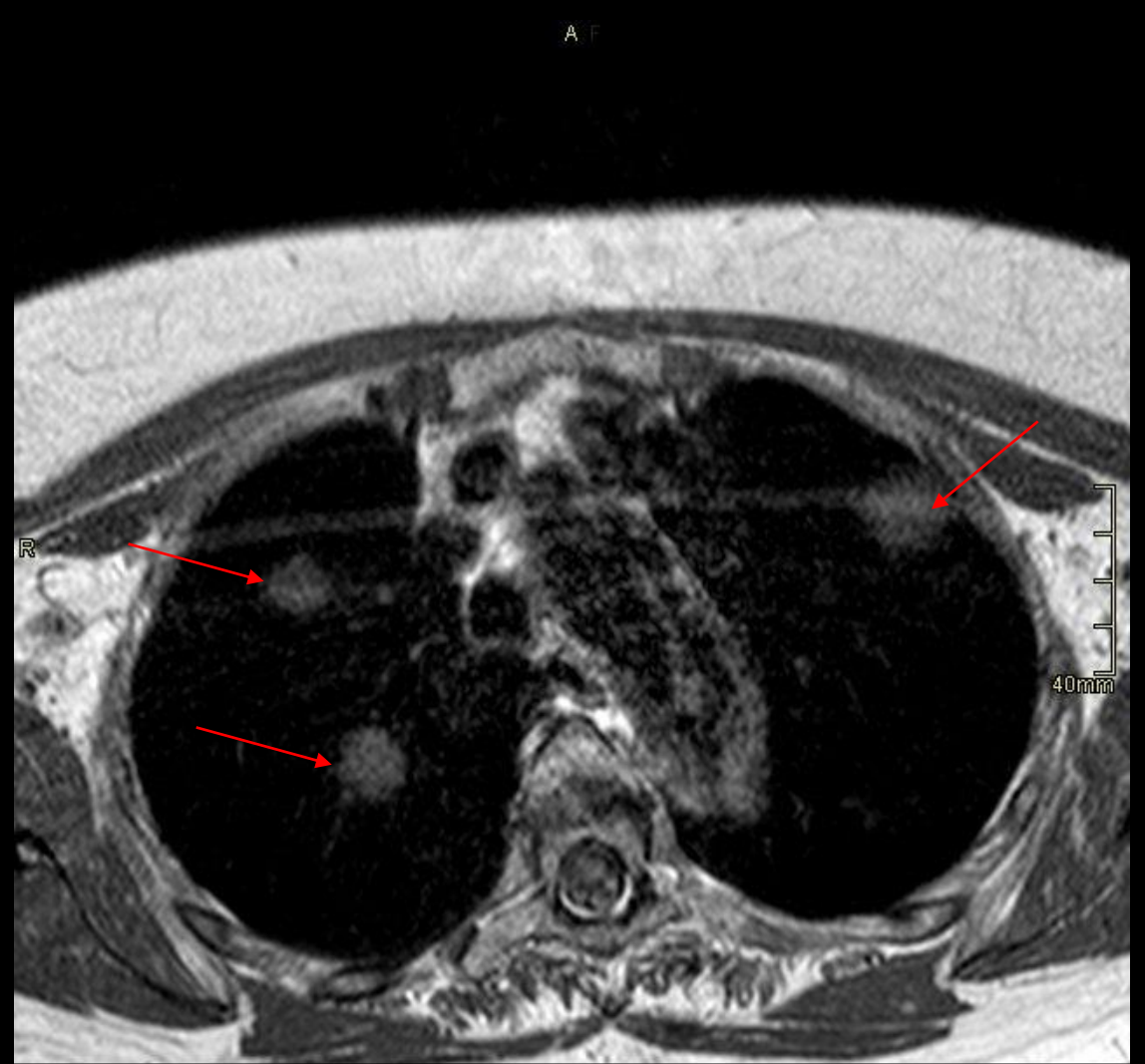
QUESTIONS

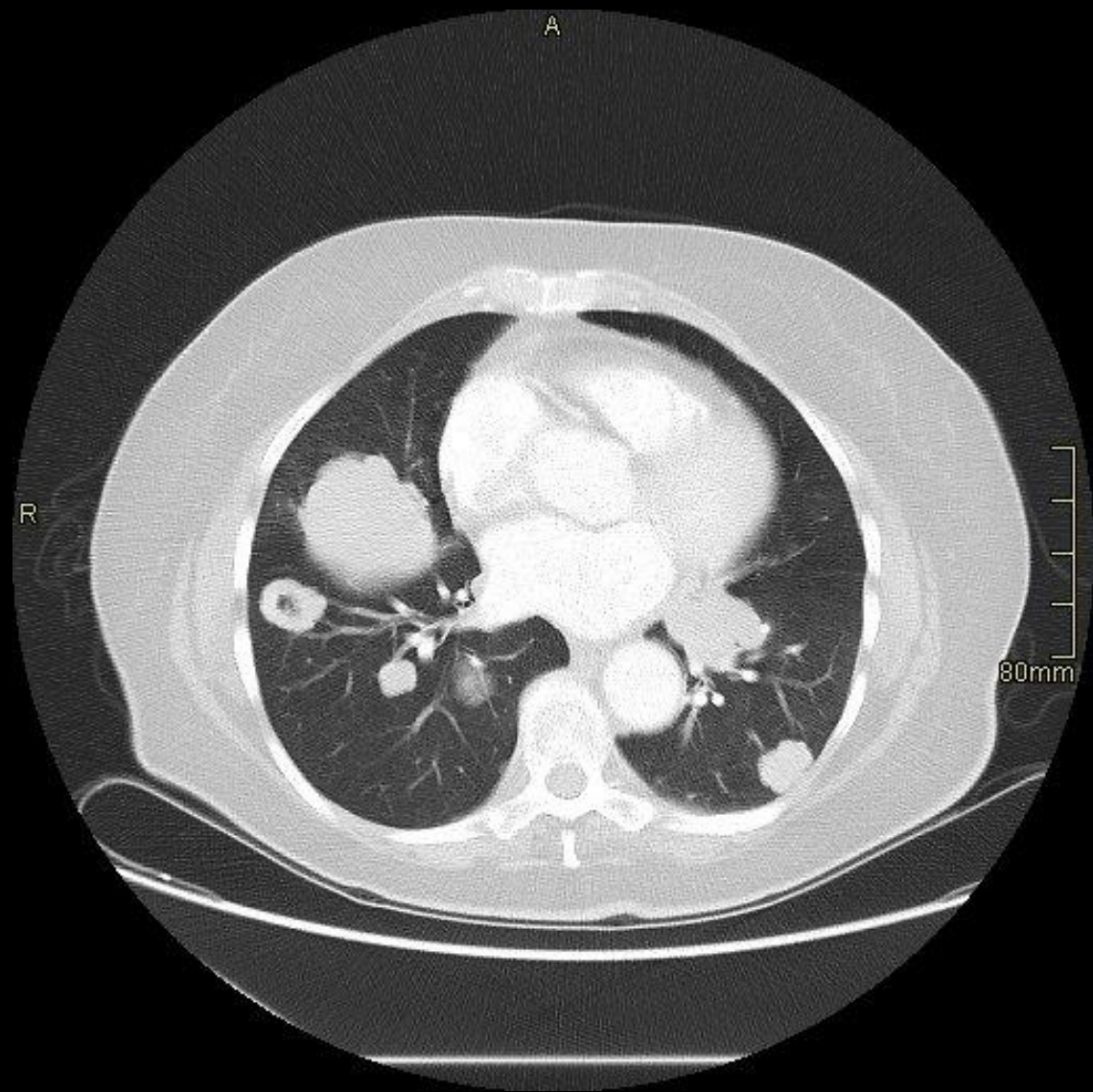
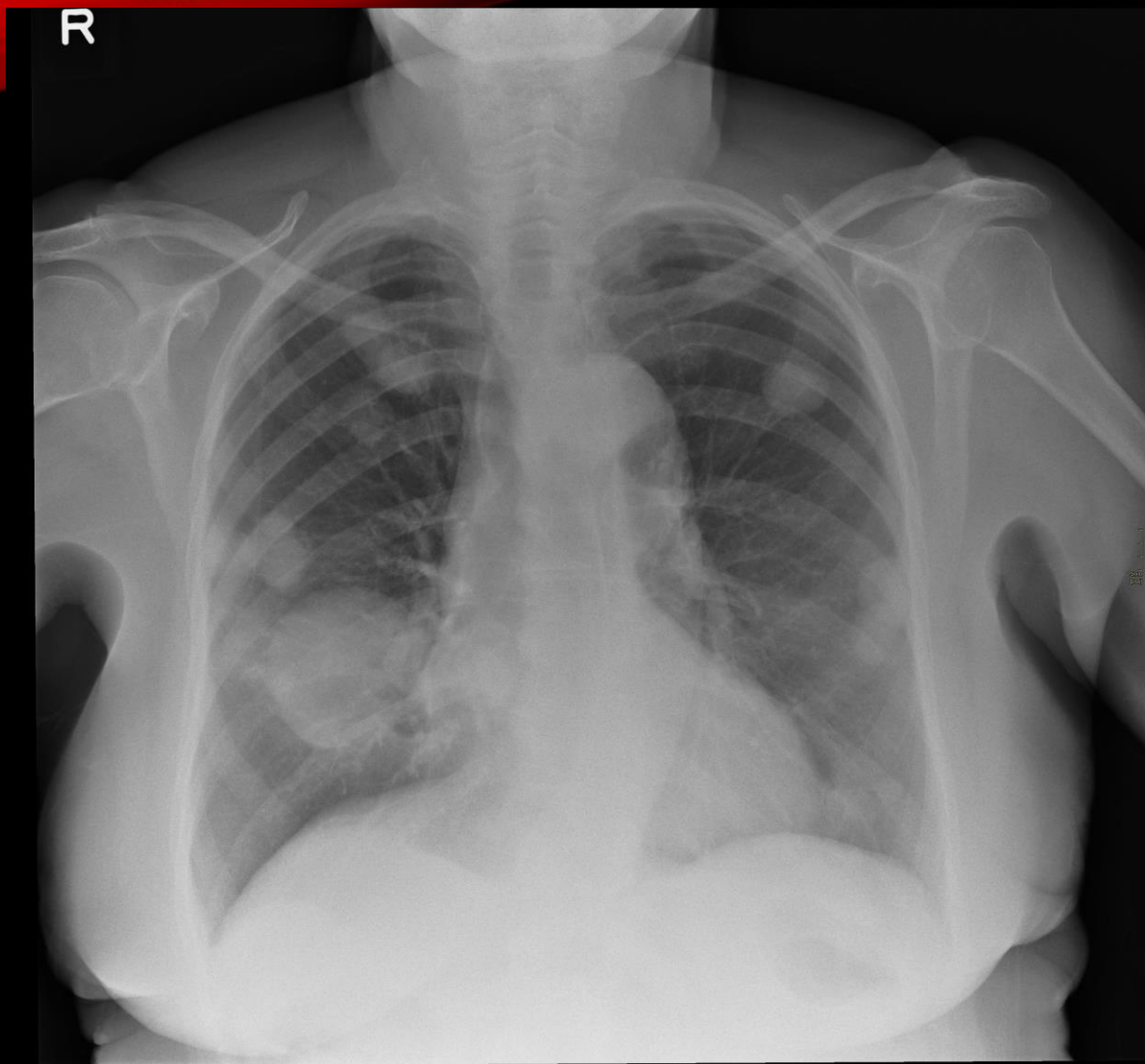
- 1- What is wrong with the maxillary sinus?
- 2- What would you recommend (if anything?)
- 3- What is the most likely problem with the tongue?
- 4- What is the T stage?
- 5- What do you think about the nodes?
- 6- What would you do next?





CASE 2- 55 YR OLD FEMALE
PAST HISTORY OF PAROTID ADENOID CYSTIC
CARCINOMA







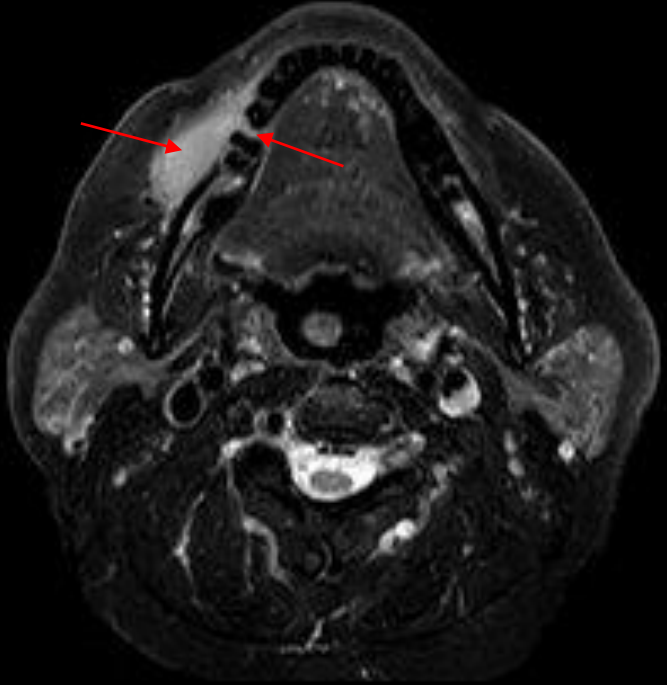
LEARNING POINT- ALWAYS LOOK
AROUND THE MARGINS OF THE SCAN



CASE 3- 76 YR OLD MALE; PAINFUL
MOUTH

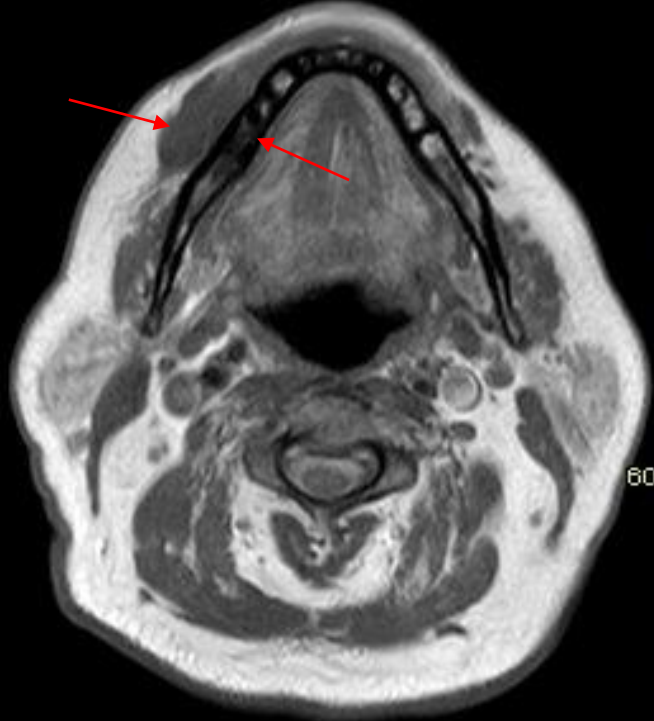
A

R



A

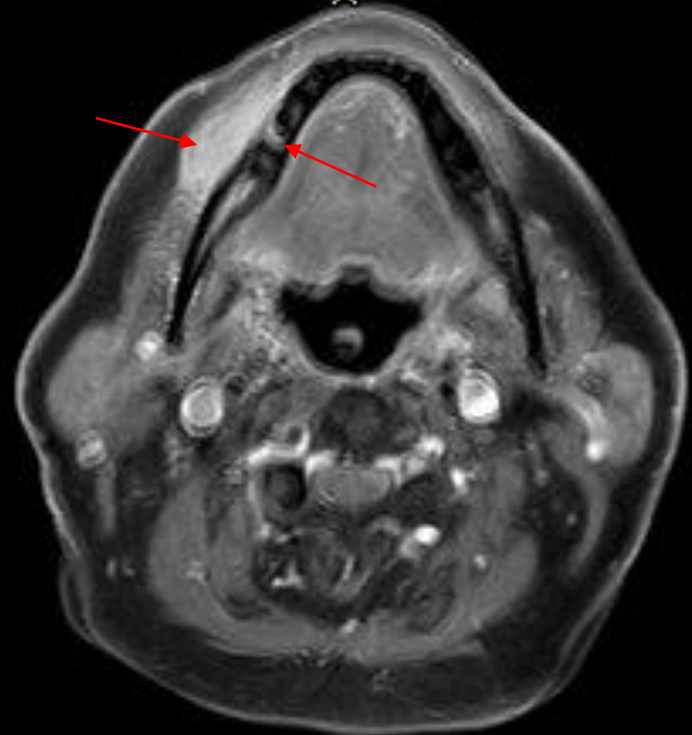
R



60mm

A

R



H



H

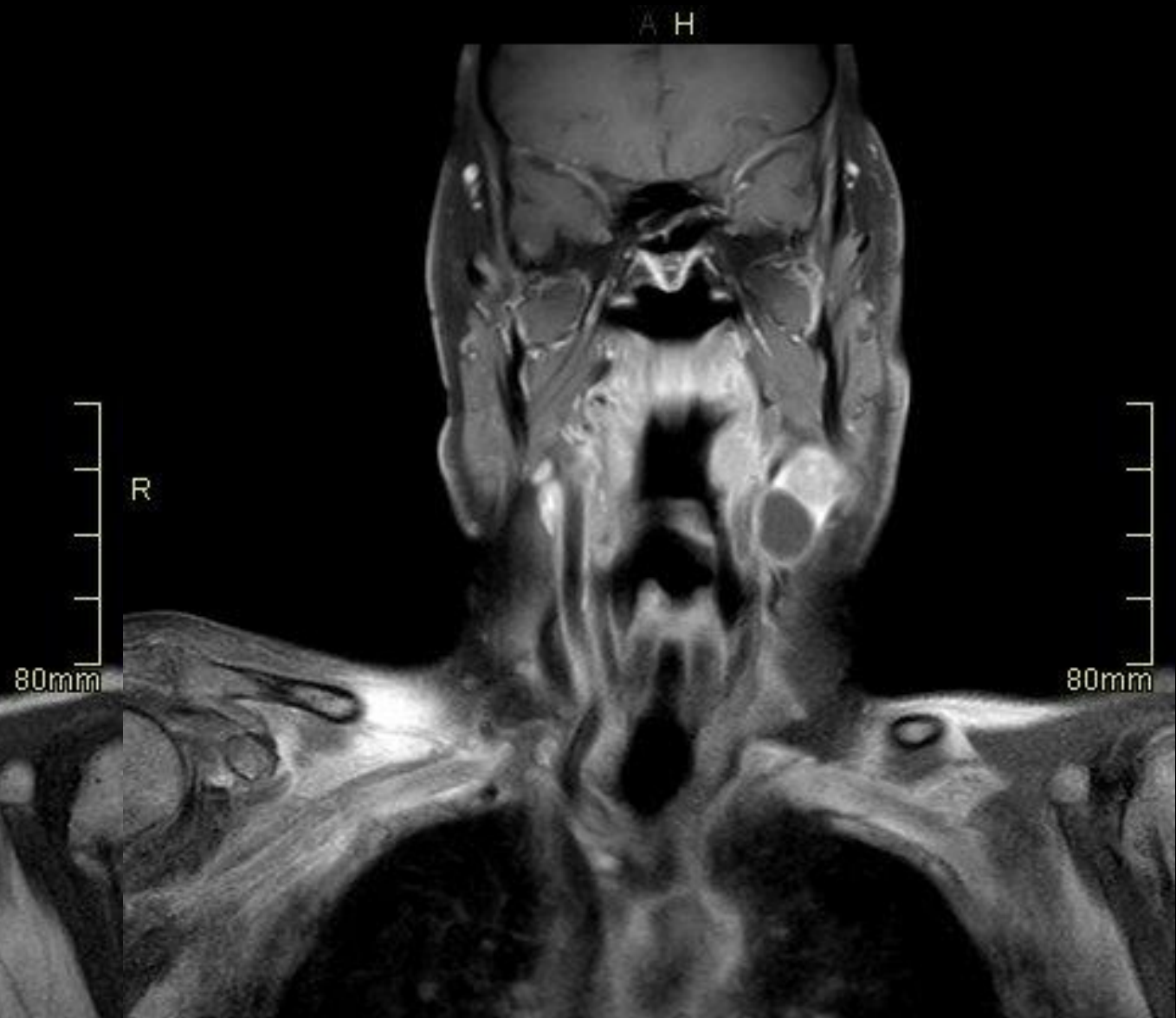
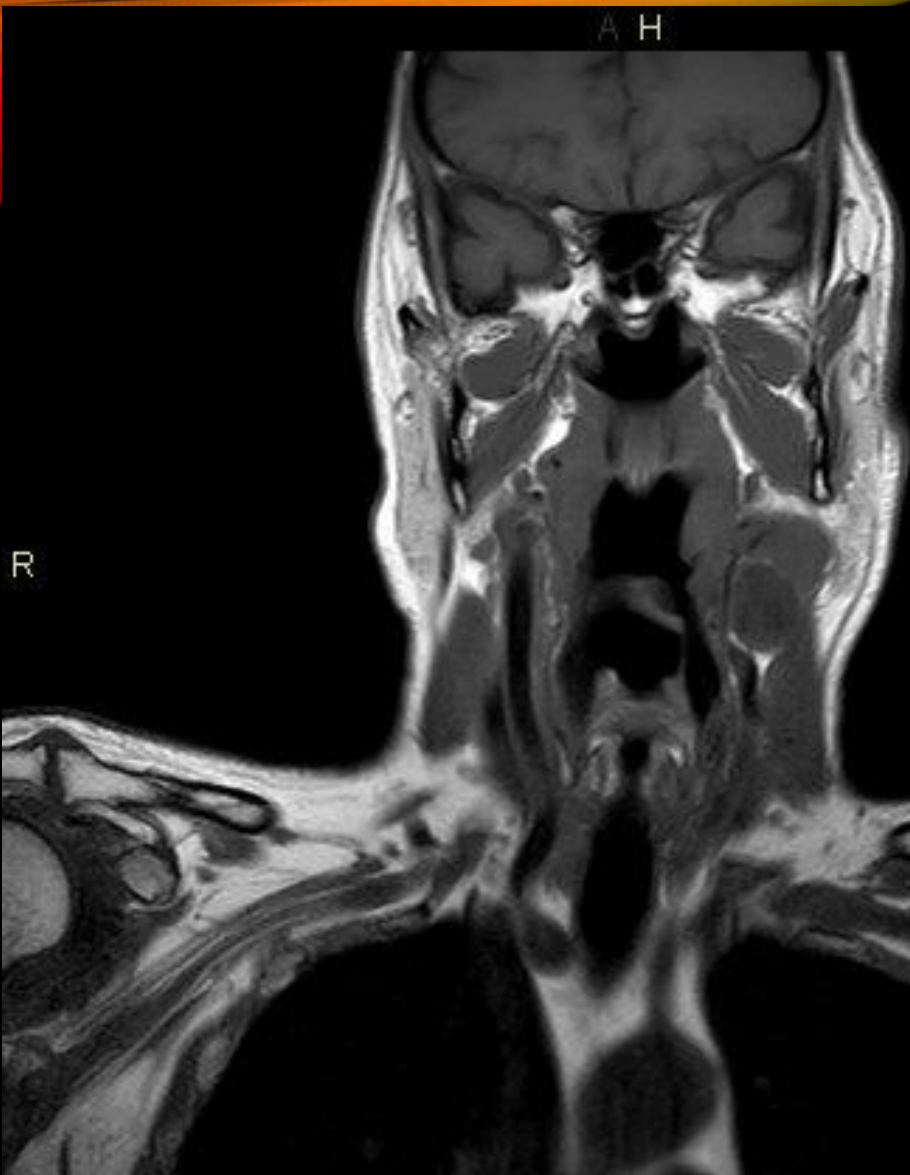


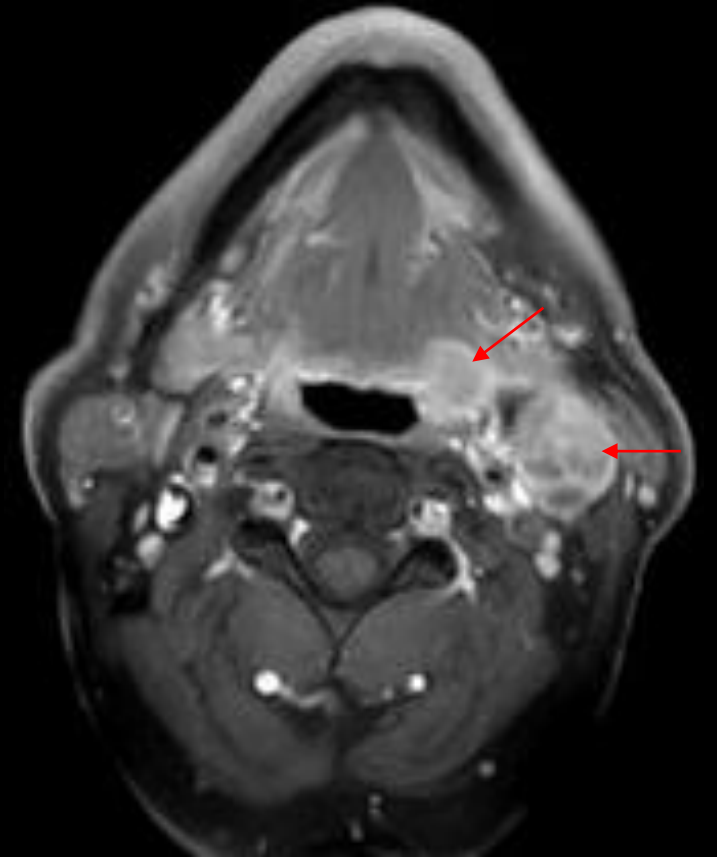
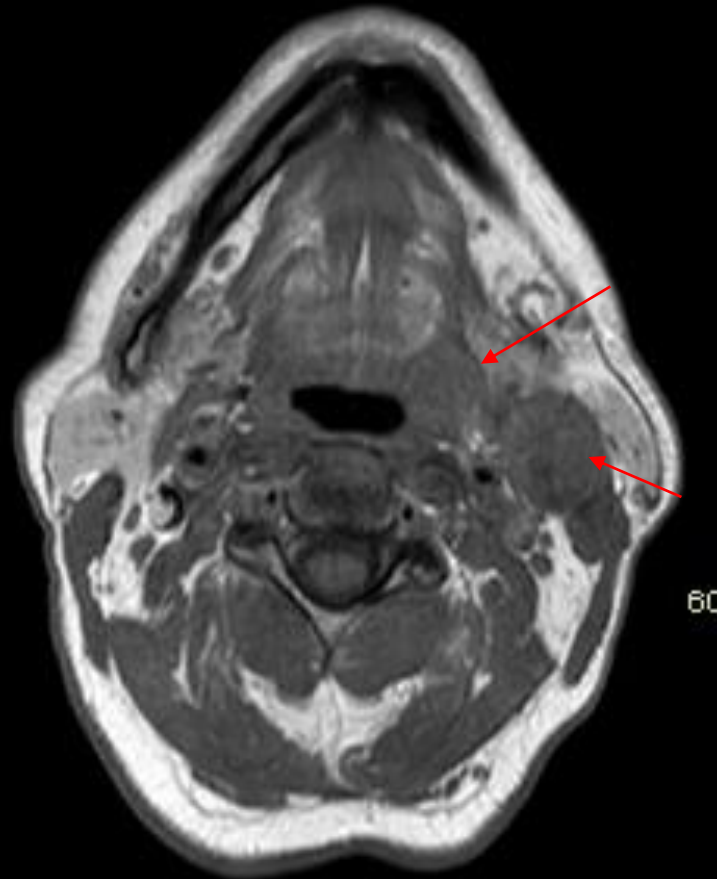
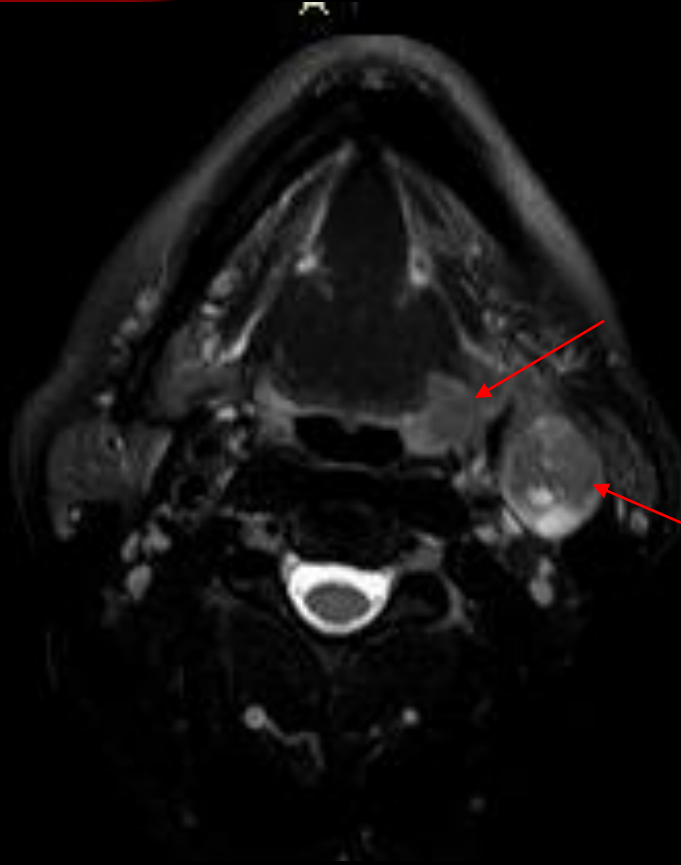


LEARNING POINT- ALWAYS CHECK THE
BONES



CASE 4- 43 YEAR OLD FEMALE; NECK
LUMP

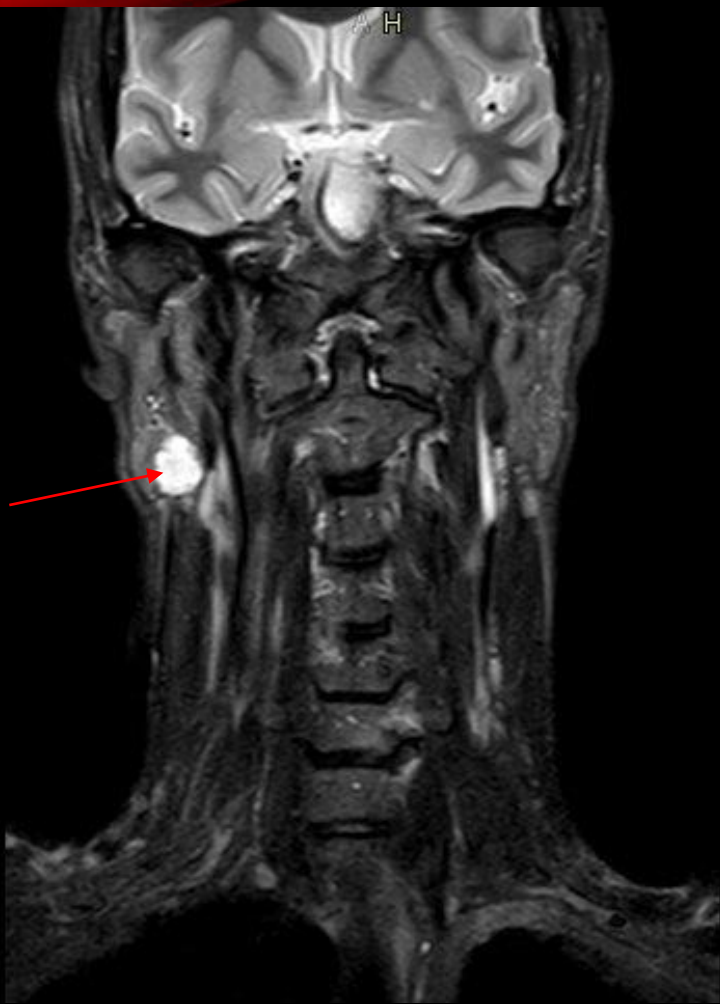




60



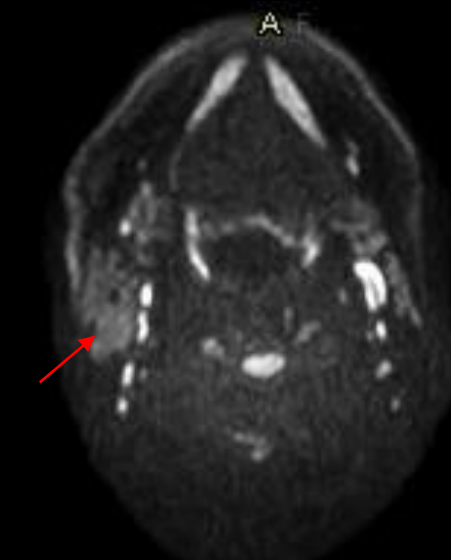
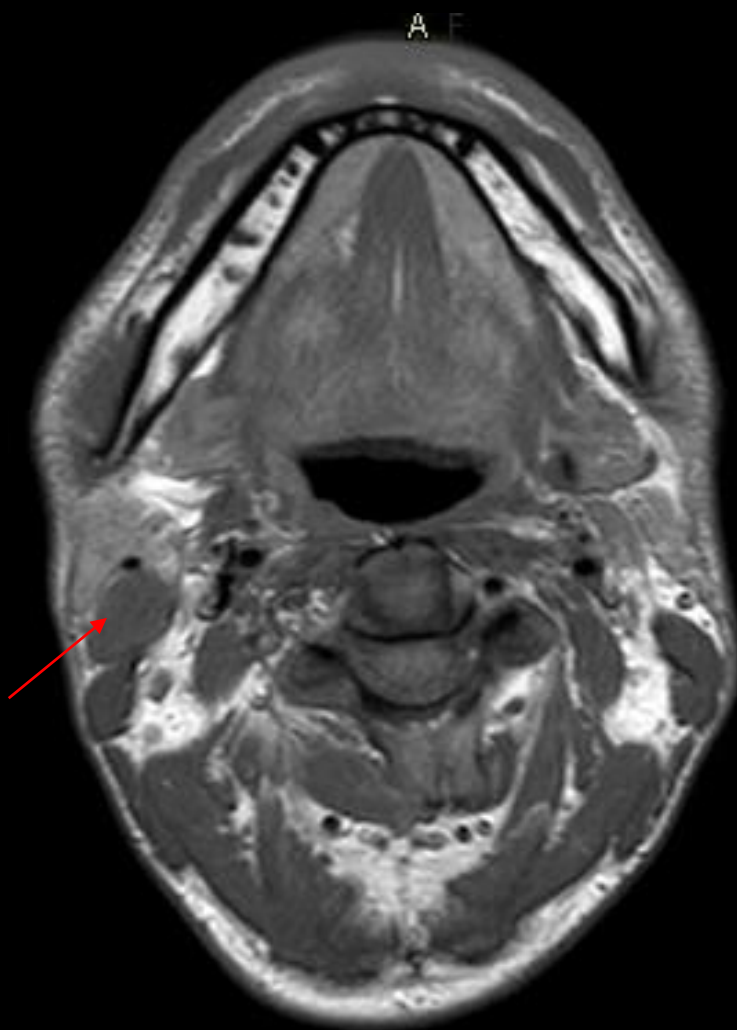
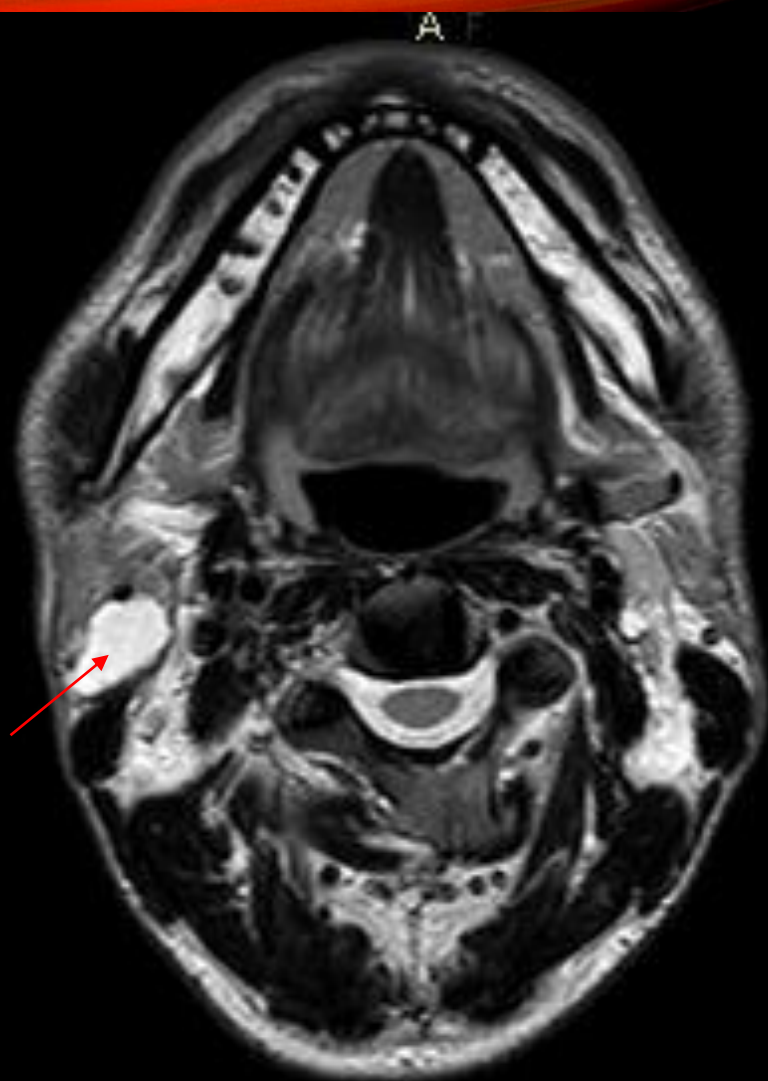
CASE 5- 82 YEAR OLD MALE; NECK LUMP
REFUSED CONTRAST



60mm

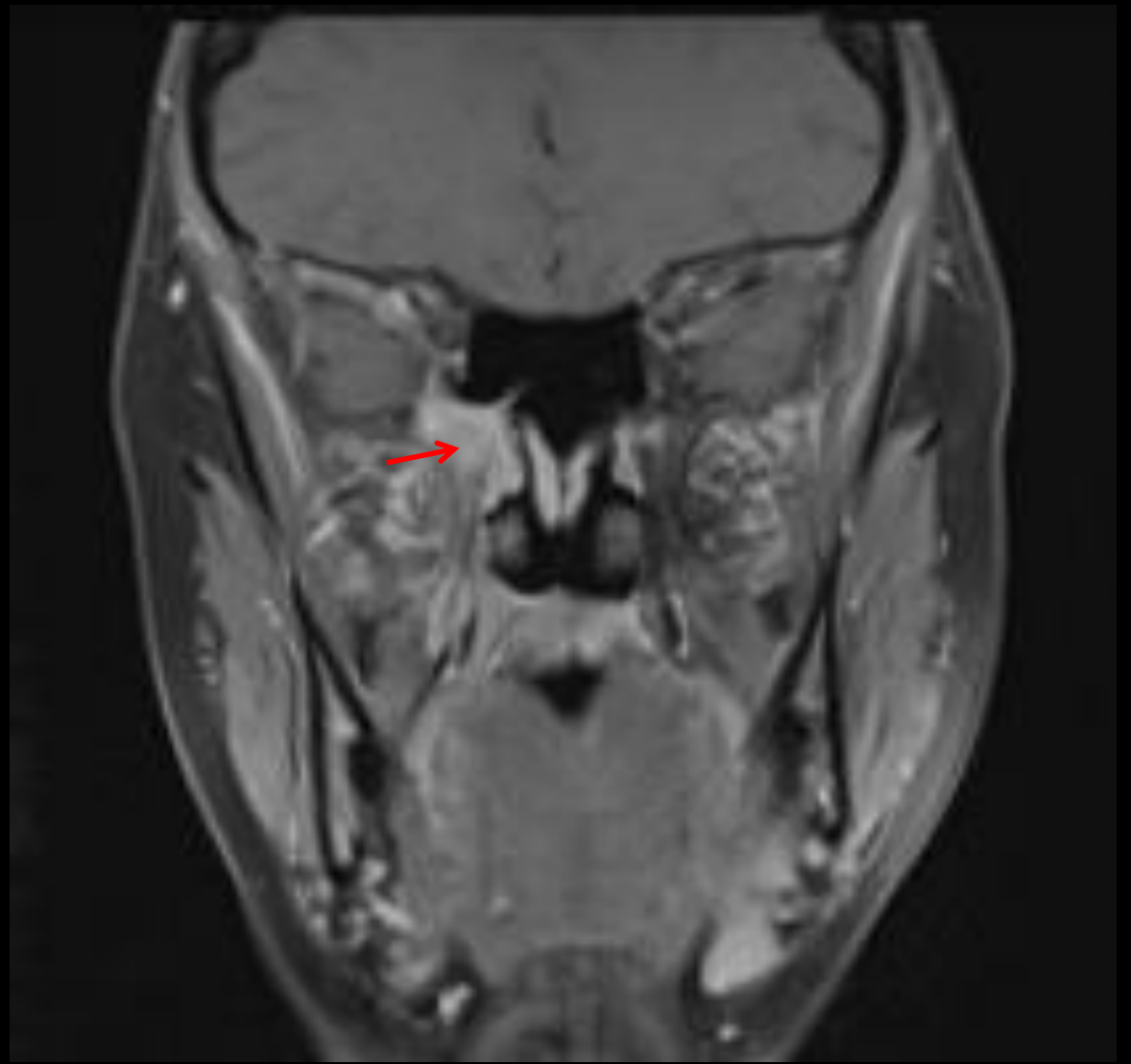
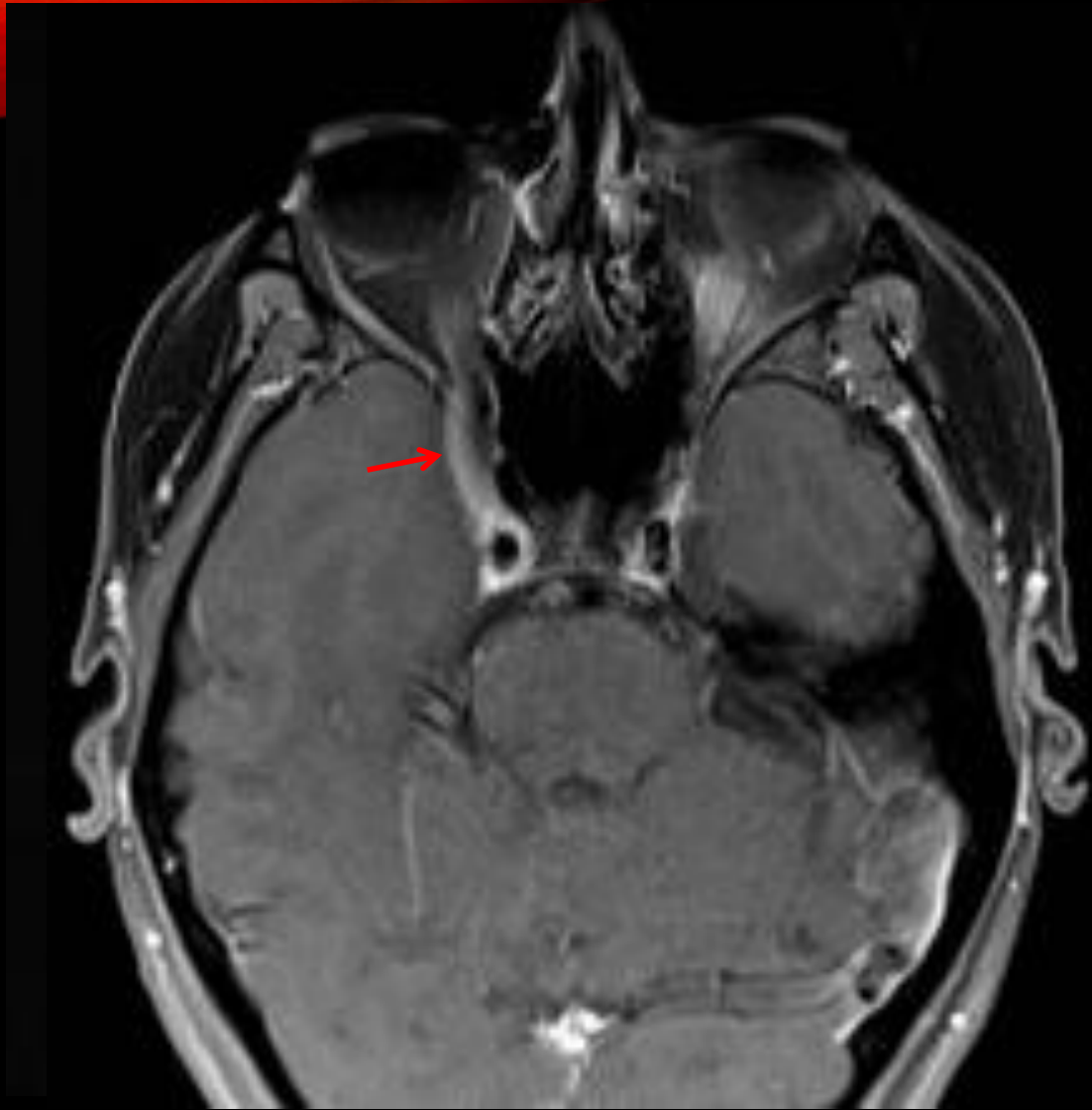


80mm





CASE 6- 53 YR OLD FEMALE
PREVIOUS LYMPHOMA; FACIAL PAIN

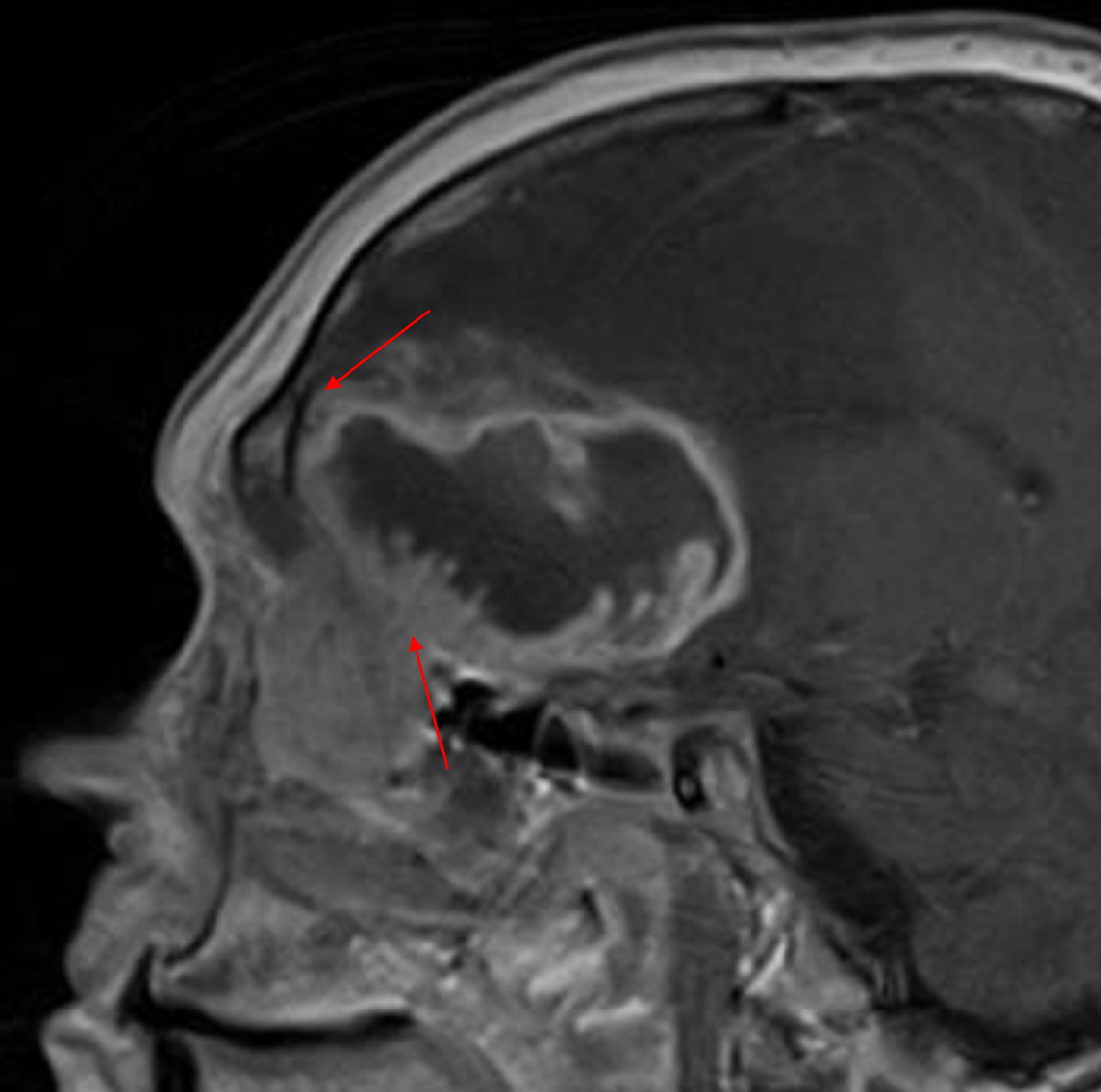
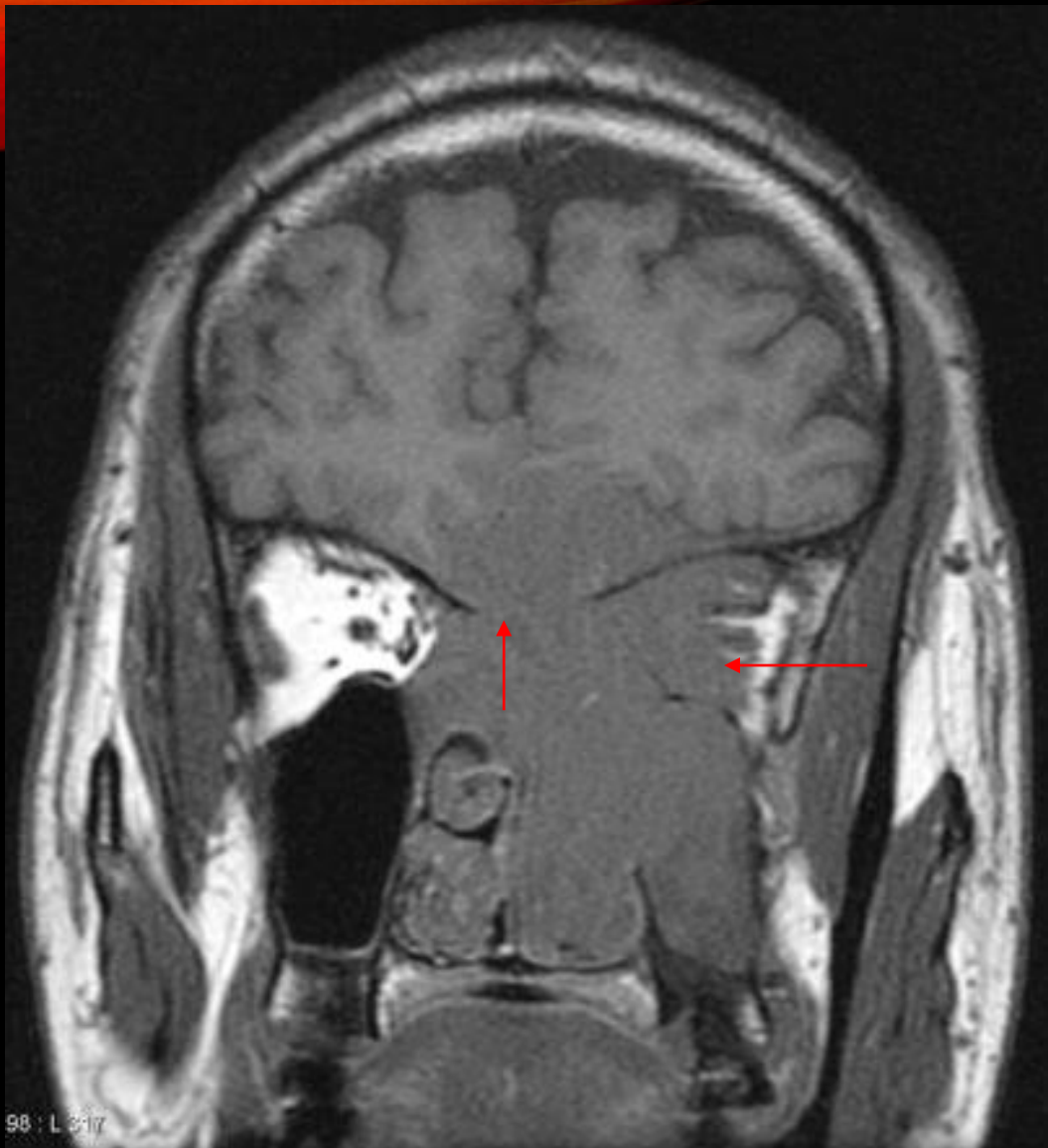




LEARNING POINT- ALWAYS CHECK
NERVES

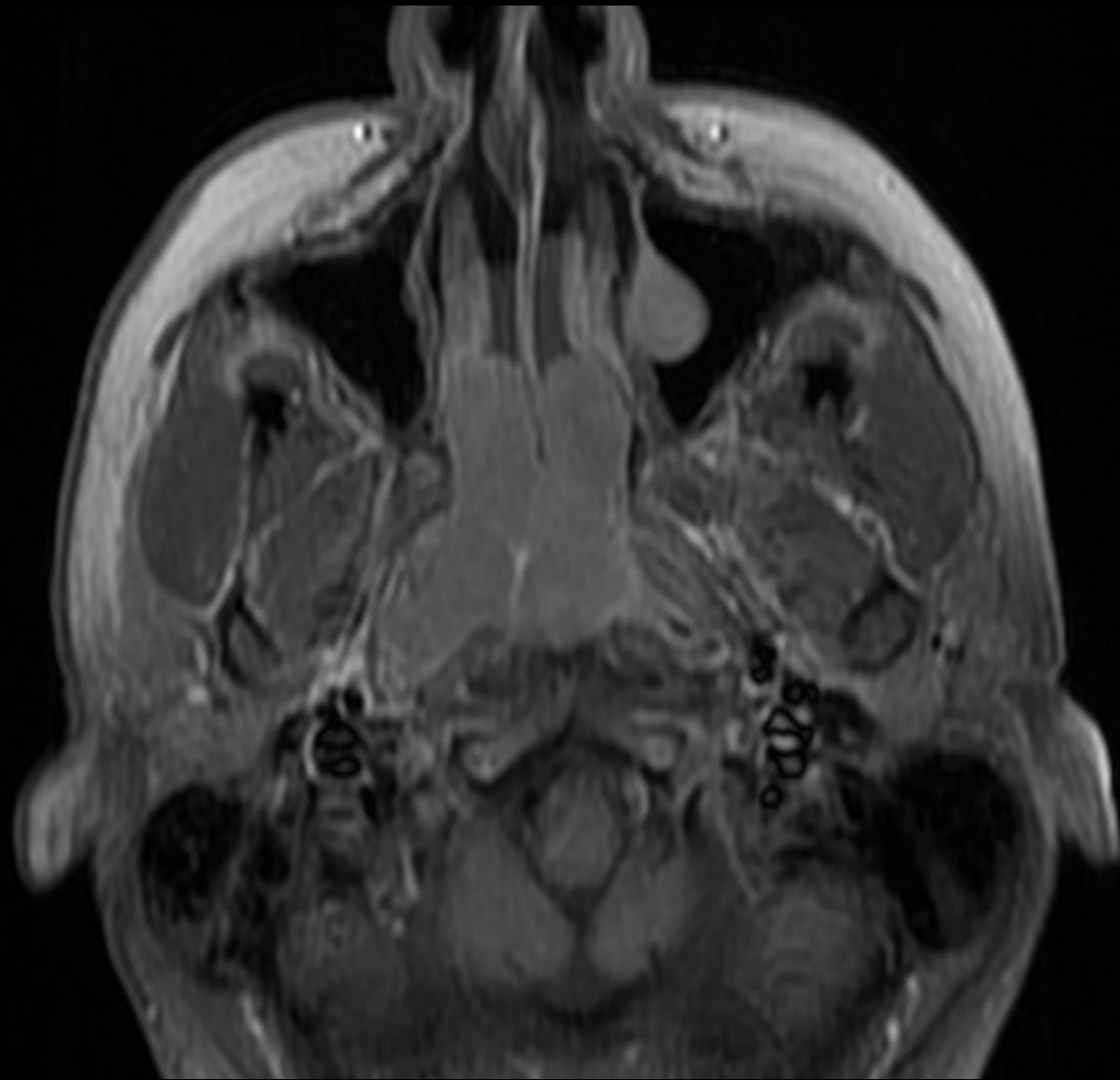


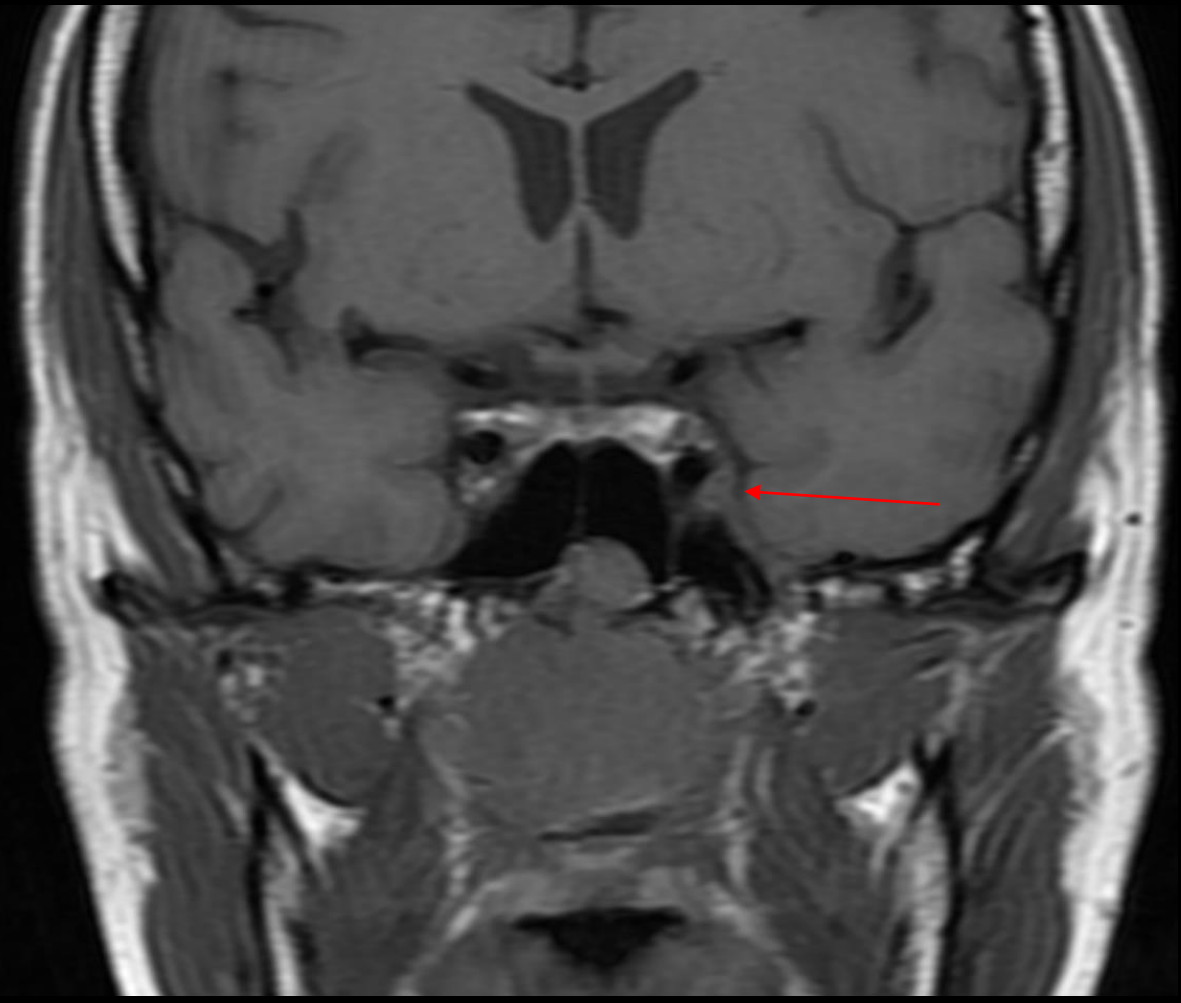
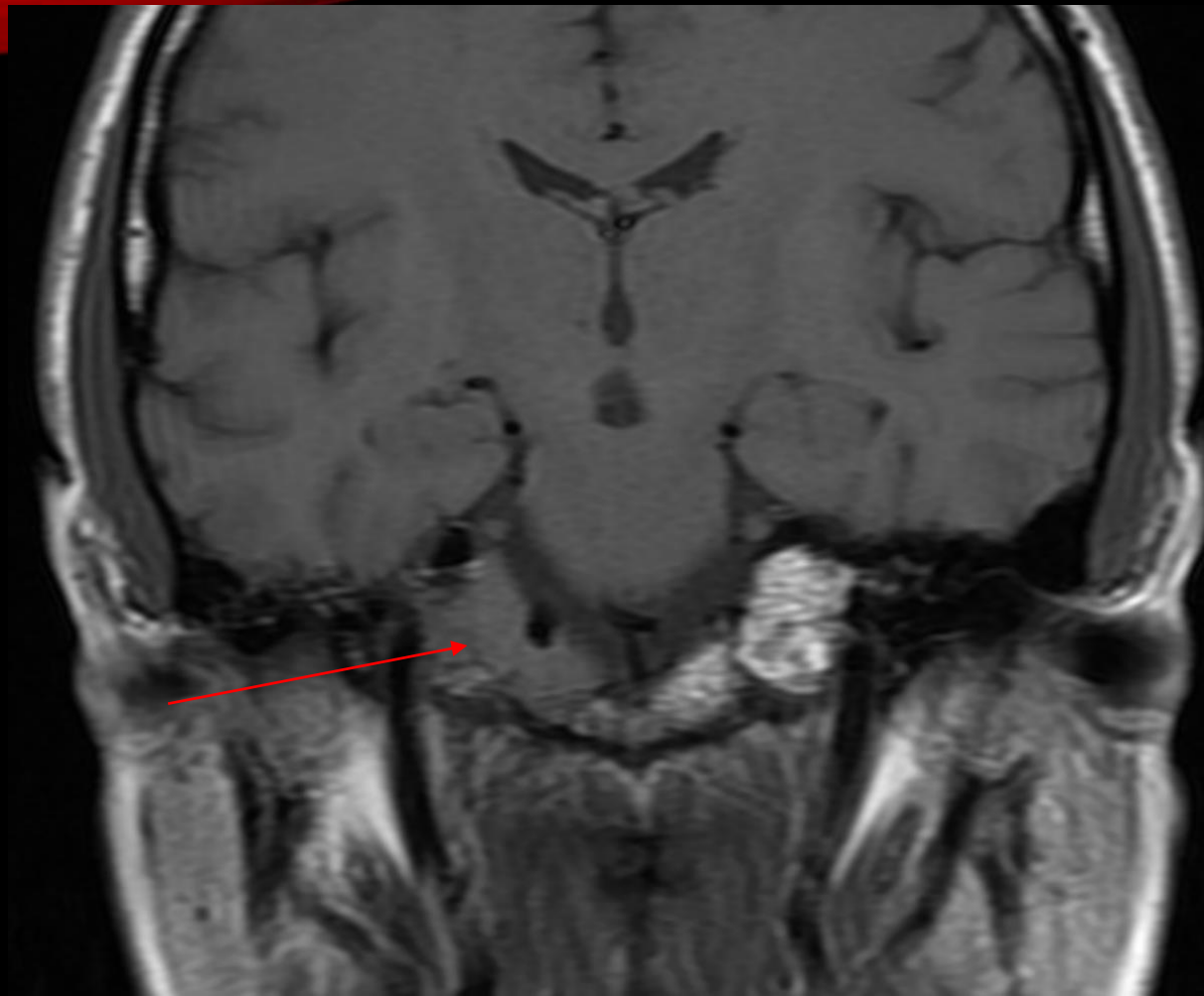
CASE 7- 64 YR OLD MALE
FACIAL PAIN AND LEFT SIDED PROPTOSIS





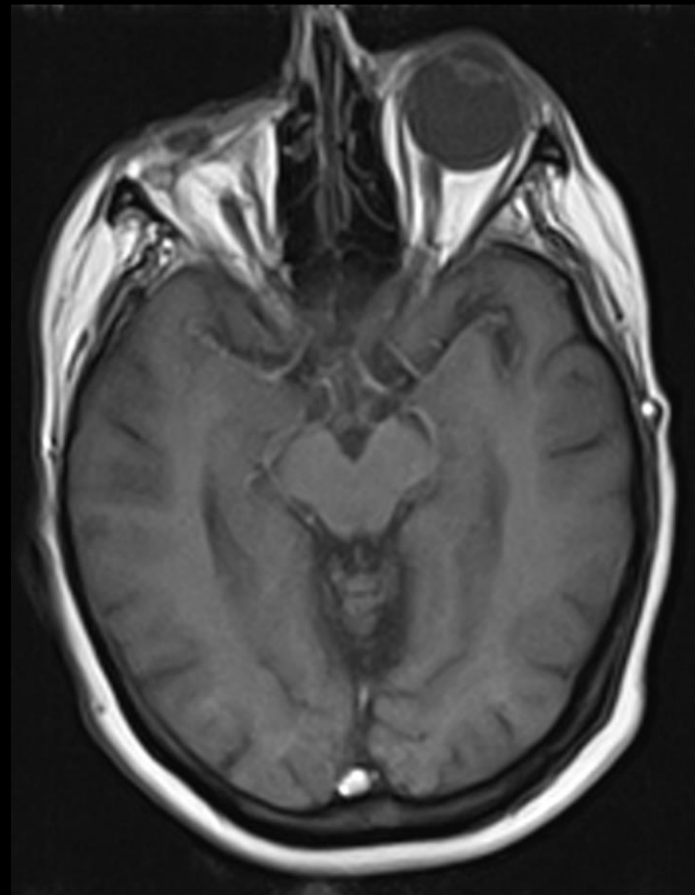
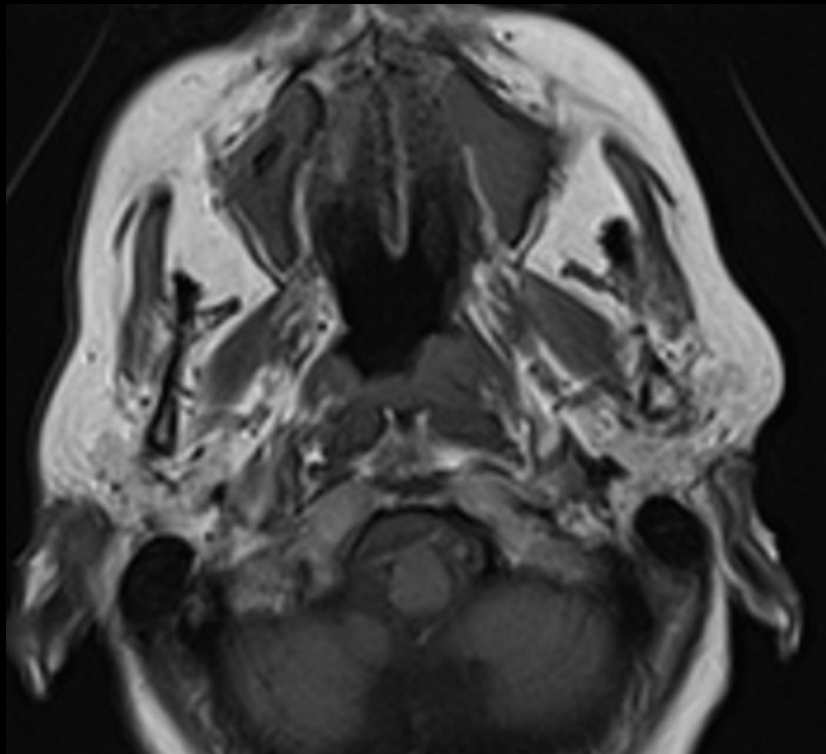
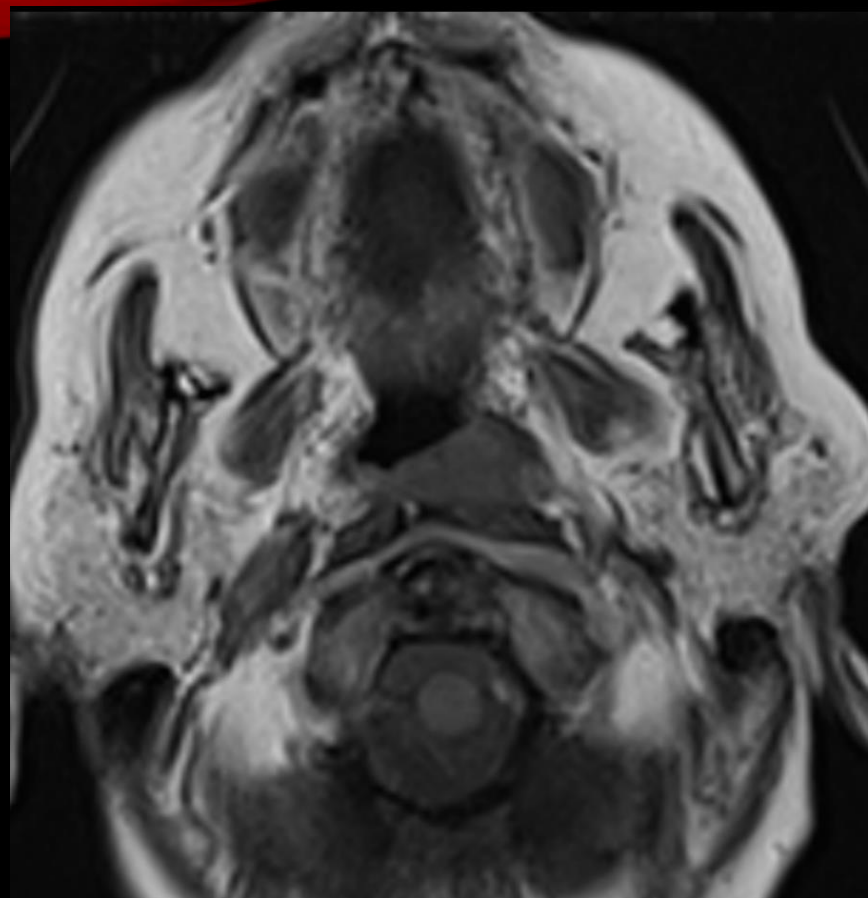
CASE 8- 45 YR OLD MALE
'BLOCKED NOSE' AND EPISTAXIS





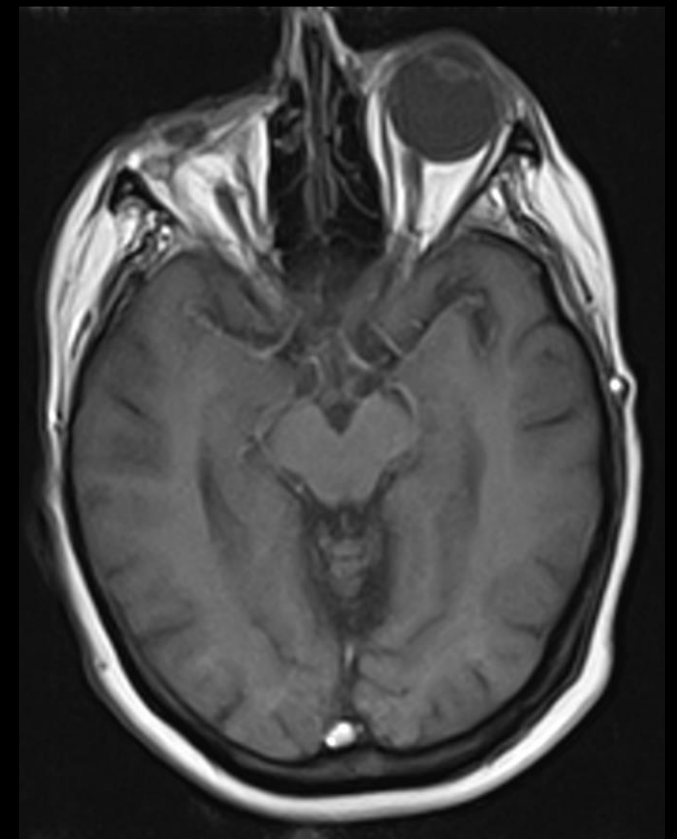
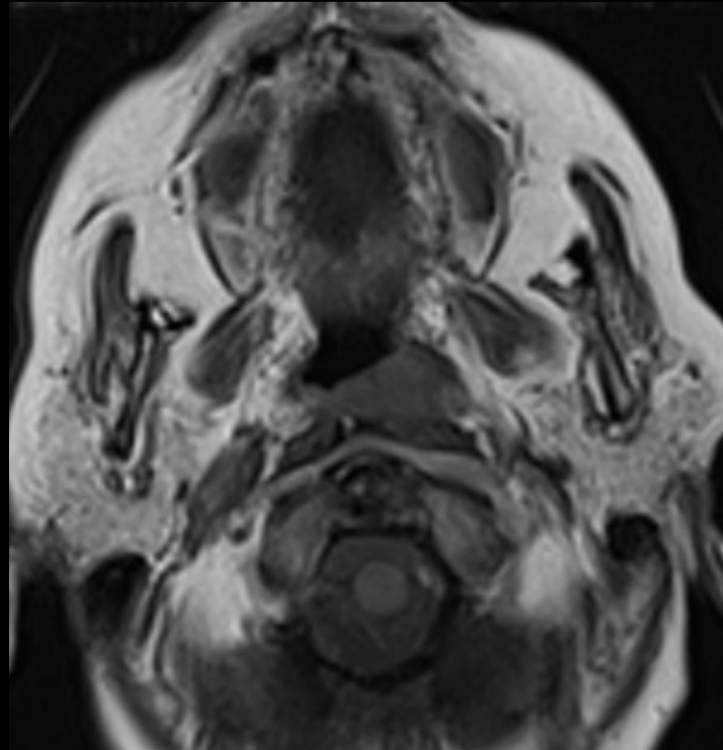


CASE 9- QUIZ
WHERE IS THE TUMOUR?



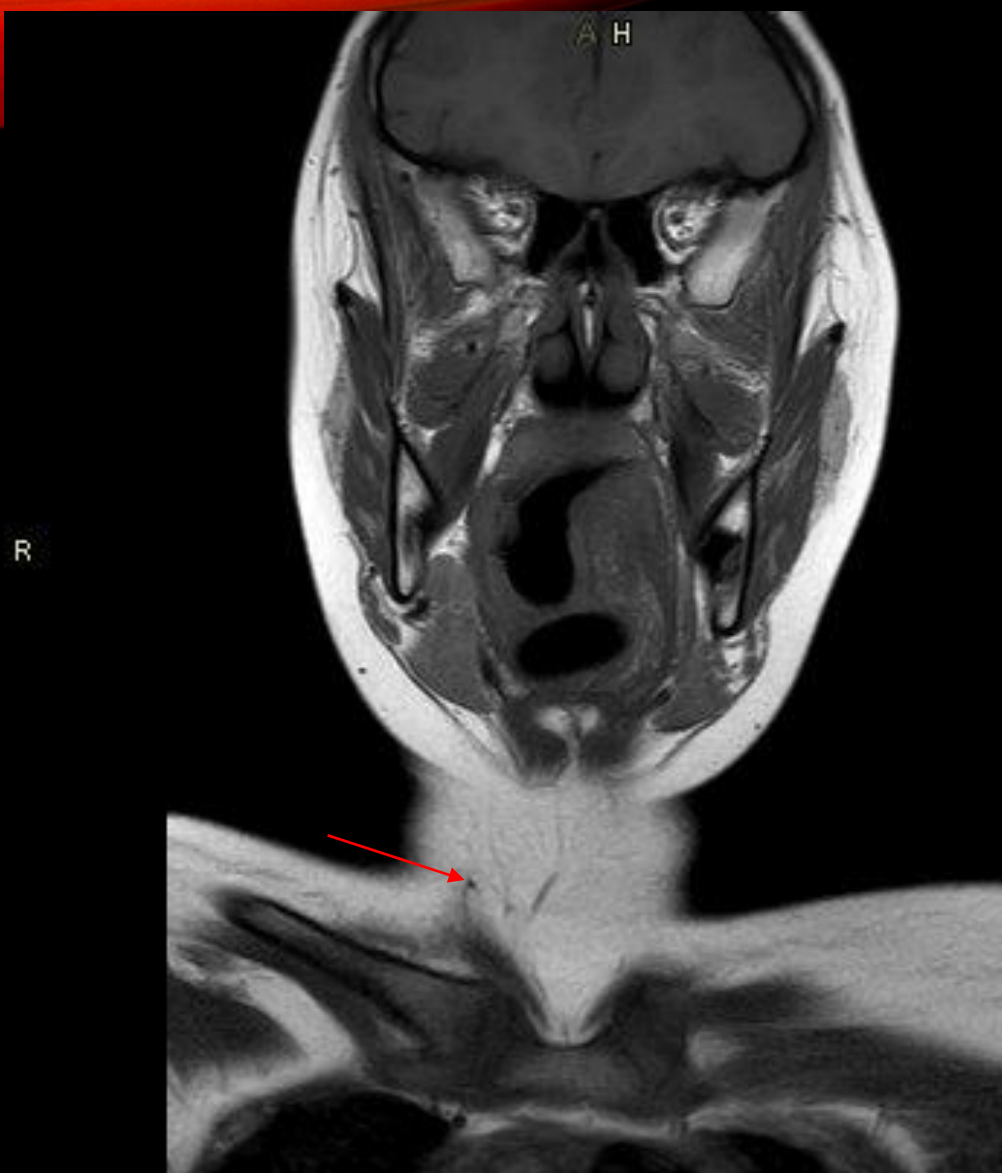
ANSWER?

- Where was the primary?
- What else did you notice?

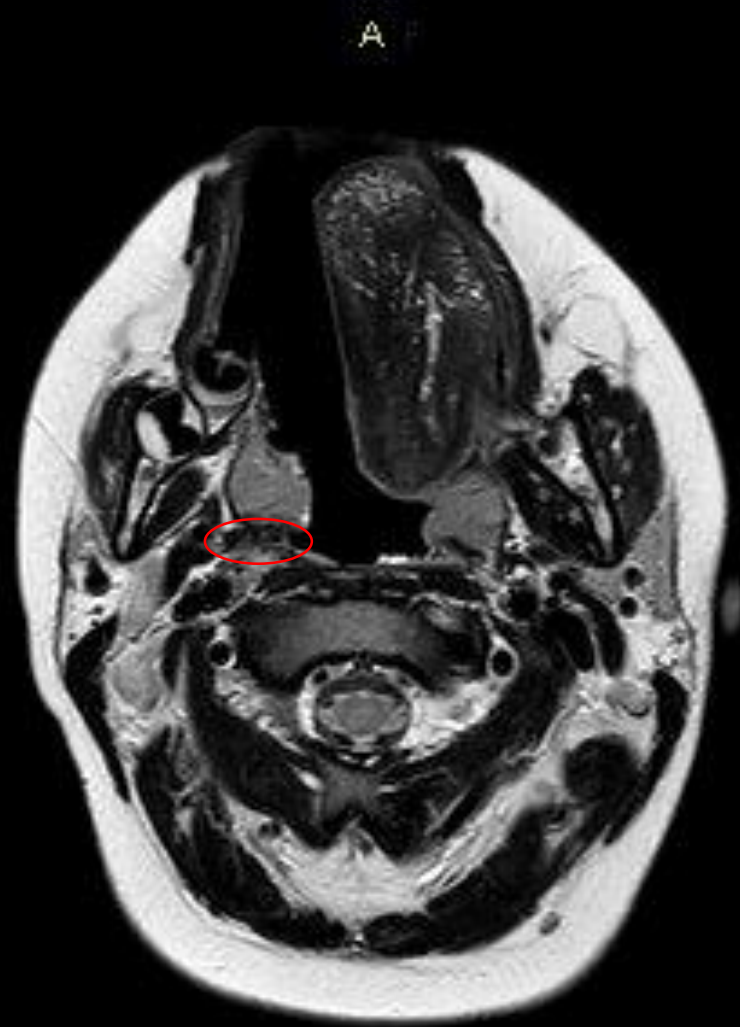




IT'S NOT JUST ABOUT CANCER!



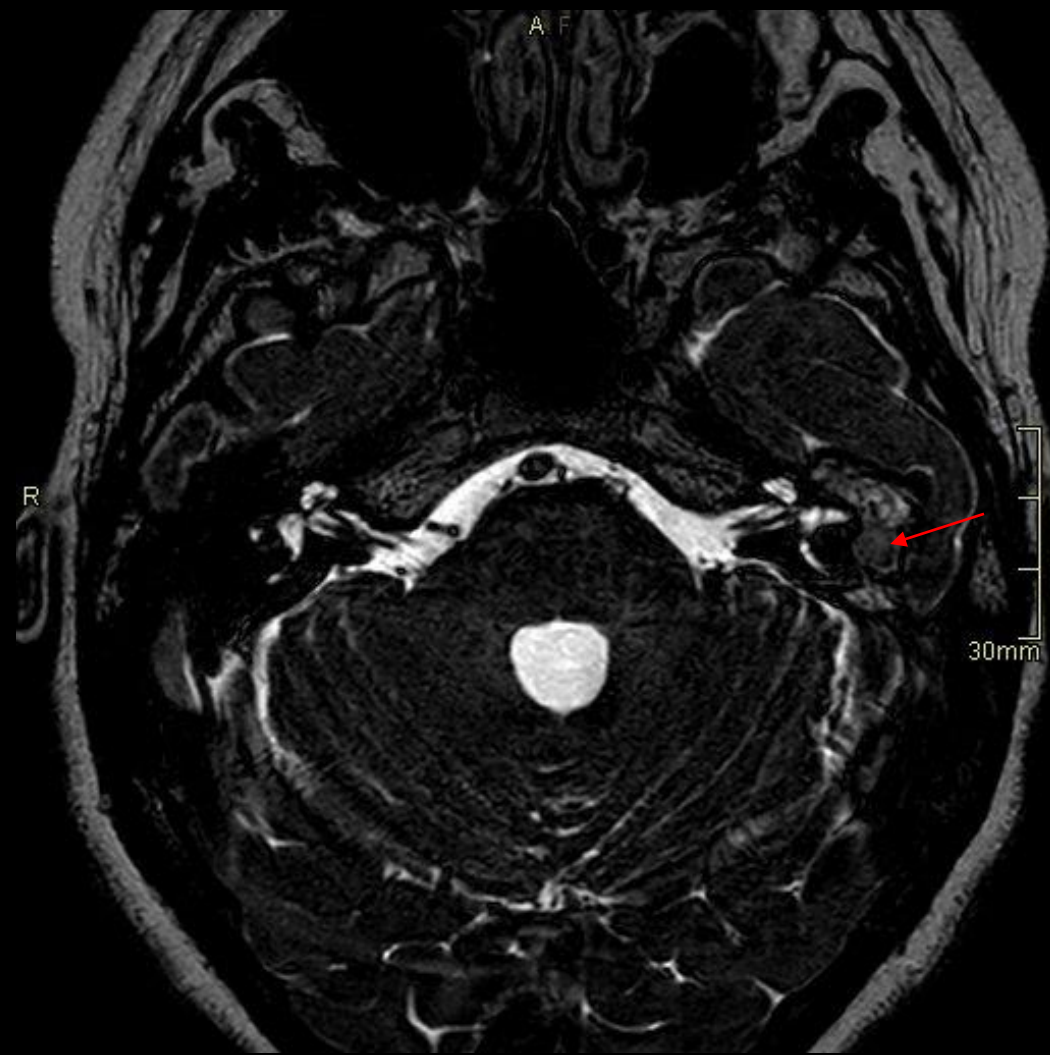
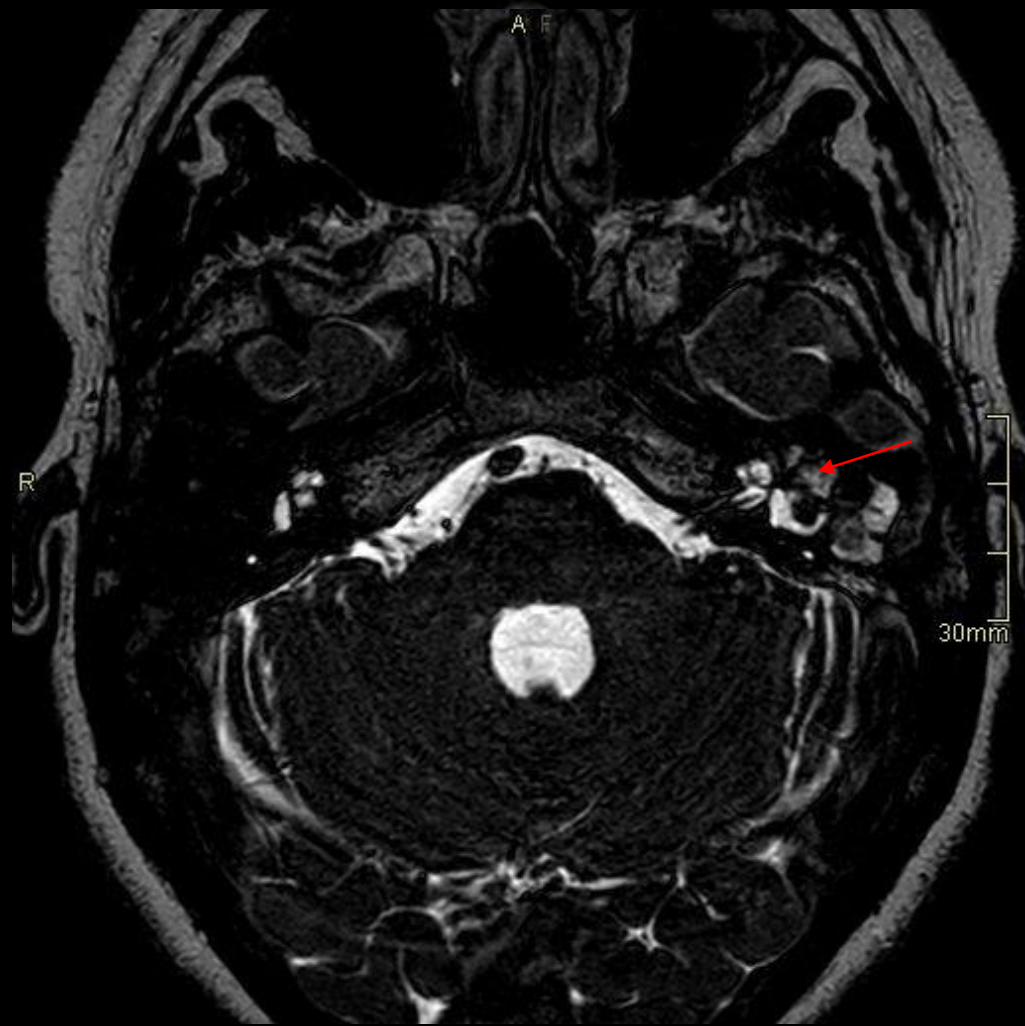
60mm

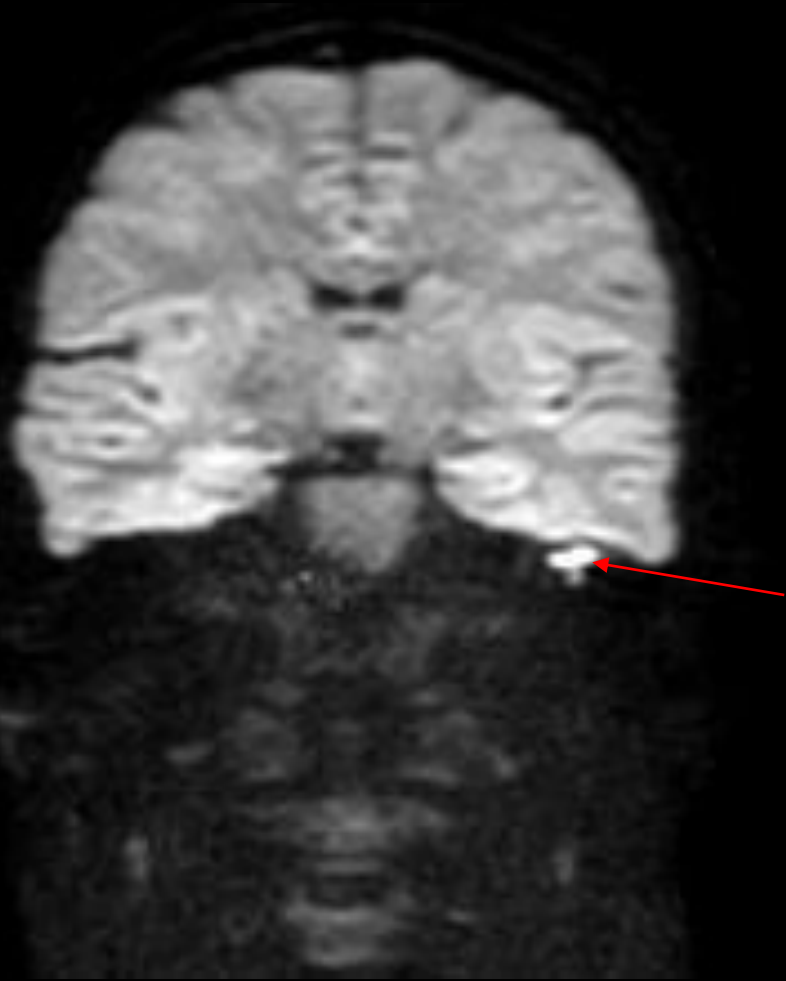


60mm

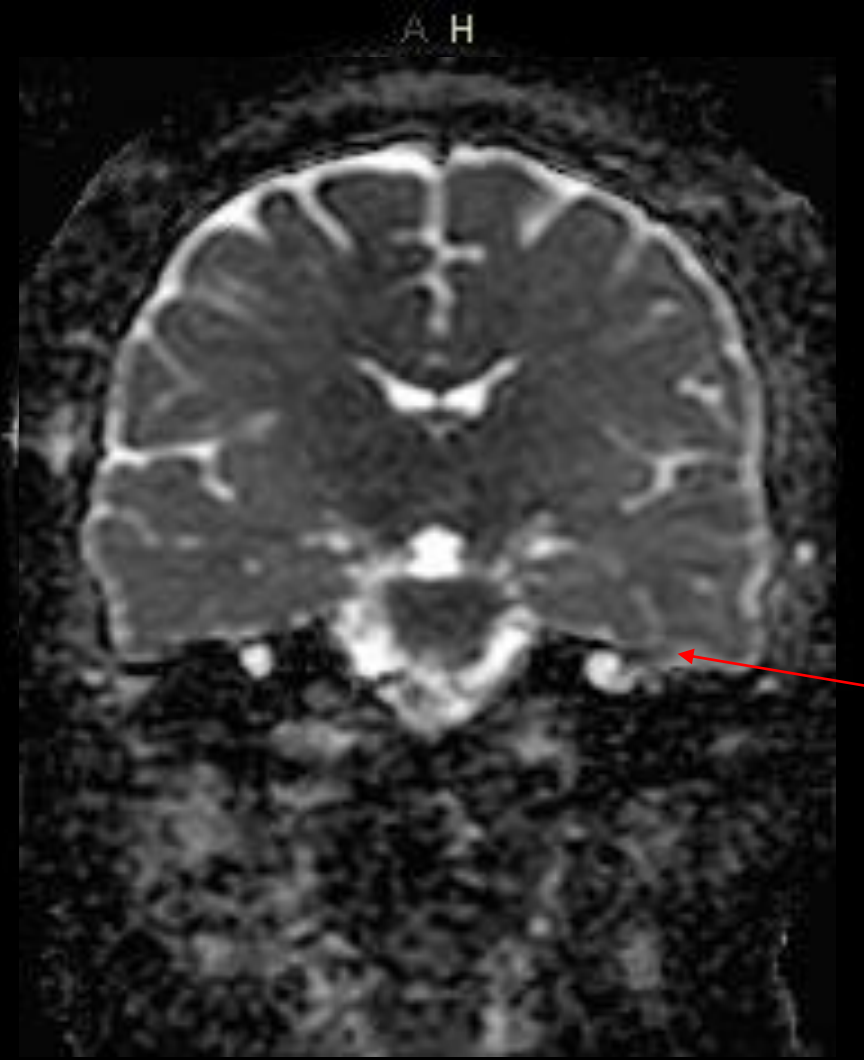
CHOLESTEATOMA IMAGING

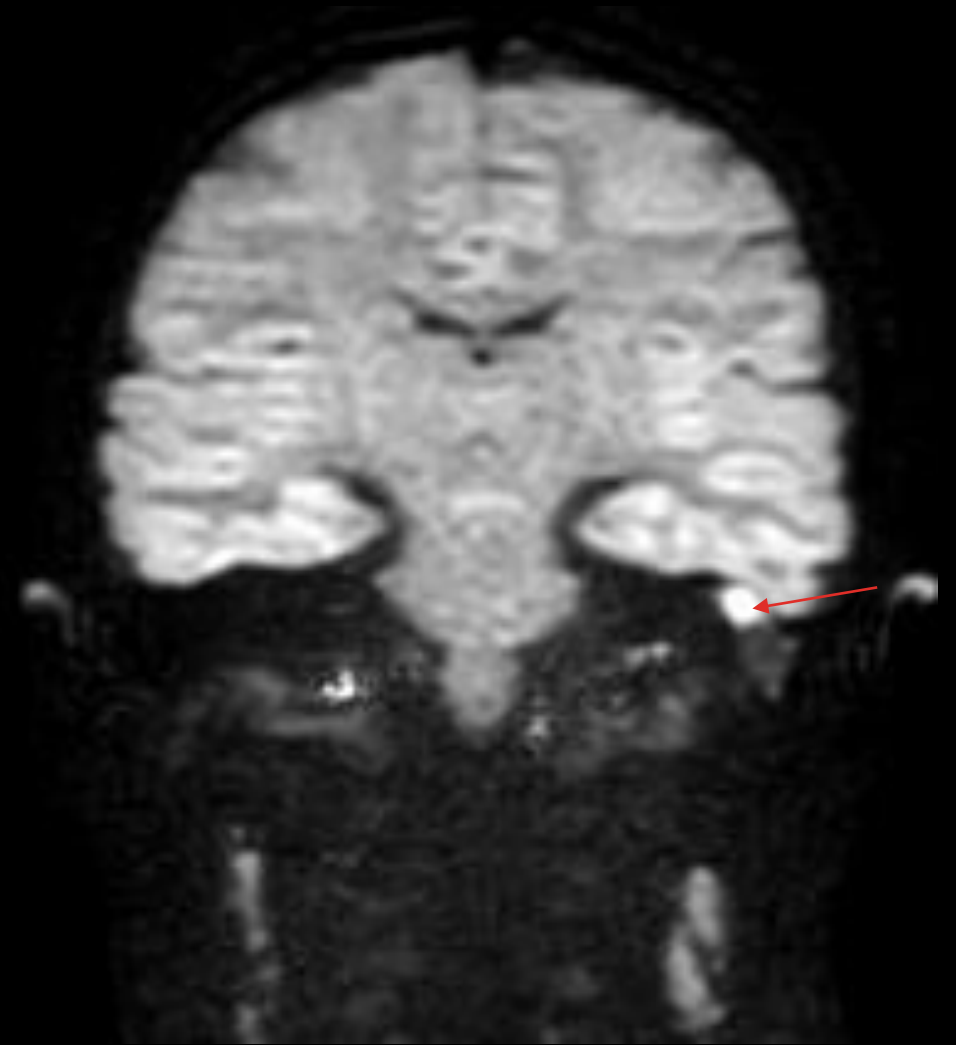
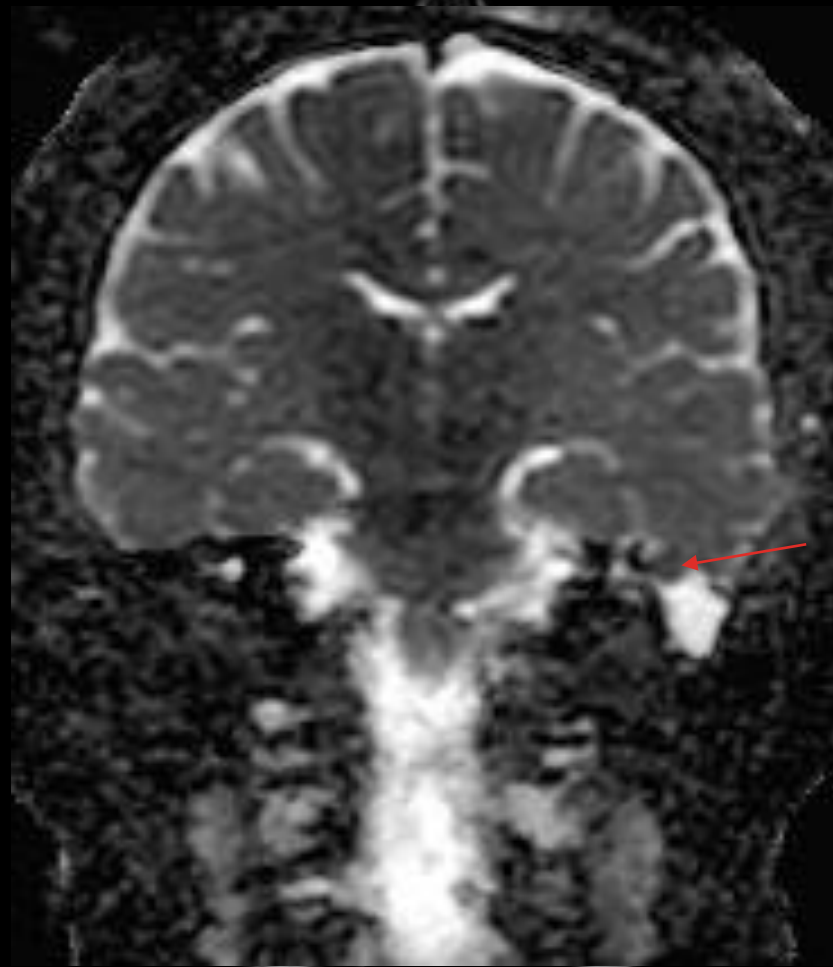
- In ?recurrence to prevent 2nd look surgery
- Protocol-
 - Ax T2W brain
 - Vol T2W IAMs
 - Cor T2W
 - Non-EPI DWI (cor)





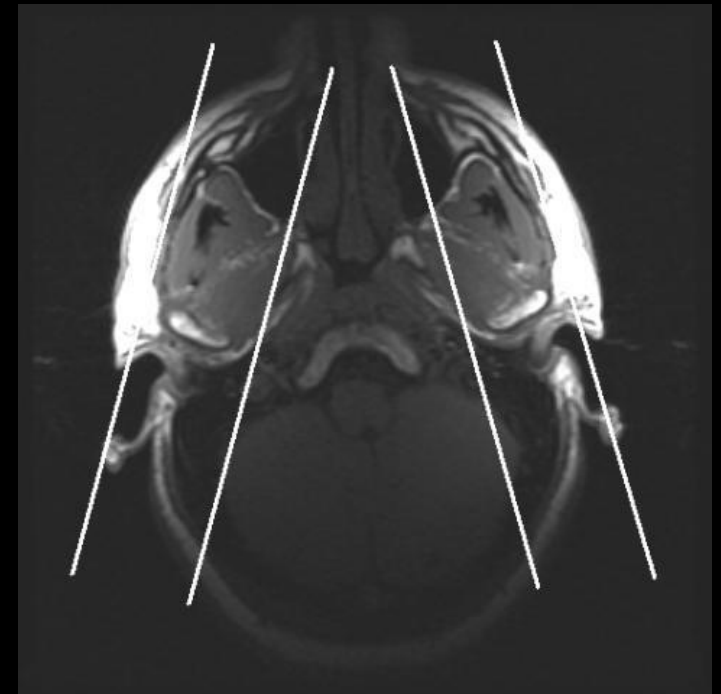
R



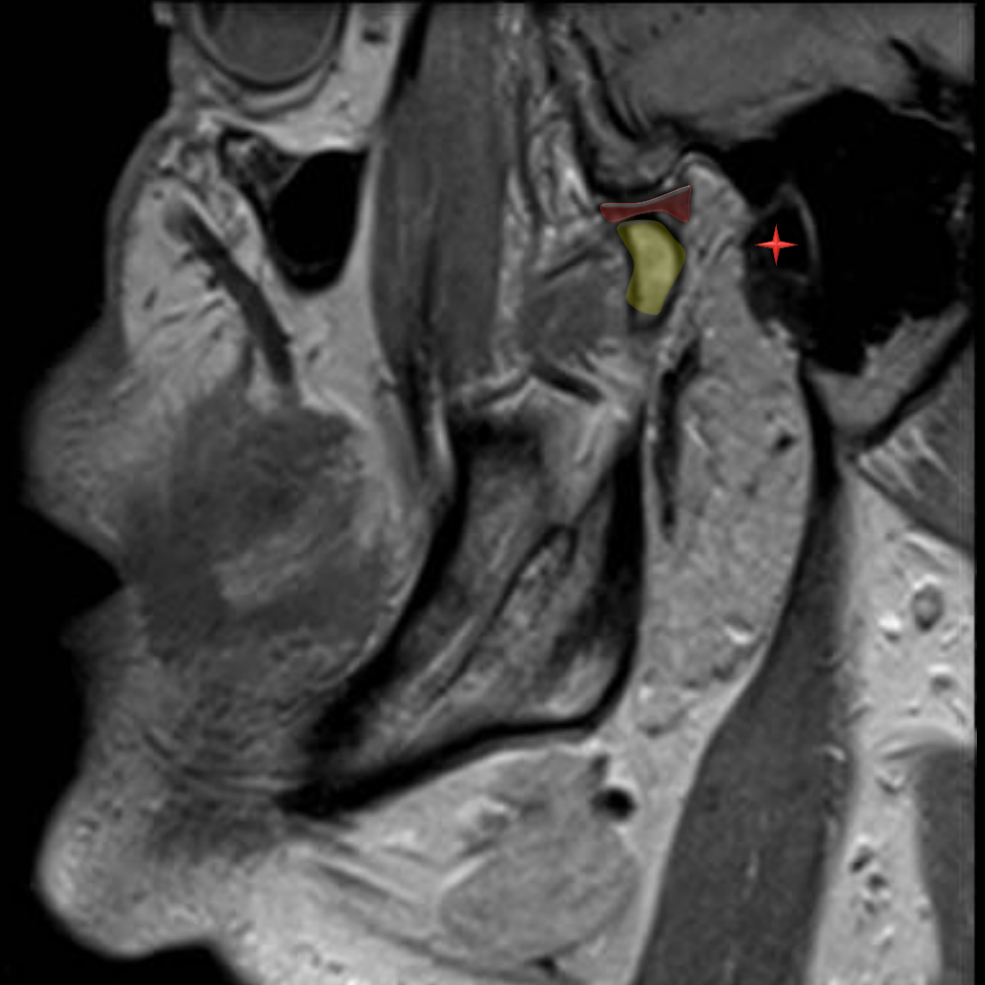
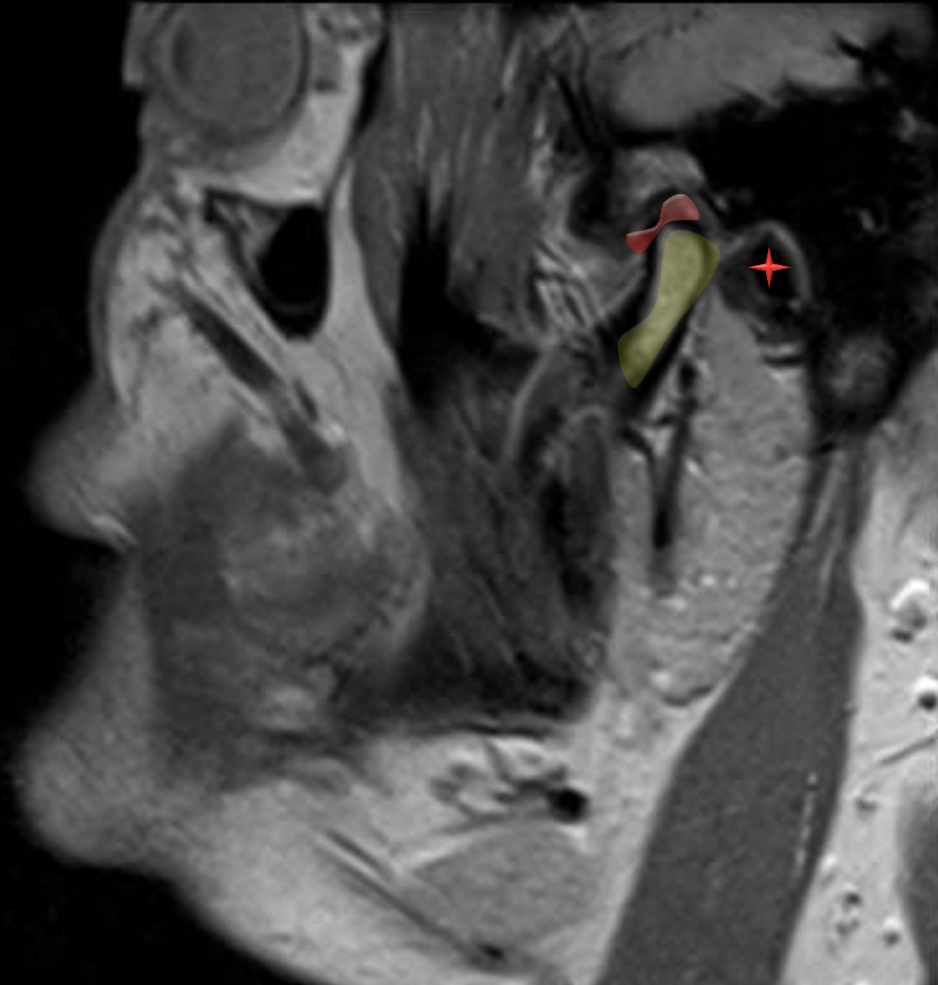


TMJ- MRI PROTOCOL

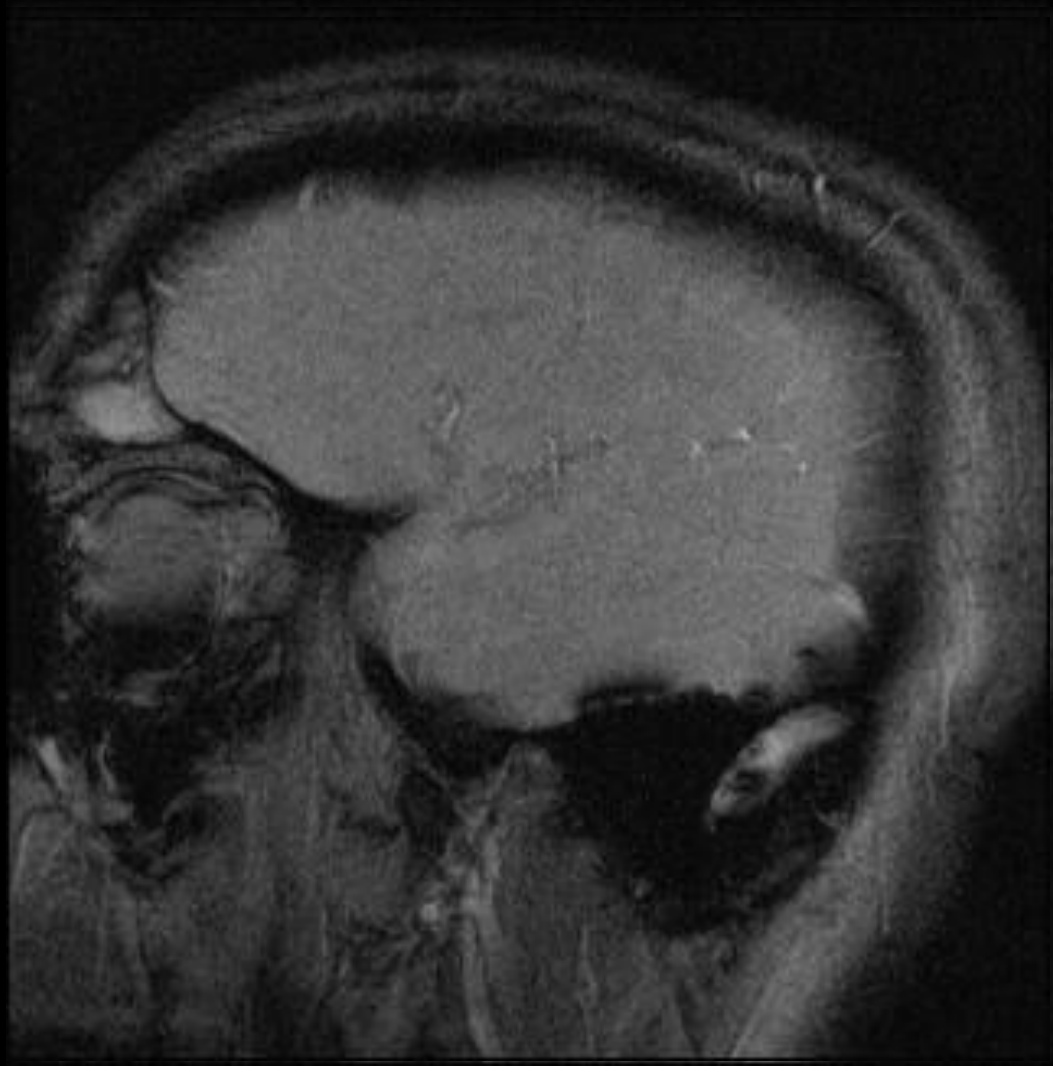
- Parasagittal PD/ dual echo- open and closed mouth
- Coronal (+ axial) T1W /T2W
- Dynamic imaging- gradient echo
- +/- contrast
- Head coil vs surface coils



NORMAL TMJ



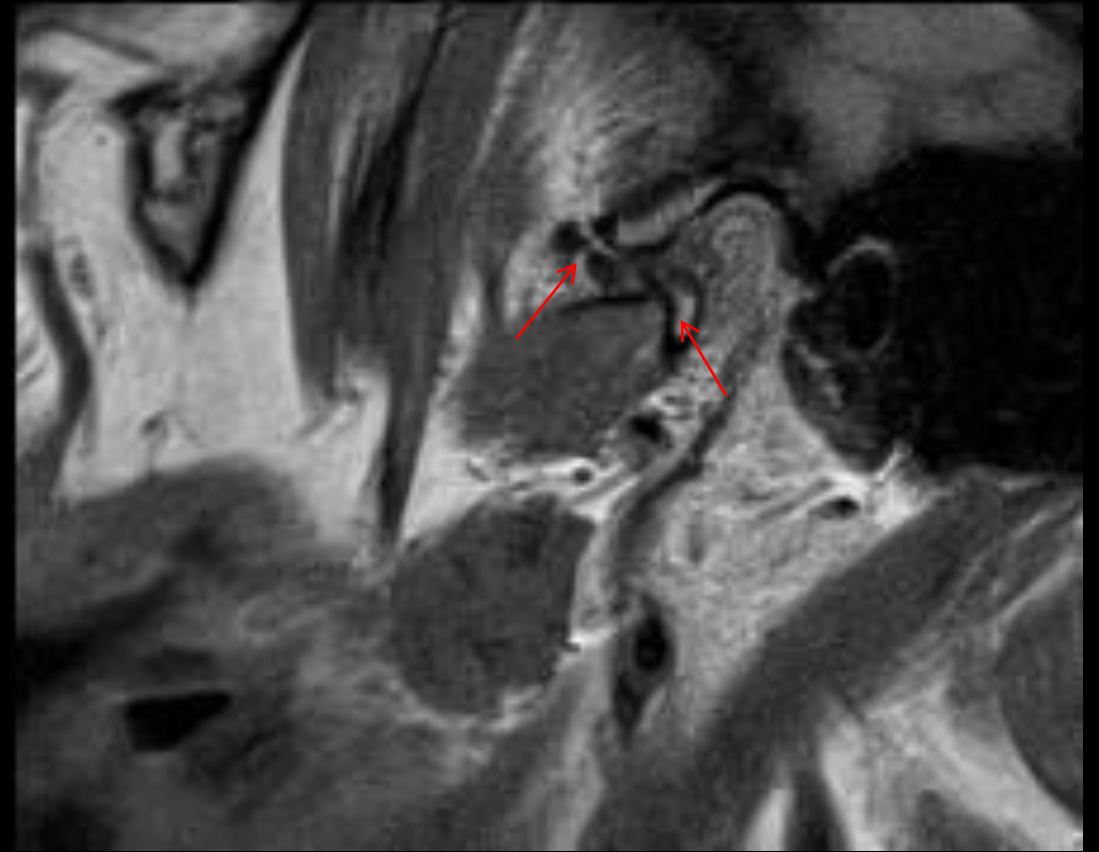
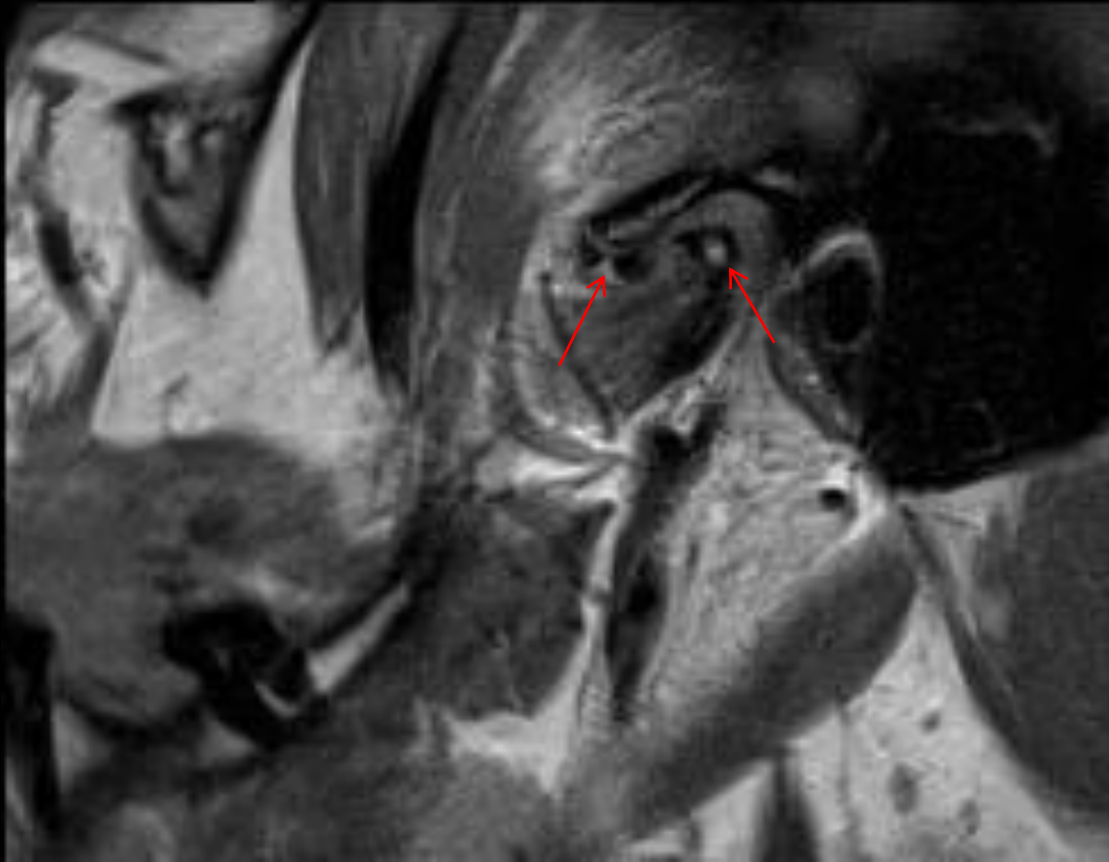
DYNAMIC MRI



ANTERIOR SUBLUXATION AND REDUCTION



IRREDUCIBLE DISC



SUMMARY

- Head and Neck is an EXTREMELY interesting area of imaging- just scratched the surface
- MRI is great for staging, problem solving and diagnosing
- Optimise your sequences- we all get used to what we know
- Ask yourself 'what are we trying to see?' when scanning
- If you wouldn't like to report the images yourselves, nor will anyone else

- THANK YOU!

