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!
• 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!)
• 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!
• 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
LEARNING POINT- ALWAYS CHECK THE BONES
CASE 4- 43 YEAR OLD FEMALE; NECK LUMP
CASE 5- 82 YEAR OLD MALE; NECK LUMP REFUSED CONTRAST
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?
• Where was the primary?

• What else did you notice?
IT’S NOT JUST ABOUT CANCER!
CHOLESTEATOMA IMAGING

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