

Benign Mixed Tumor

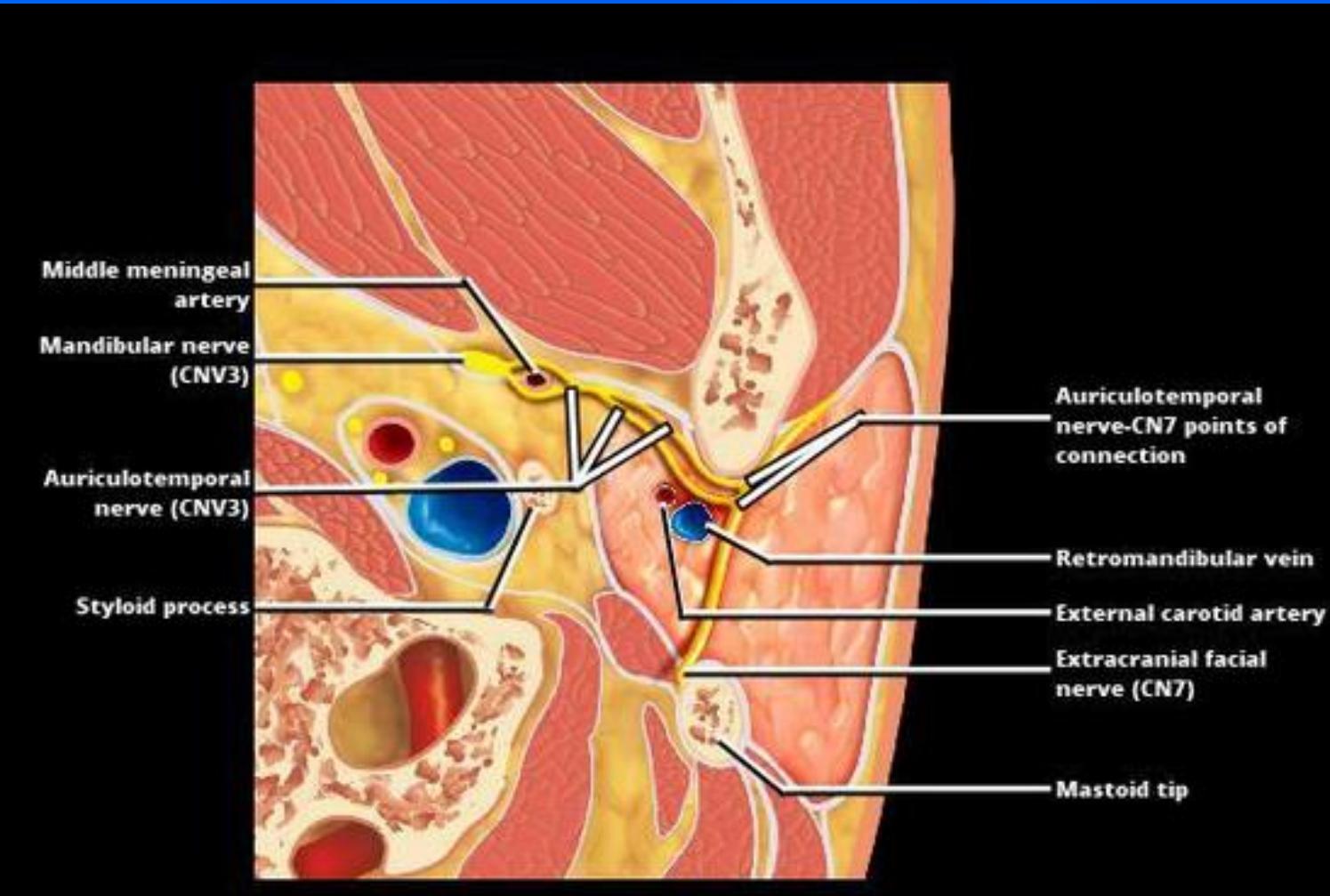
- Variable; may be > 10 cm if in deep lobe or neglected.
- Large BMT (> 2 cm): Lobulated mass with heterogeneous enhancement.
- Most common in whites, rare in blacks.
- Multifocal BMT rare ($< 1\%$)
 - Multiple lesions not suggestive of primary BMT; may be seen in recurrent BMT
- Recurrent tumor typically from incomplete resection or cellular "spillage" at surgery
Recurrent BMT multifocal ("cluster of grapes")
- Recurrent tumor difficult to treat
 - Radiation treatment of uncertain effectiveness

Imaging

- Contrast-enhanced CT or MR adequate to answer most imaging questions
 - MR best if specific signs (\uparrow T2 signal, \uparrow ADC) present
- CT findings
 - Smoothly marginated, homogeneously enhancing, ovoid mass
 - **Pear-shaped** when in deep lobe & extending through stylomandibular notch
 - Dystrophic calcification may be present
- MR findings
 - \uparrow T1 signal in hemorrhagic lesions
 - **Very high T2 signal specific for benign mixed tumor (BMT)**
 - ADC values higher than other parotid tumors

Image Interpretation Pearls

- Define facial nerve plane & identify deep parotid lobe component as this may be missed clinically
- Infiltrative margins, multicentricity, or hypointense T2 signal suggests malignancy
- Must distinguish deep lobe parotid BMT from true parapharyngeal BMT
 - Look for fat plane between parotid tissue & BMT



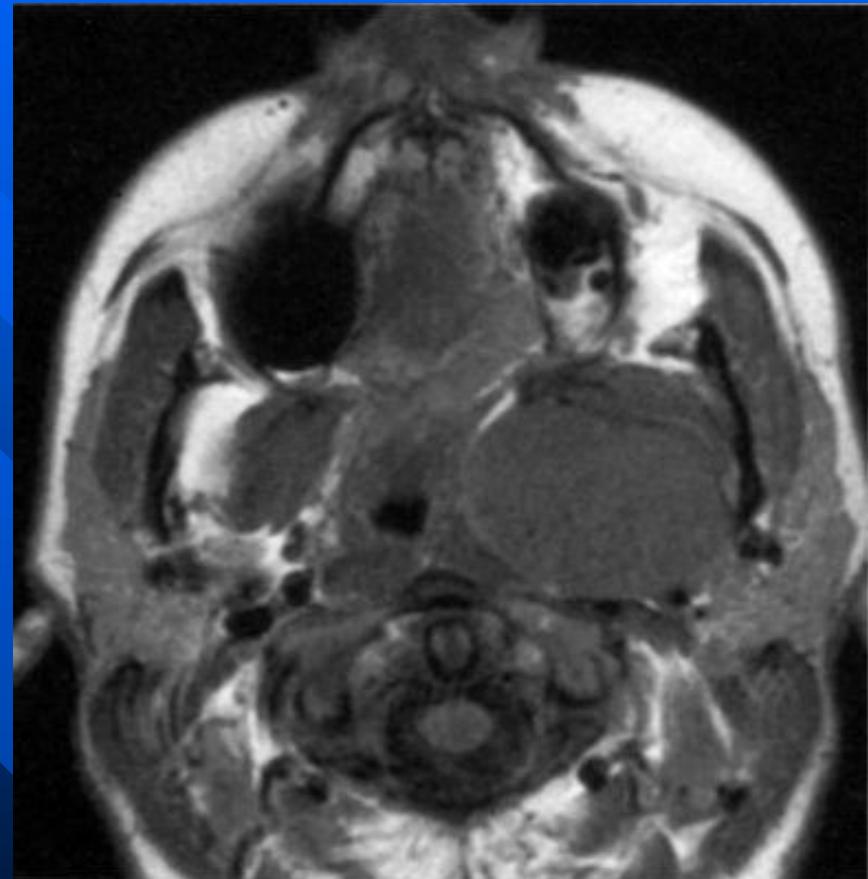
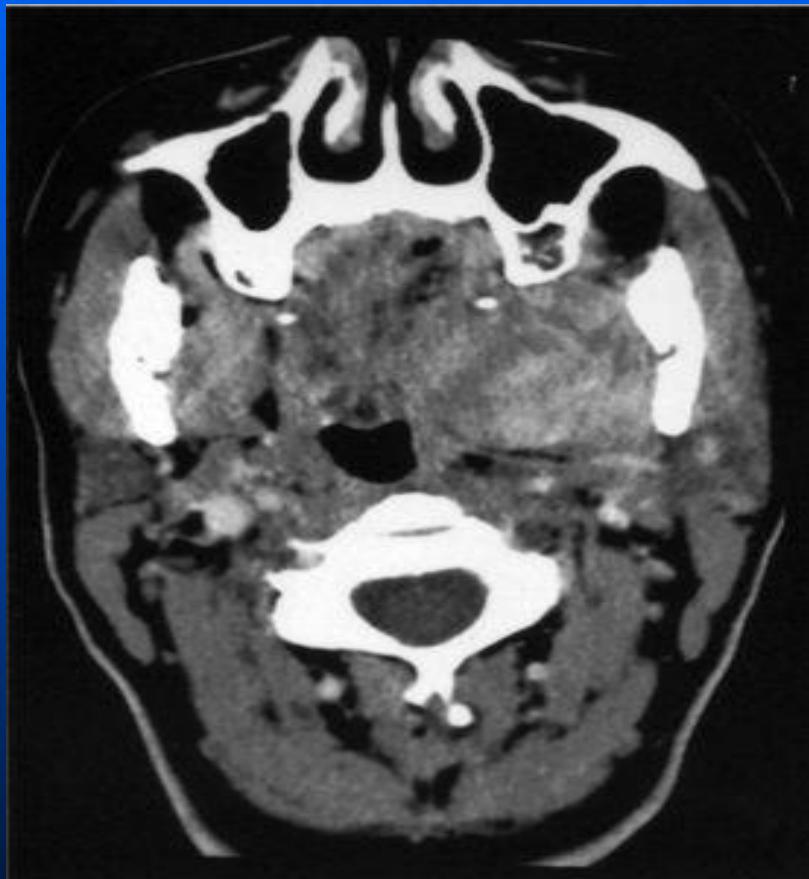
Chance it is not a PA

- Margins: irregular, frayed, infiltrating
- Signal-dark T2
- Perineural spread of tumor
- Multiplicity or Bilateralism

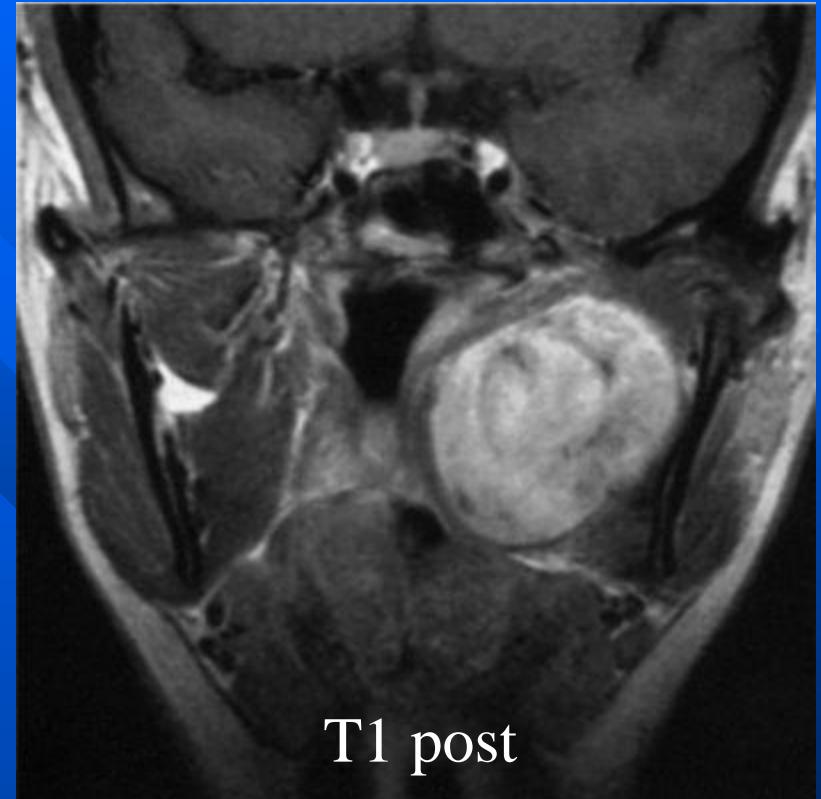
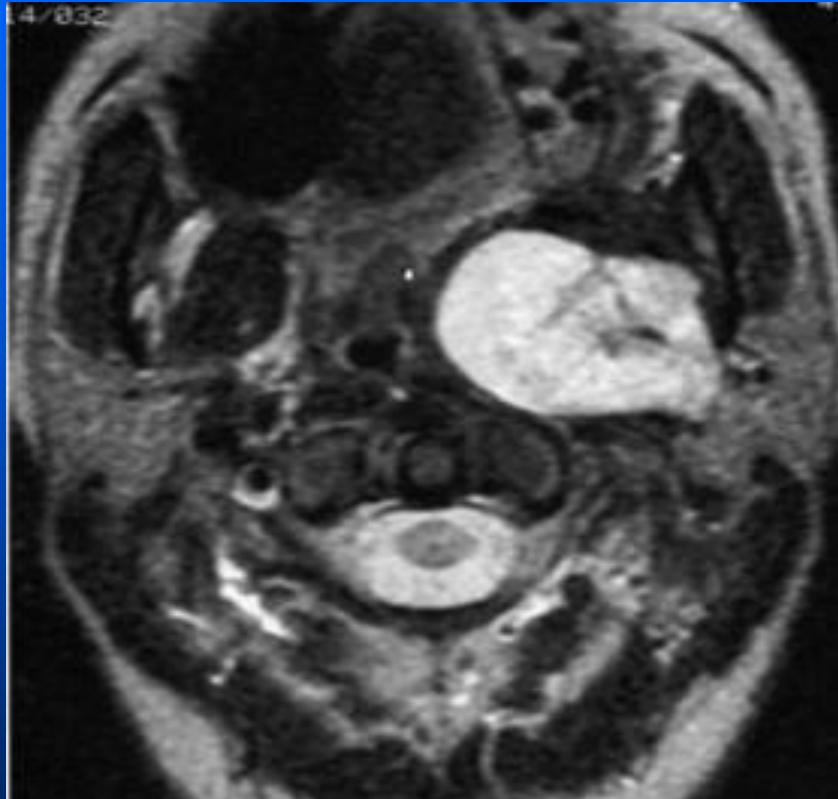
Rule of 80's

- 80% of parotid tumors are benign
- 80% of parotid tumors are pleomorphic adenomas
- 80% of salivary gland pleomorphic adenomas occur in parotid
- 80% of parotid pleomorphic adenomas occur in the superficial lobe
- 80% of untreated pleomorphic adenomas remain benign

Parotid Pleomorphic Adenoma



Parotid Pleomorphic Adenoma

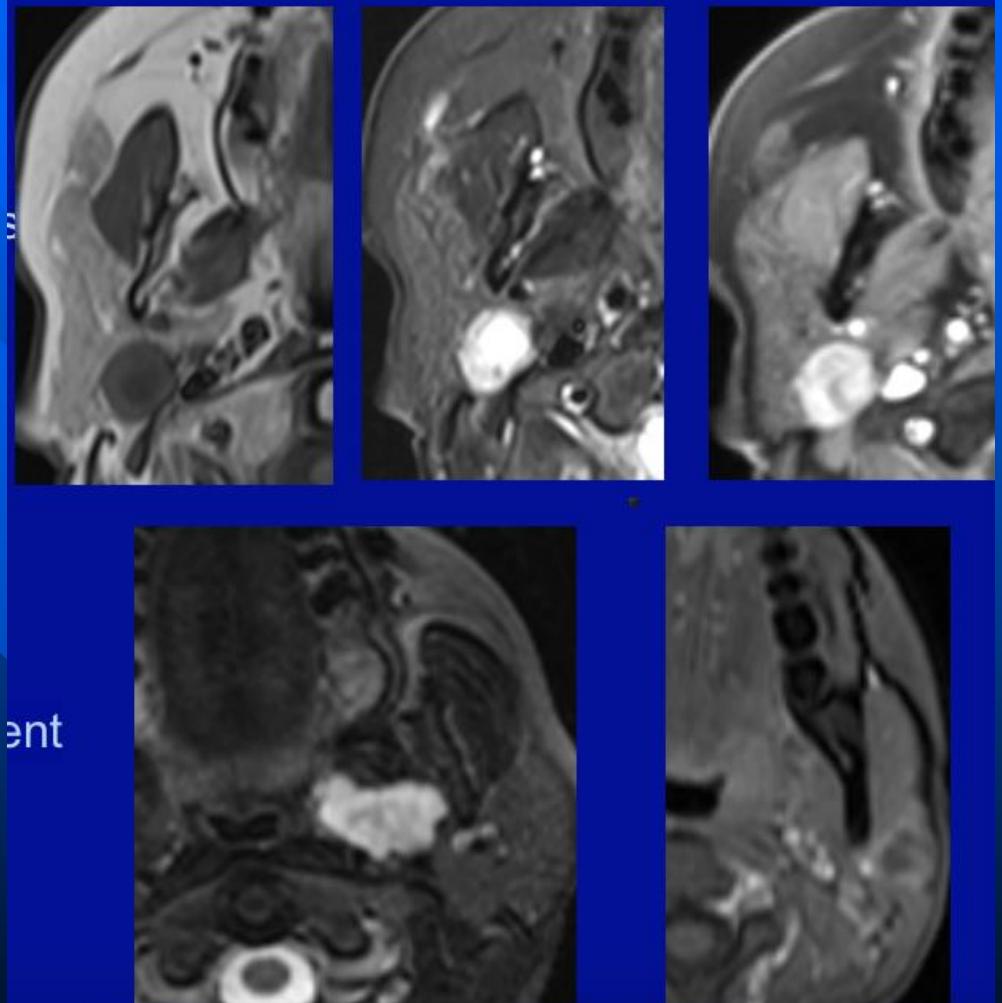


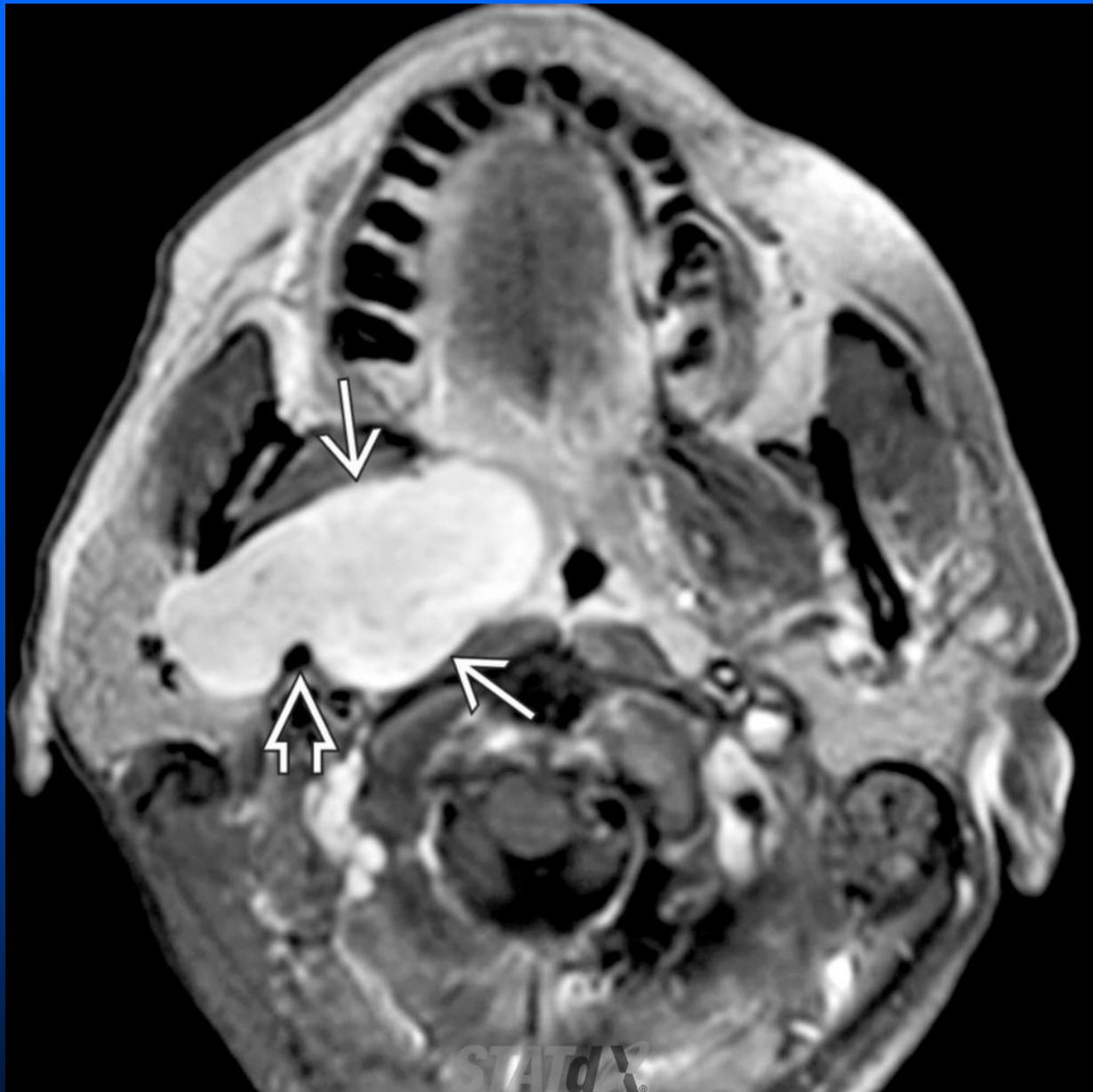
T1 post

- o *80% of benign parotid lesions*
- o *Middle Age women*
- o *Well defined, solid and round.*
- o *80% of T2 bright lesions in parotid gland Pleomorphic adenomas*

Pleomorphic Adenoma

- Middle aged females
- Most common benign mass
- Infrequently undergoes malignant transformation
- Classic appearance
 - Sharp margin
 - Int T1
 - Bright T2
 - Mild to avid enhancement





Axial T1WI C+ FS MR shows a large, lobulated, homogeneously enhancing mass (white solid arrow) in the deep lobe of the parotid. The styloid process (white open arrow) indents the posterior aspect of the mass, indicating that the mass is in the parotid space, suggesting BMT.

Recurrent PA

- "Seeding" from operative cell spillage
- Nodules best seen on T2 FS & T1 C+ FS MR

