

# AMSER Rad Path Case of the Month:

62 year old male presents with right-sided facial mass



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Allegheny  
Health Network



# Patient Presentation

**HPI:** 62 year old man presents with a one year history of a right-sided facial mass that fluctuates in size. He denies facial weakness/numbness, trismus, or otalgia. He has not experienced any clenching, chewing difficulty, difficulty swallowing/talking. He states the mass does not change in size with eating. He has had regular dental exams (normal x-rays) with no evidence of teeth grinding.

**PMHx:** HTN, HLD, osteoarthritis, psoriasis, Varicella

**Surgical Hx:** adenoidectomy, knee cartilage replacement

**Family Hx:** multiple sclerosis (father), lung cancer (mother), diabetes (brother)

**Social Hx:** Denies current or past smoking/chewing tobacco use. Denies alcohol and illicit drug use.

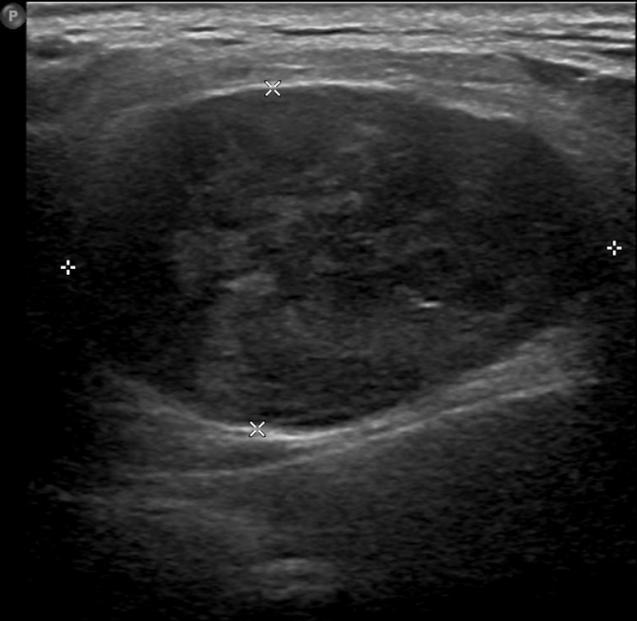
**Medications:** atorvastatin, lisinopril-HCTZ, Otezla

- Physical exam reveals a **unilateral, 2 x 3 cm, firm, slightly mobile right parotid mass**; the rest of the exam is unremarkable.
- Ultrasound and CT w/ contrast are ordered...

# Ultrasound Head/Neck

Thyroid  
L18-5  
44Hz  
RS

2D  
62%  
Dyn R 65  
P Low  
Res



TIS0.1 MI 0.9



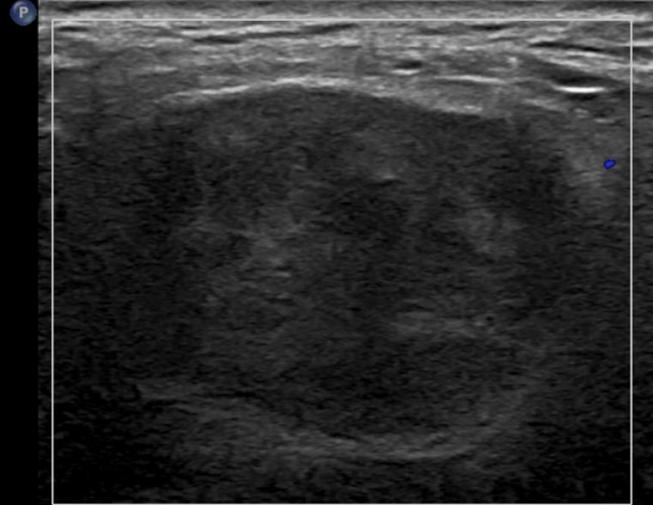
✦ Dist 3.41 cm  
✕ Dist 2.14 cm

Right NECK

Thyroid  
L18-5  
6Hz

2D  
70%  
Dyn R 62  
P Low  
Res

CF  
57%  
1364Hz  
WF 122Hz  
7.0MHz



TIS0.3 MI 1.1



Right NECK

4.0cm-

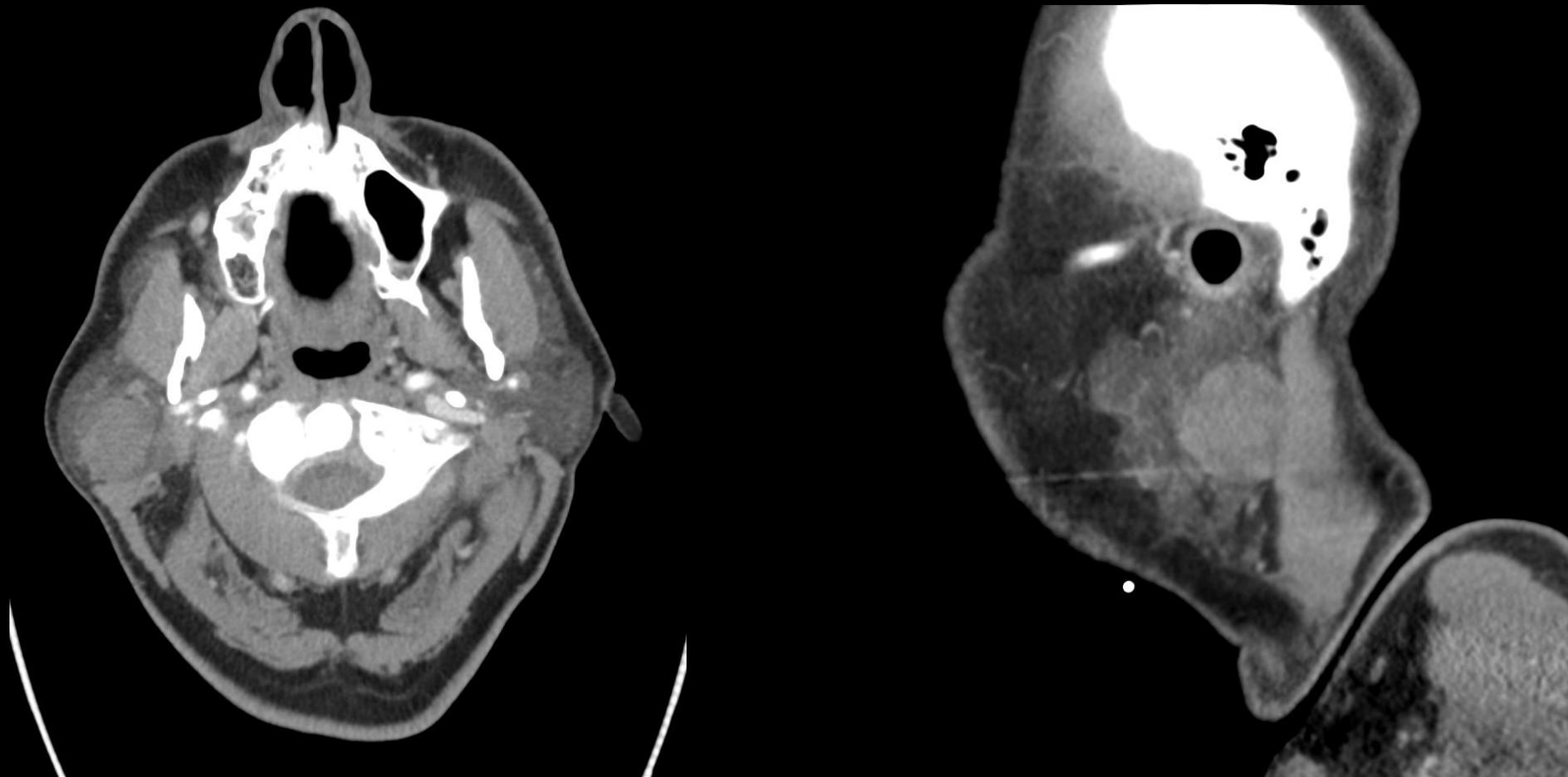
# Ultrasound Head/Neck



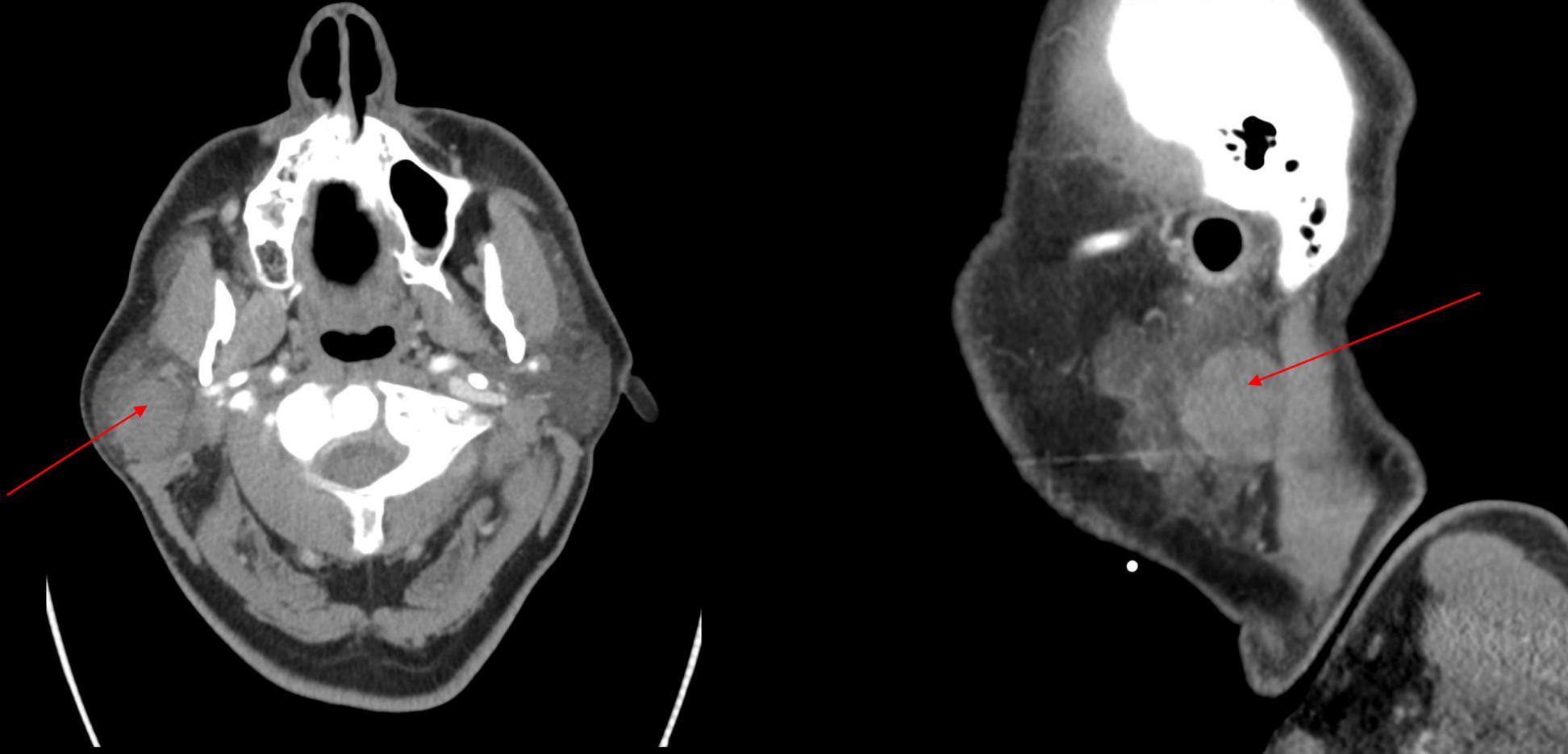
- 3.4 x 2.1 cm heterogeneous mass occupying lesion with discrete margins. There is no convincing posterior acoustic enhancement or shadowing.

- There is no evidence of internal vascularity on color Doppler.

# CT Head/Neck with Contrast



# CT Head/Neck with Contrast



- 3.2 x 3.0 x 2.8 cm mildly enhancing mass centered on the junction of the superficial and deep right parotid lobes.
- The margins of the mass are discrete with smooth borders. There is no evidence of a contralateral (left sided) parotid mass. There are no abnormal lymph nodes in the neck.

# Differential Diagnosis Based on Imaging

Pleomorphic Adenoma (benign mixed tumor)

Warthin Tumor (papillary cystadenoma lymphomatosum)

Mucoepidermoid Carcinoma

Metastasis

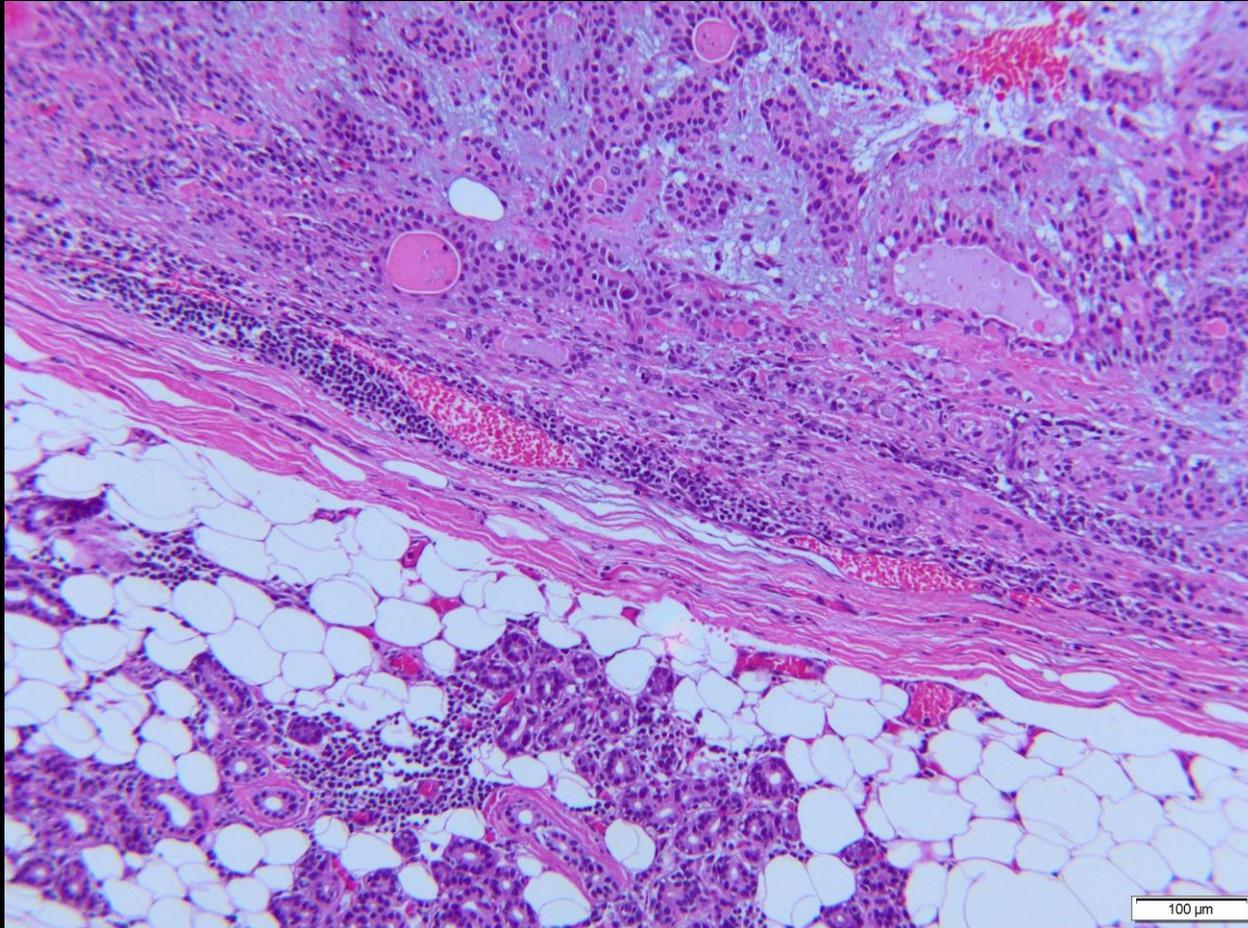
Lymphoma

# Gross Specimen

- The patient underwent a right superficial parotidectomy w/ facial nerve dissection
- Serial sectioning reveals a hemorrhagic, lobulated, gray-yellow soft lesion that measures 3.5 x 3 x 2.5 cm

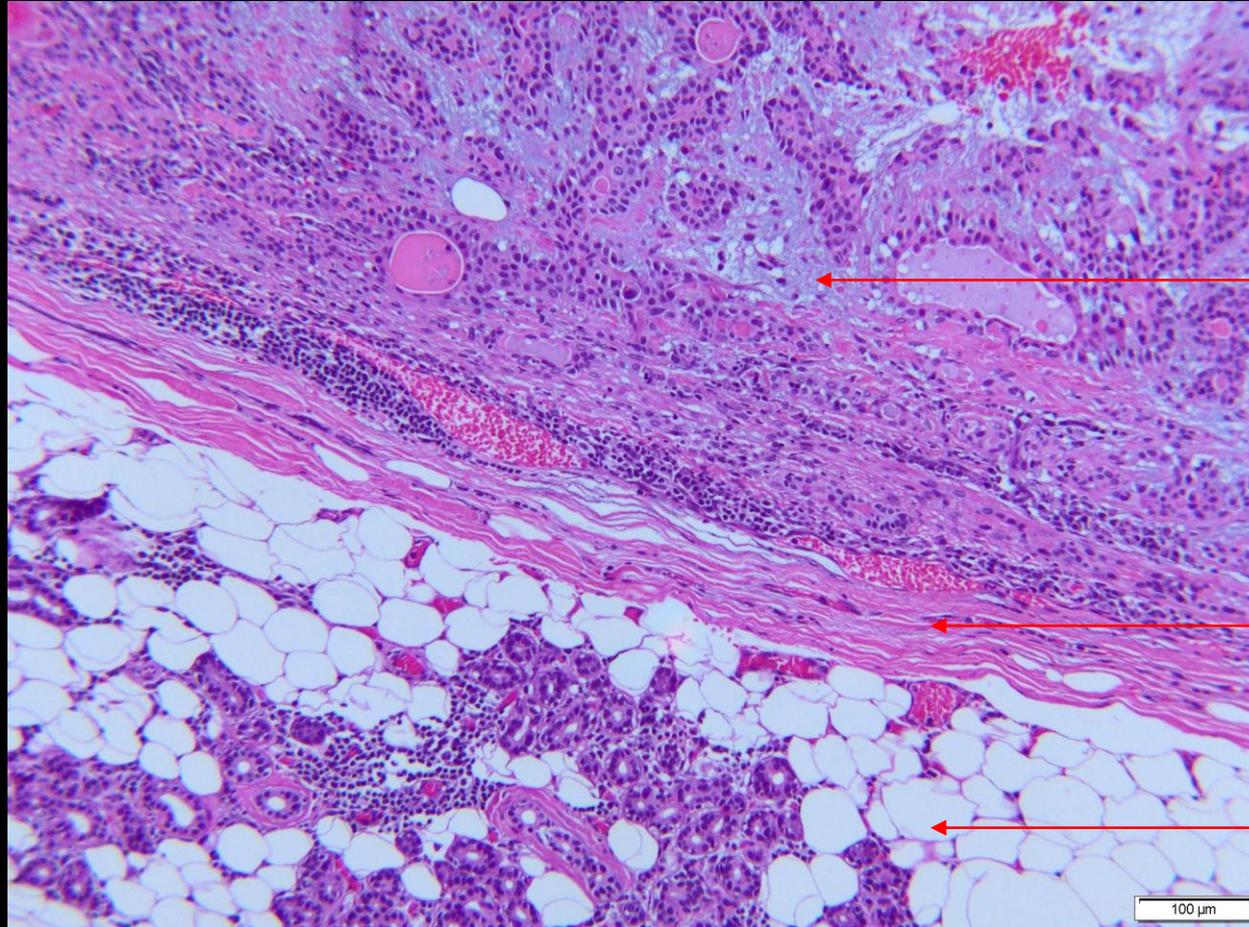


# Histopathology (H&E)



- **Well demarcated** tumor separated from adjacent normal parotid tissue by an intact fibrous capsule

# Histopathology (H&E)



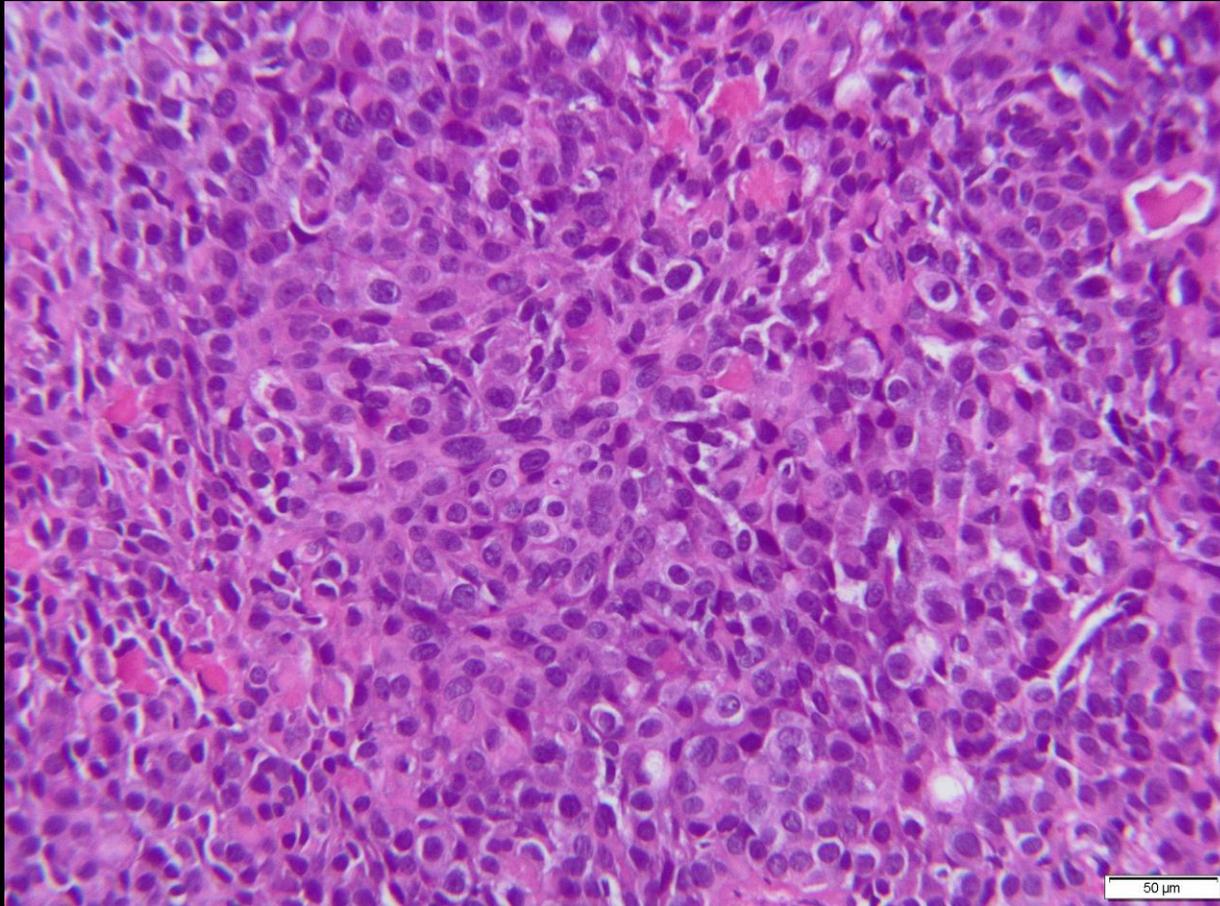
- **Well demarcated** tumor separated from adjacent normal parotid tissue by an intact fibrous capsule

Tumor

Fibrous capsule

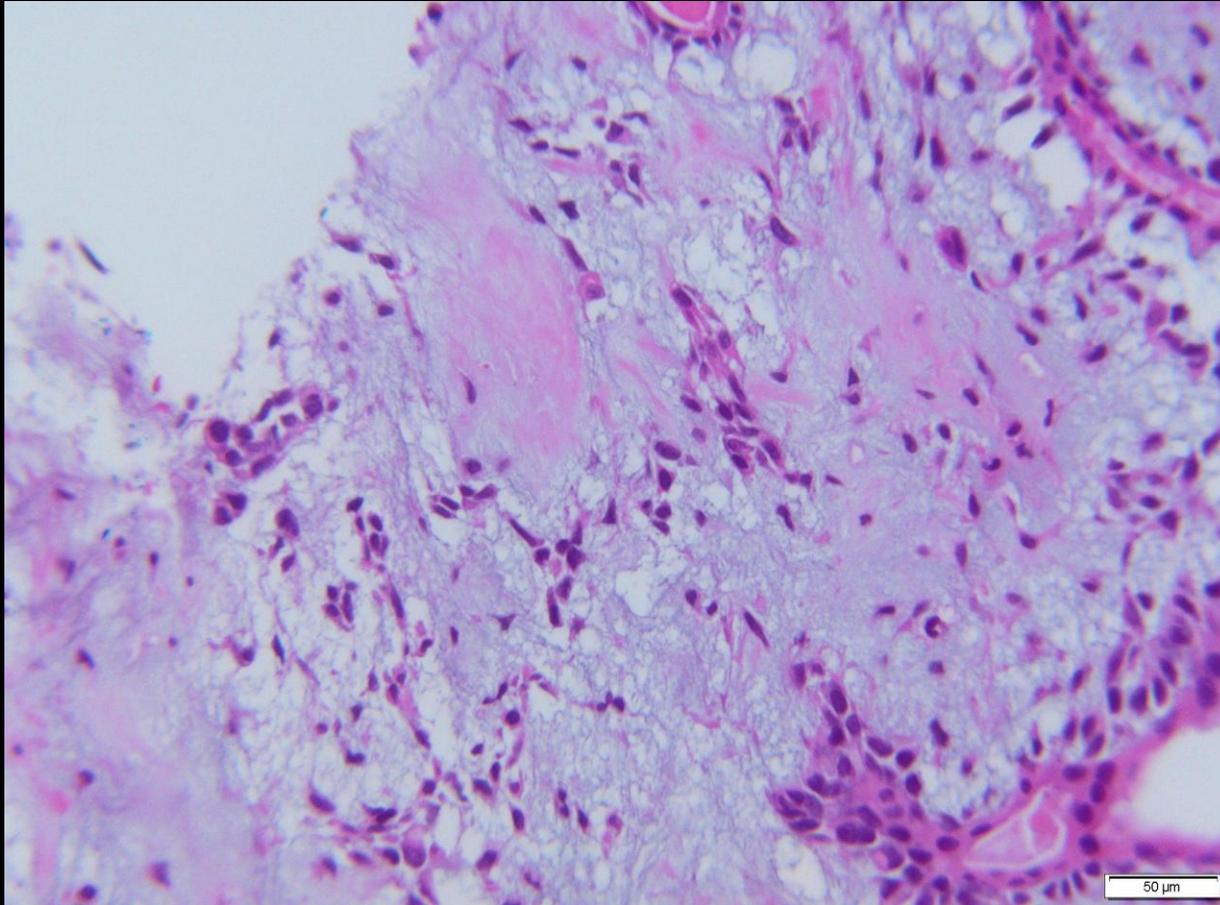
Residual normal parotid tissue

# Histopathology (H&E)



- The tumor is composed of well differentiated **ductal epithelial cells**
- Mildly increased N/C ratio with evenly dispersed chromatin

# Histopathology (H&E)



- The tumor also contains **myoepithelial cells** and a characteristic **chondromyxoid stroma**

Final Dx:

Pleomorphic Adenoma

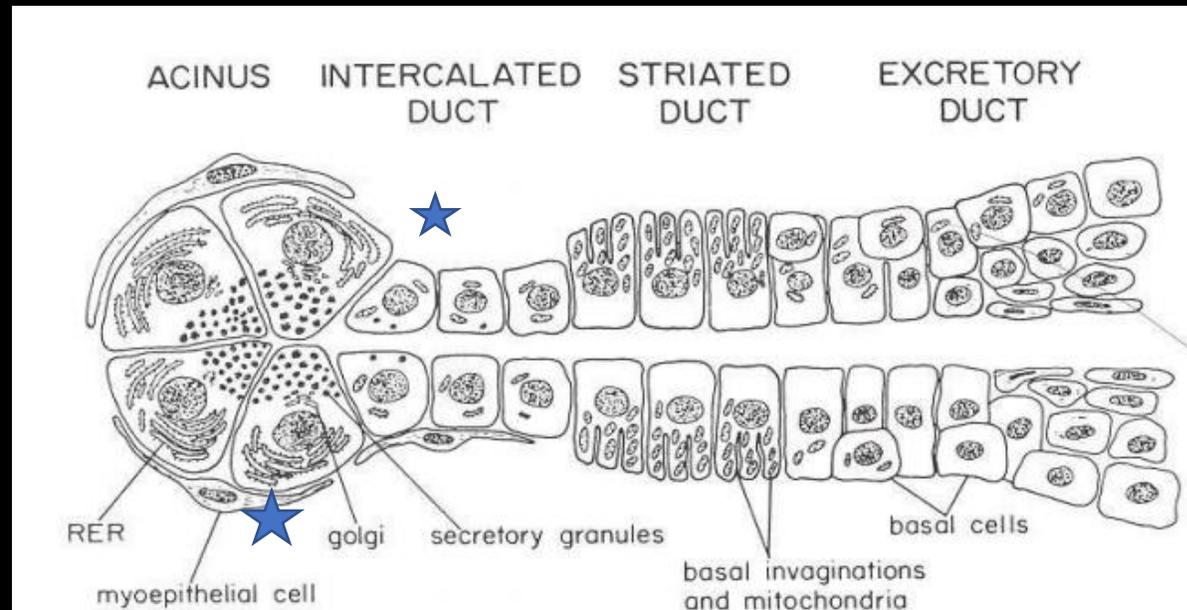
# Case Discussion

- The most important distinguishing feature of a pleomorphic adenoma is its **BIPHASIC** nature (cellular polymorphism) -

**MYOEPIHELIAL CELLS** → have contractile function, secrete \*chondromyxoid stroma\*



**DUCTAL CELLS**



(Image: UTMB)

# Case Discussion

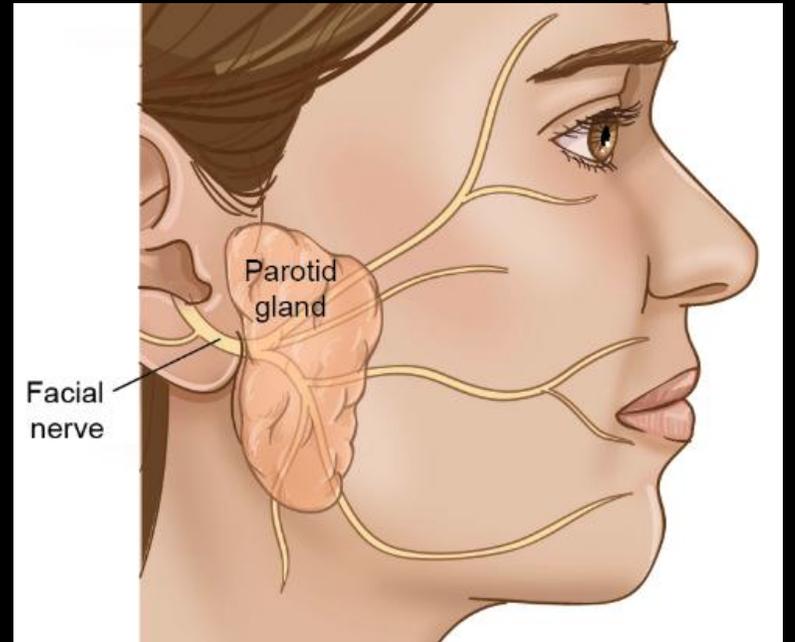
- Pleomorphic adenomas commonly present as a unilateral, small, painless, slowly growing, well demarcated, mobile facial mass in the fourth to sixth decade of life, but can also occur over a wide age range.
- They are the most common benign tumors of the parotid gland. However, these tumors must be completely excised because they have **malignant potential** (carcinoma ex pleomorphic adenoma), which can be difficult to treat.
- This tumor has a **strong tendency to recur**, especially if incompletely excised or ruptured intraoperatively.
  - A recurring tumor is a strong risk factor for future malignancy and metastasis.
    - Invasion of the fibrous capsule and facial nerve involvement are key features of malignant transformation

# Treatment Options

- The mainstay of treatment is **complete surgical excision**.
  - **Superficial parotidectomy** – most common type of parotid surgery; removal of the parotid gland superficial to the plane of the facial nerve.
  - Total parotidectomy – removal of the entire parotid gland (both lobes). All branches of the facial nerve must be identified and carefully retracted to prevent post-surgical complications.
  - Radical parotidectomy – total parotidectomy + facial nerve resection; may include removal of additional structures, such as the temporal bone.

# Surgical Complications

- Bleeding/hematoma
- Infection
- Sialocele
- Numbness of skin on the neck, face, ear
- Frey's Syndrome
  - "Gustatory sweating" – phenomenon that causes the sight or smell of food to cause sweating on the face.
- **\*Facial Nerve (CN VII) injury\***
  - Courses directly through the parotid gland, artificially dividing it into a superficial and deep lobe; responsible for the motor innervation of the muscles of facial expression.



(Image: Head & Neck Cancer Guide)

# References

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