

# 25-year-old male with palpable neck mass and trouble swallowing

Andrew Klufas, MD MBA

Racquel Helsing, MD

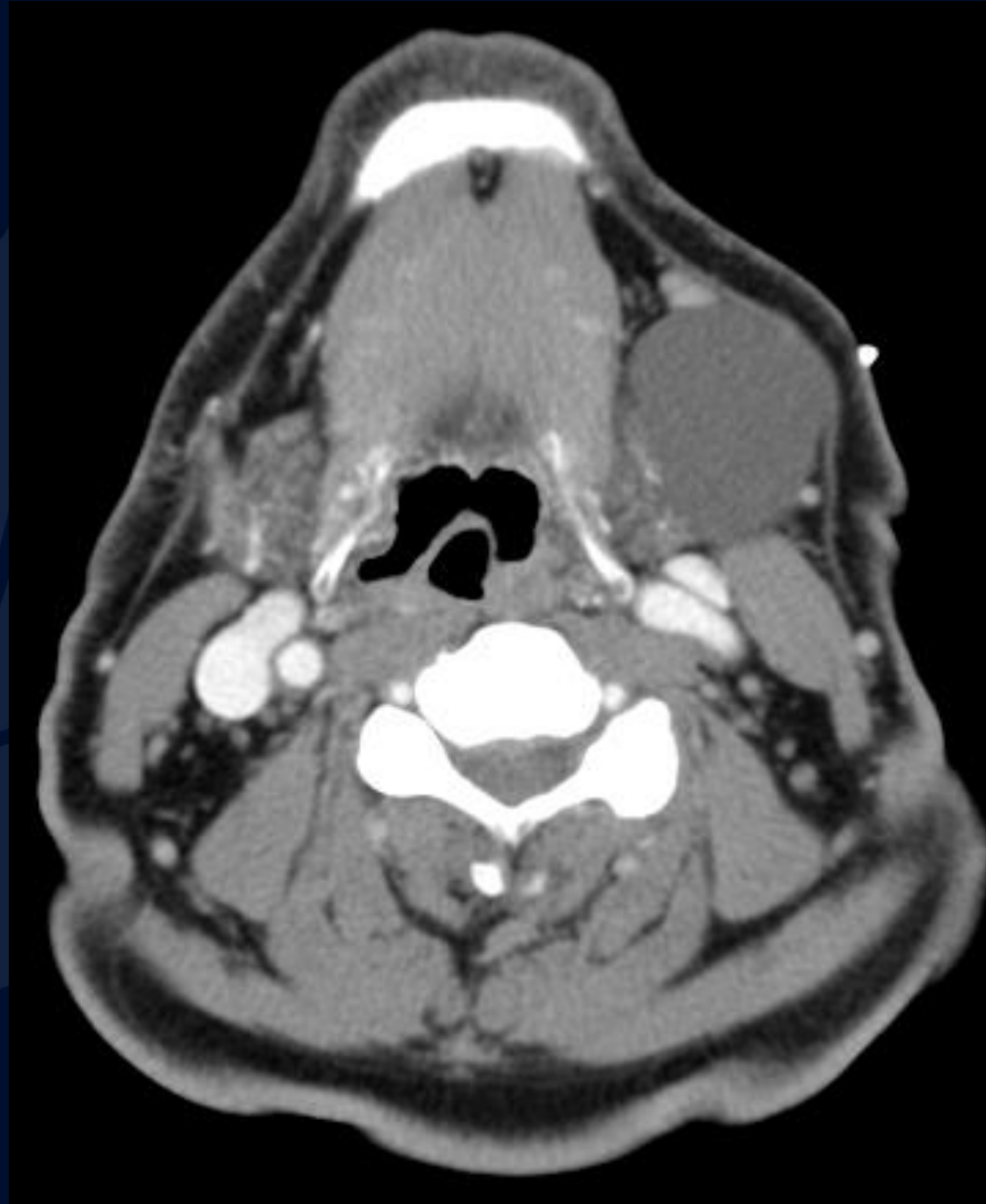
# CT with IV contrast



# CT with IV contrast



# CT with IV contrast



A large, stylized oak leaf graphic in a dark blue color, positioned on the left side of the slide. The leaf has a prominent central vein and several smaller veins branching off, with a wavy, lobed edge.

?

# Second Branchial Cleft Cyst

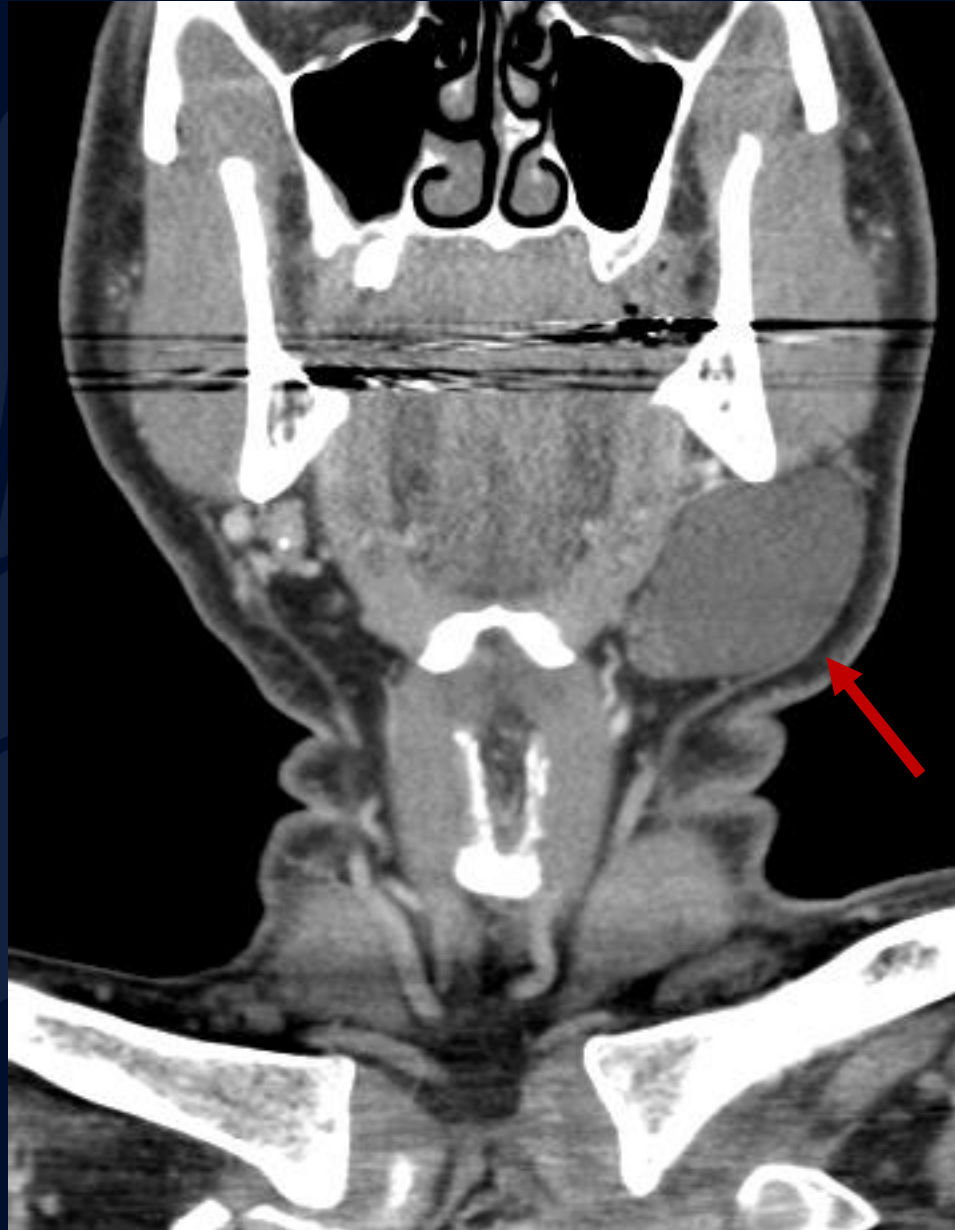
# CT with IV contrast

Left branchial cyst appears as round, thin-walled, fluid filled, sharply circumscribed lesion





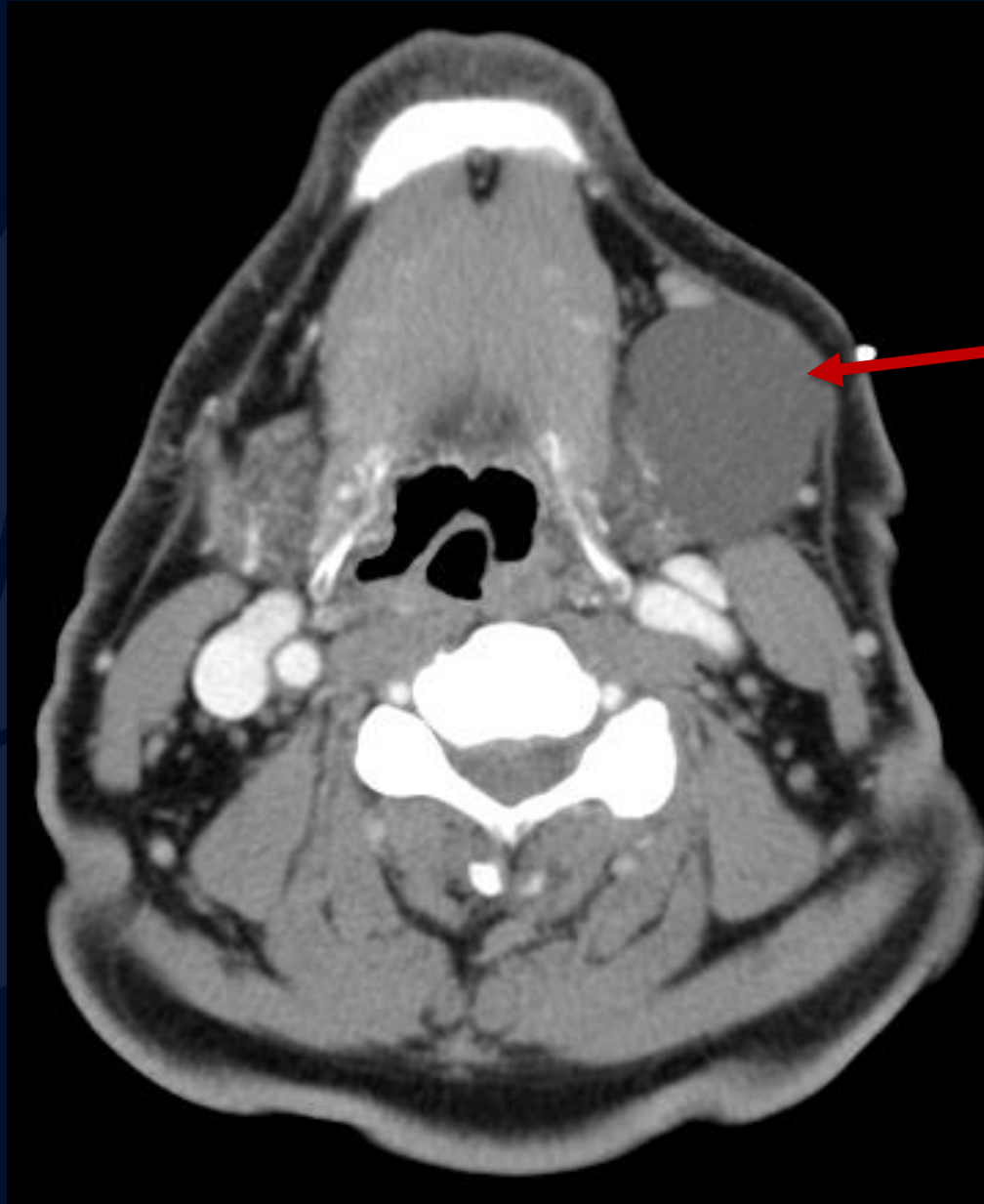
## CT with IV contrast



Left branchial cyst appears as round, thin-walled, fluid filled, sharply circumscribed lesion



## CT with IVcontrast



Left branchial cyst  
appears as round,  
thin-walled, fluid  
filled, sharply  
circumscribed  
lesion

# Second Branchial Cleft Cyst

**Clinical Presentation:** Present in early adulthood (10 – 40 y/o) after minor trauma or infection. Symptoms depend on size, ranging from completely asymptomatic to dysphagia and shortness of breath

**Location:** Can occur anywhere along the second branchial apparatus, with the most common location being at the angle of the mandible

## Imaging:

- **CT:** Round, thin-walled, fluid filled, sharply circumscribed lesion
  - Notch Sign: Can occasionally see extension of cyst wall between the internal and external carotid arteries above the carotid bifurcation
- **MRI**
  - T1: Variable signal depends on protein content (High protein = High intensity)
  - T2: Nearly always a hyper-intense signal

# References

Gaillard F, Rasuli B, Deng F, et al. Second branchial cleft cyst. Reference article, Radiopaedia.org (Accessed on 15 Sep 2023)  
<https://doi.org/10.53347/rID-806>

Muller S, Aiken A, Magliocca K, Chen AY. Second Branchial Cleft Cyst. Head Neck Pathol. 2015 Sep;9(3):379-83. doi: 10.1007/s12105-014-0592-y. Epub 2014 Nov 25. PMID: 25421295; PMCID: PMC4542795.

Mittal MK, Malik A, Sureka B, Thukral BB. Cystic masses of neck: A pictorial review. Indian J Radiol Imaging. 2012 Oct;22(4):334-43. doi: 10.4103/0971-3026.111488. PMID: 23833426; PMCID: PMC3698897.

Lanham PD, Wushensky C. Second brachial cleft cyst mimic: case report. AJNR Am J Neuroradiol. 2005 Aug;26(7):1862-4. PMID: 16091545; PMCID: PMC7975143.