

AMSER Case of the Month

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68-year-old male with incidental findings related to thyroid dysfunction

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Allegheny
Health Network

AMSER

Patient Presentation

- **HPI:** 68-year-old male who presented to his primary care physician for abnormal thyroid function testing and increasing fullness in the left neck over several weeks.
- **Labs:**
 - TSH – 72.73 (elevated)

What Imaging Should We Order?

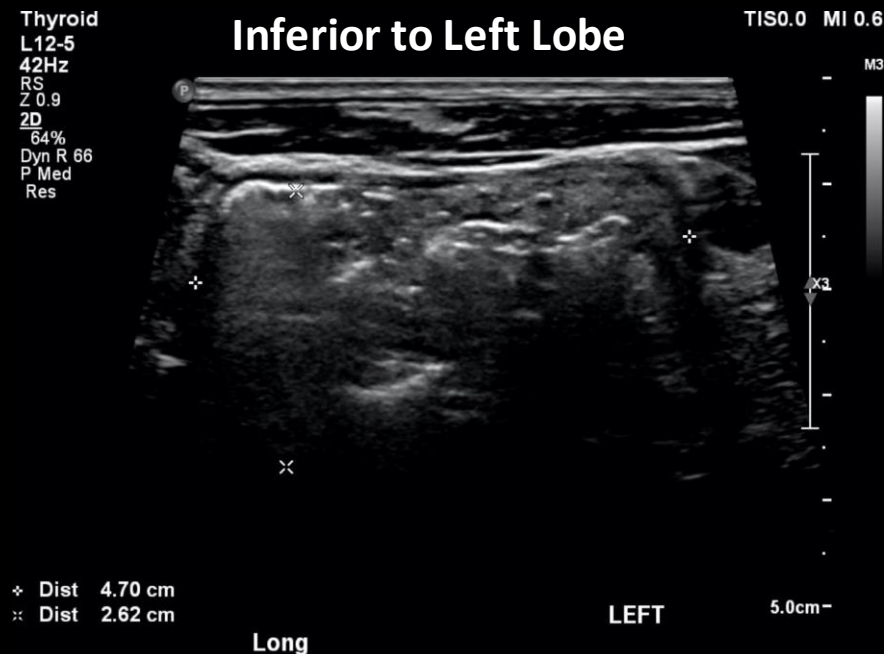
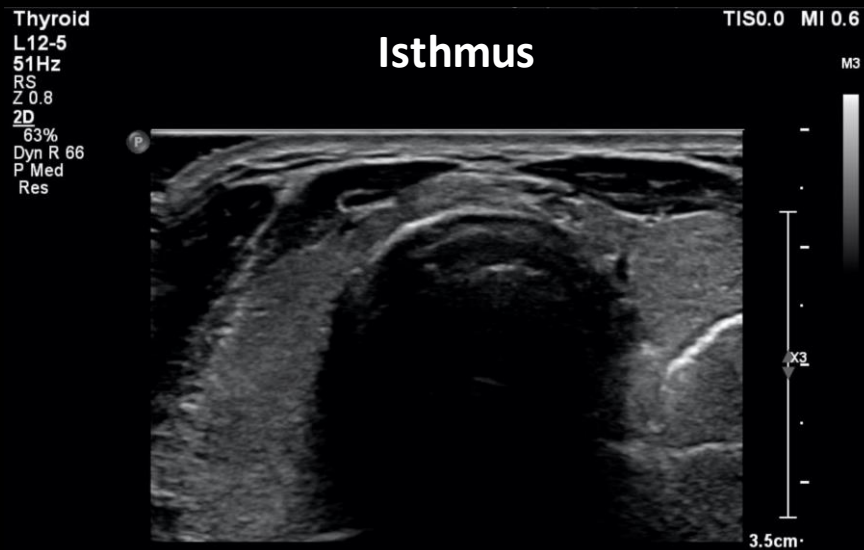
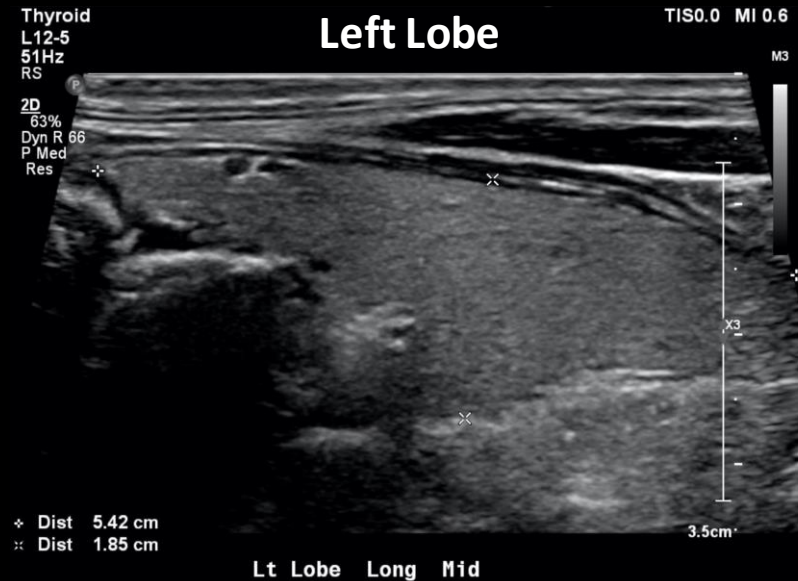
ACR Appropriateness criteria

Variant 2:

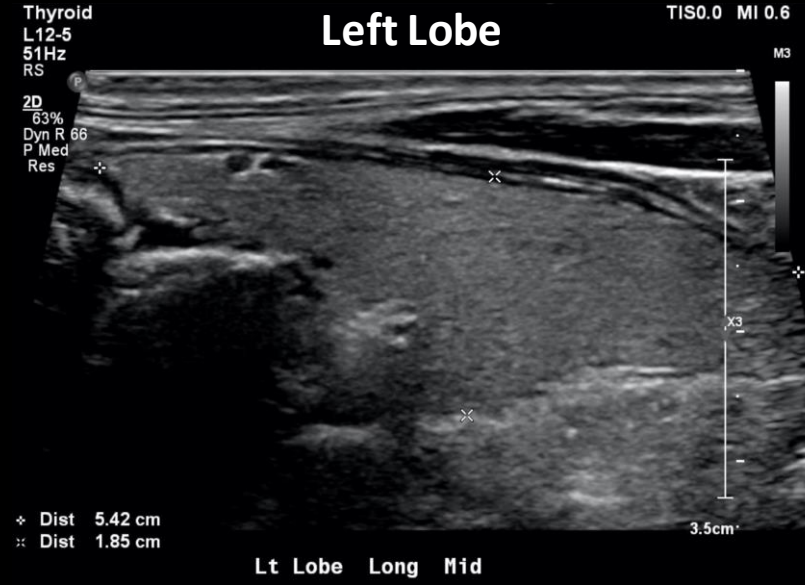
Suspected goiter. Initial imaging.

Procedure	Appropriateness Category	Relative Radiation Level
US thyroid	Usually Appropriate	○
CT neck without IV contrast	Usually Appropriate	☢☢☢
CT neck with IV contrast	May Be Appropriate	☢☢☢
I-123 uptake scan neck	May Be Appropriate	☢☢☢
I-131 uptake scan and Tc-99m pertechnetate scan neck	May Be Appropriate	☢☢☢☢
MRI neck without and with IV contrast	May Be Appropriate	○
MRI neck without IV contrast	May Be Appropriate	○
CT neck without and with IV contrast	Usually Not Appropriate	☢☢☢
FDG-PET/CT whole body	Usually Not Appropriate	☢☢☢☢

Thyroid Ultrasound

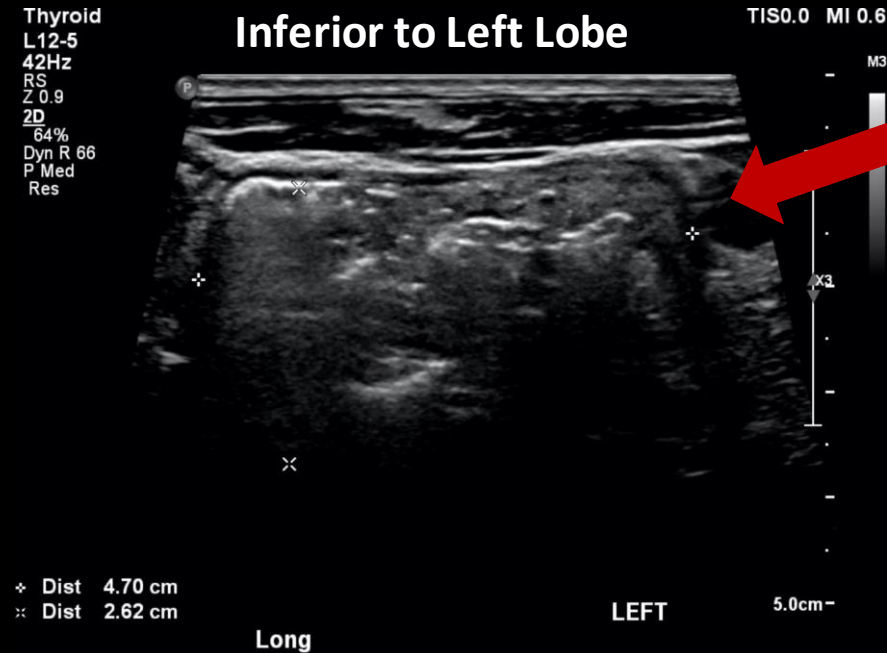
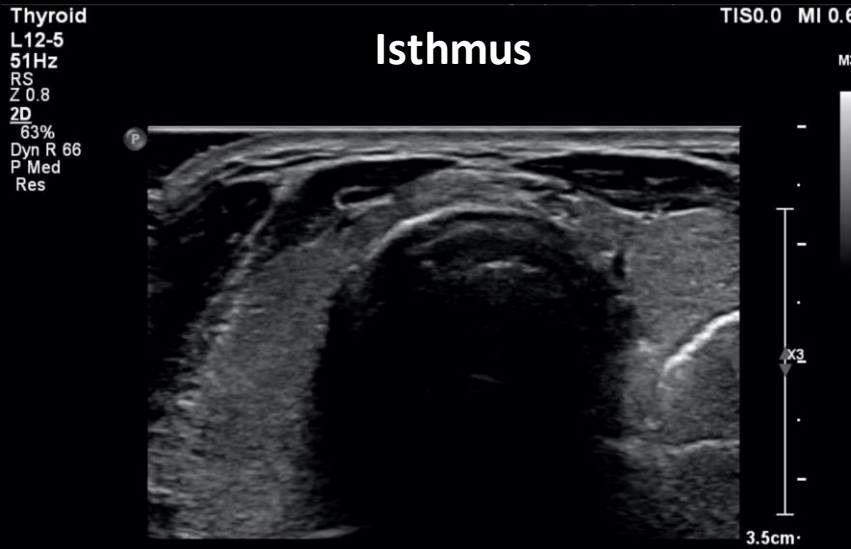


Thyroid Ultrasound



Findings:

Enlarged thyroid gland with uniform parenchymal echotexture

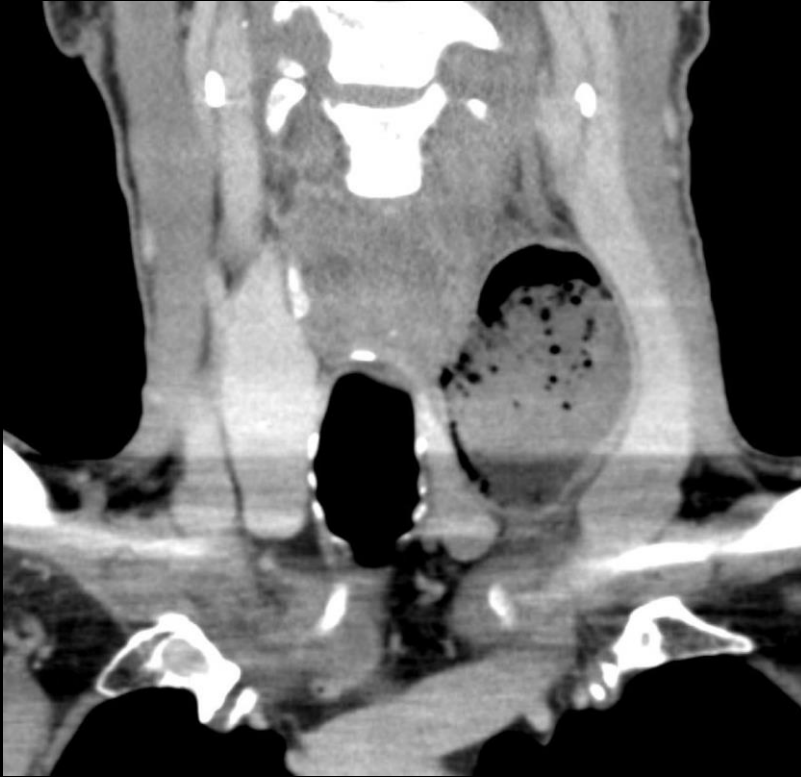


Indeterminate, solid-appearing extrathyroidal structure along the inferior left lobe measures up to 4.7 cm.

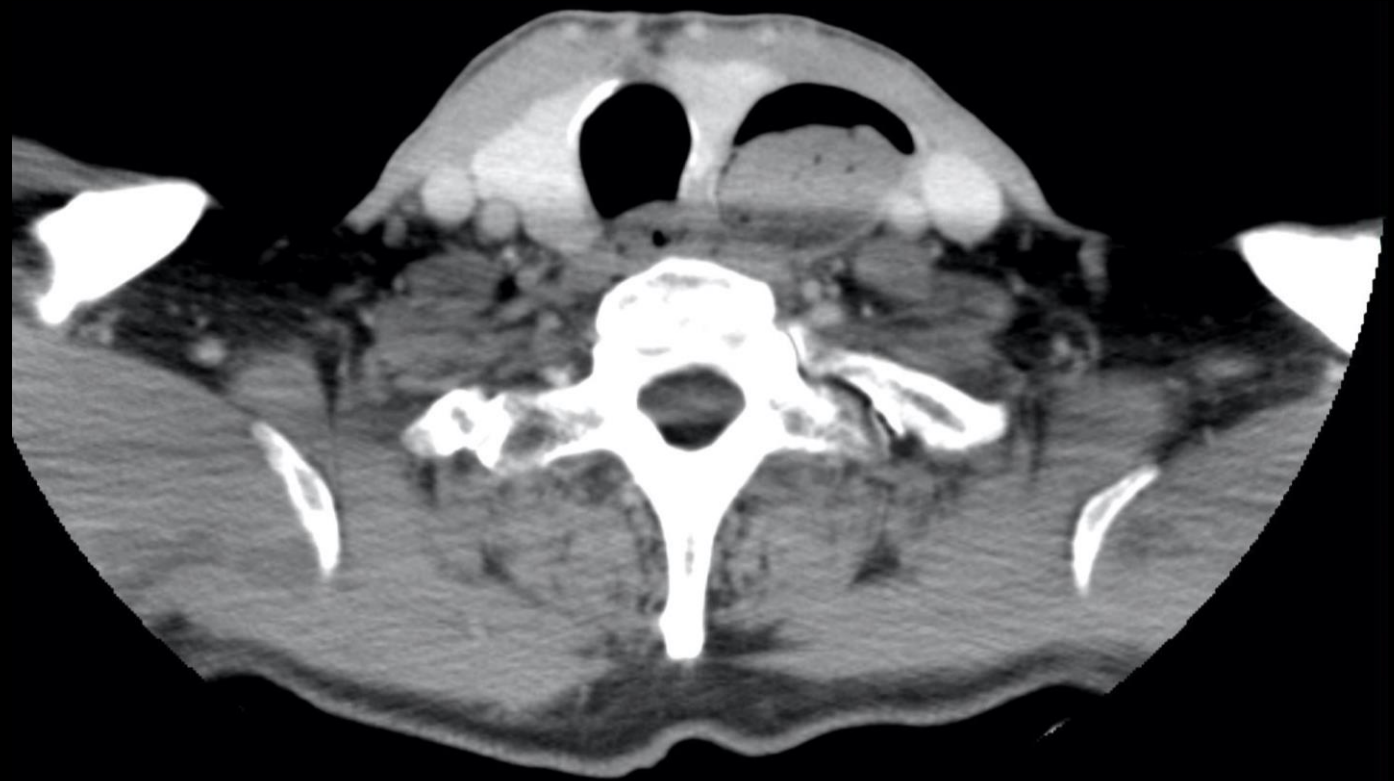
More complete evaluation with contrast enhanced CT soft tissue neck is recommended

Contrast Enhanced Neck CT

Coronal CT

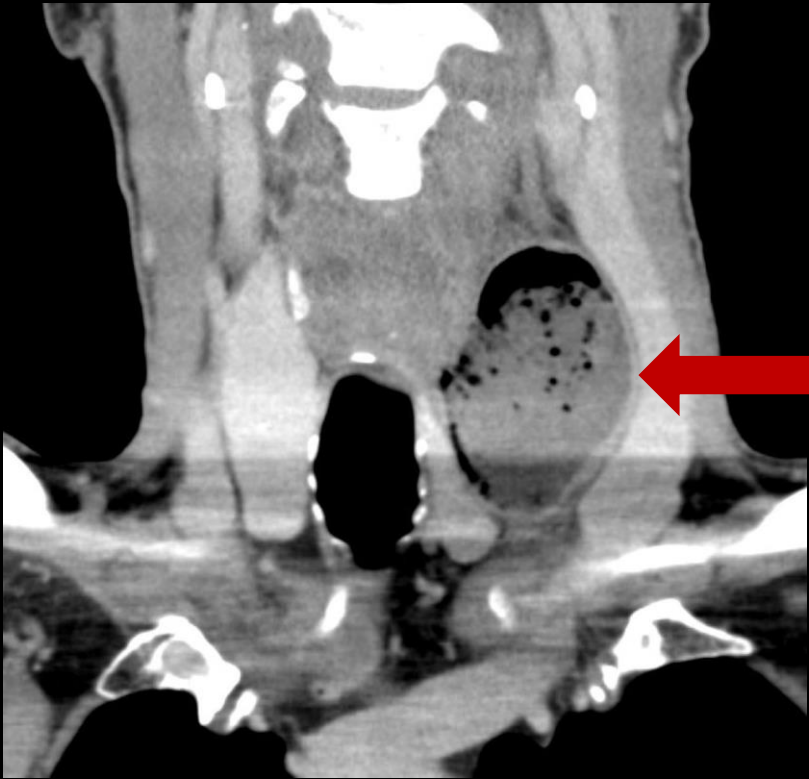


Axial CT



Contrast Enhanced Neck CT

Coronal CT



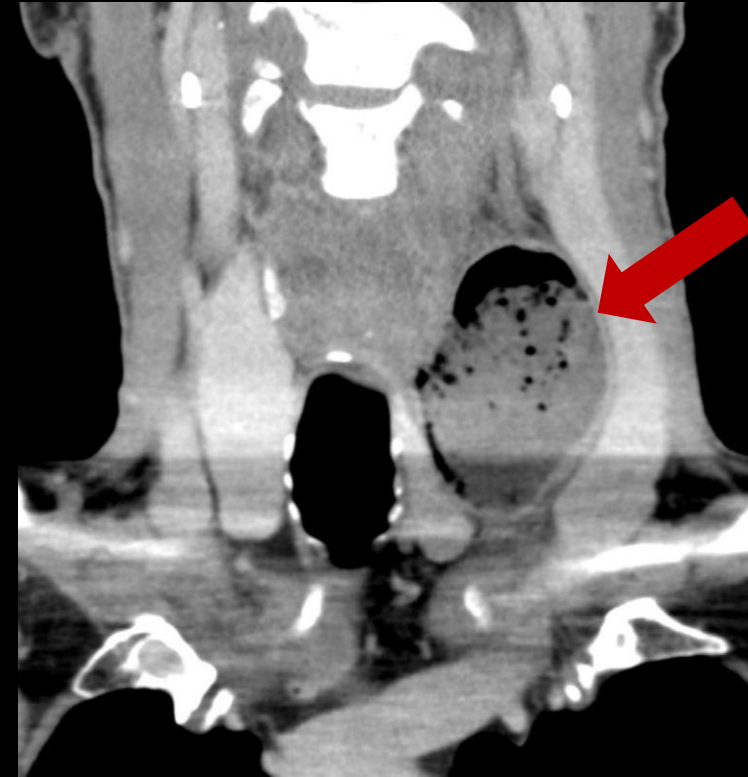
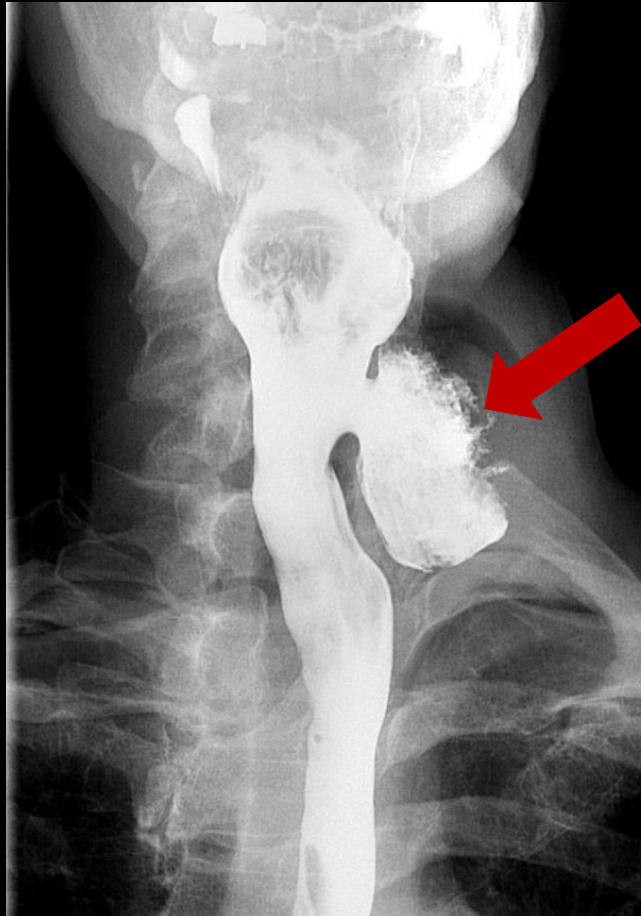
Axial CT



- Arrows point to a well- circumscribed lesion containing soft tissue and gas along the lateral aspect of the cervical esophagus, posterior to the left thyroid lobe, and medial to the left internal jugular vein and left common measuring roughly 3 x 5 cm
- This may be contiguous with esophageal wall and may reflect a large esophageal diverticulum containing food/debris
- Recommend fluoroscopic esophagram for confirmation

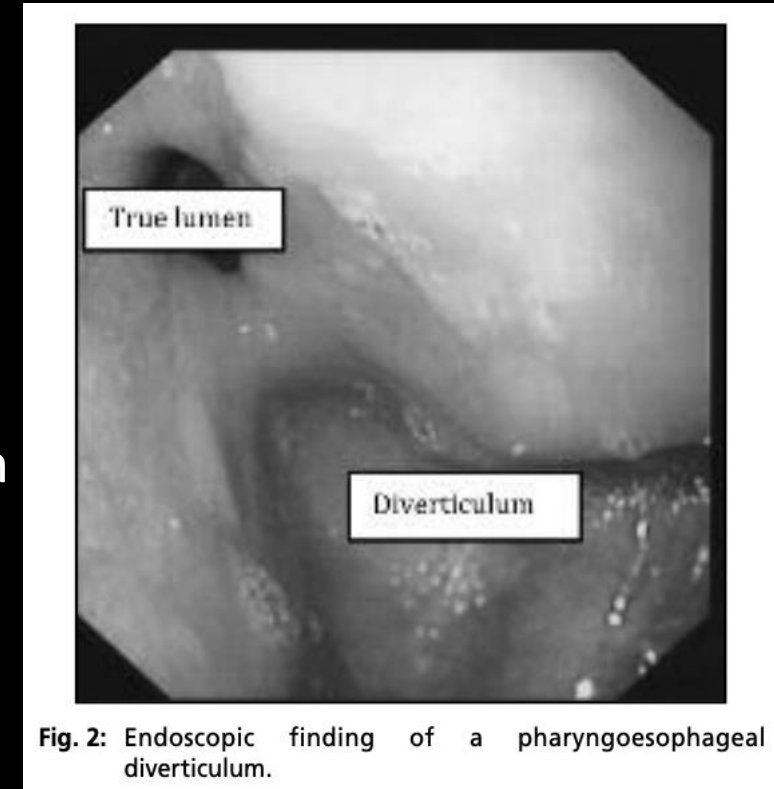
Final Diagnosis: Killian-Jamieson diverticulum

- Fluoroscopy and upper endoscopy confirmed a 5.2cm anterolateral diverticulum in the proximal esophagus containing food with a narrow neck, corresponding to the abnormality on CT.



Killian- Jamieson Diverticulum

- Pseudodiverticulum- does not involve all layers
 - Mucosal outpouching
- Cause
 - Etiology unknown
 - Suspected- high intraluminal pressure due to desynchronized swallowing
 - Hypopharyngeal defect
 - Diverticulum herniates through a muscular gap (Killian Jamieson space) below the cricopharyngeal muscle and lateral to the esophagus
- Major concerns
 - Recurrent laryngeal nerve injury
 - Hoarseness
- Imaging
 - Presents radiographically as a diverticulum off the **anterolateral wall** of the proximal cervical esophagus



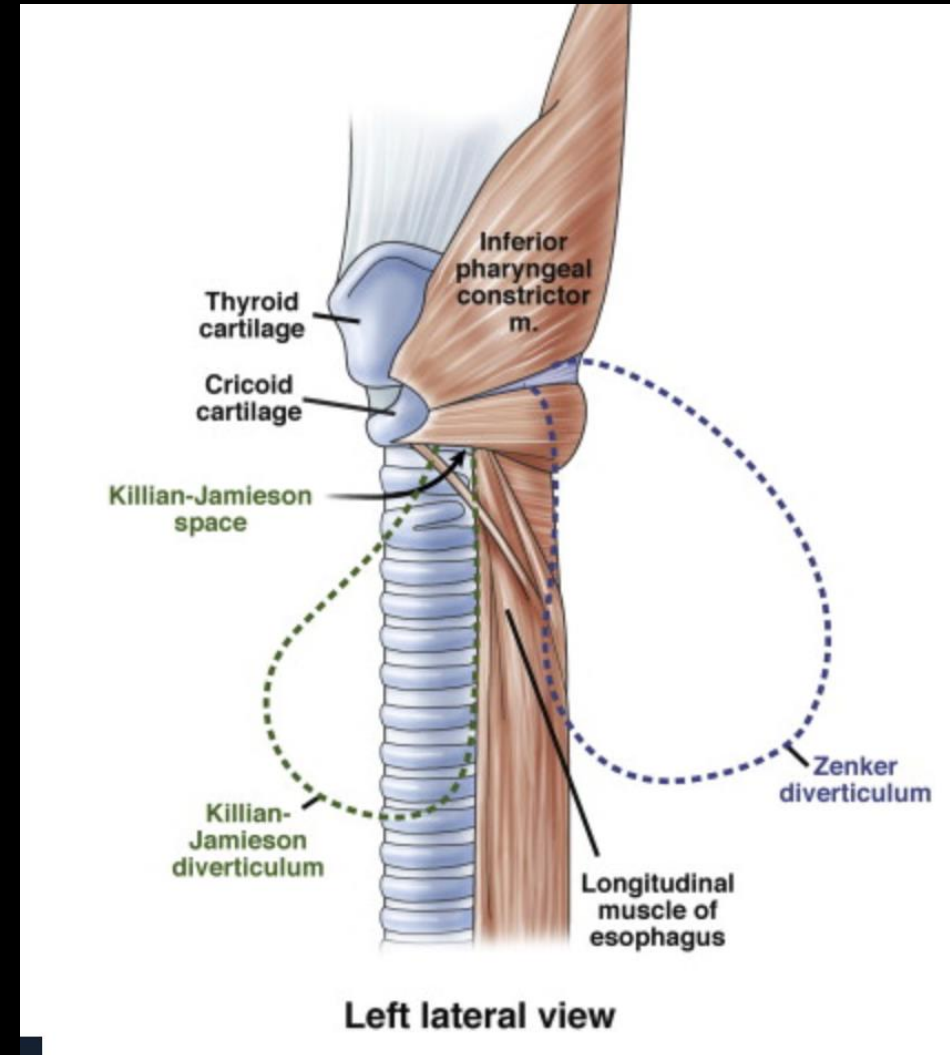
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Case Discussion

- Roughly 19% of Patients with Killian- Jamieson diverticulum experience symptoms ⁷
 - Suprasternal dysphagia, cough
- Compared to Zenker's diverticulum
 - Posterior diverticulum (Killian-Jamieson protrude *anterolaterally*)
 - 62% of patients experience symptoms ⁷
 - Four times more likely ⁷
- Ruling out thyroid differential diagnoses
 - In one case report of a similar patient, a FNA was performed to biopsy a lesion ⁶
 - Discussion suggested observing the nodule under ultrasound while the patient swallows to observe possible changes ⁶

Interventions

- Indications
 - notably symptomatic patients
- Procedure
 - Open transcervical surgical removal vs . endoscopic transcervical surgical removal
 - Diverticuloplexy vs. diverticulectomy
 - Neck size of the diverticulum ²
 - Anatomy in relation of the thoracic outlet ²
- Goal
 - Create communication between the diverticulum and the true lumen²
 - Prevent infection and symptoms
- Risks
 - Recurrent laryngeal nerve injury ²
 - Infection, bleeding, etc.



[https://www.cghjournal.org/article/S1542-3565\(13\)01323-2/fulltext](https://www.cghjournal.org/article/S1542-3565(13)01323-2/fulltext)

Citations

1. *Appropriateness Criteria*. (n.d.). Retrieved December 9, 2020, from https://acsearch.acr.org/list?_ga=2.139894650.899201843.1607361567-128490668.1607361567
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3. *Killian-Jamieson diverticulum | Radiology Reference Article | Radiopaedia.org*. (n.d.). Retrieved December 9, 2020, from <https://radiopaedia.org/articles/killian-jamieson-diverticulum?lang=us>
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6. Pang, J. C., Chong, S., Na, H. I., Kim, Y. S., Park, S. J., & Kwon, G. Y. (2009). Killian-Jamieson diverticulum mimicking a suspicious thyroid nodule: Sonographic diagnosis. *Journal of Clinical Ultrasound*, 37(9), 528–530. <https://doi.org/10.1002/jcu.20607>
7. Rubesin, S. E., & Levine, M. S. (2001). Killian-Jamieson Diverticula. *American Journal of Roentgenology*, 177(1), 85–89. <https://doi.org/10.2214/ajr.177.1.1770085>