

AMSER Case of the Month

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10-year-old female presenting with painless cervical swelling

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Patient Presentation

- **HPI:** 10-year-old female presenting with painless cervical swelling
- **PMH:** Thyroglossal duct fistula, infected multiple times (2 years ago)
- **PSH:** Excision of thyroglossal duct fistula
- **Vitals:** Within normal limits
- **PE:** Painless swelling and palpable mass on left side of neck
- **Labs:** None

What Imaging Should We Order?

ACR Appropriateness Criteria

Variant: 4 Child. Neck mass(es). Not parotid region or thyroid. Initial imaging.

Procedure	Appropriateness Category	Relative Radiation Level
US neck	Usually Appropriate	○
MRI neck without and with IV contrast	Usually Appropriate	○
MRI neck without IV contrast	Usually Appropriate	○
CT neck with IV contrast	Usually Appropriate	☼☼☼
CT neck without IV contrast	May Be Appropriate (Disagreement)	☼☼☼
Arteriography cervicocerebral	Usually Not Appropriate	☼☼☼
MRA neck without and with IV contrast	Usually Not Appropriate	○
MRA neck without IV contrast	Usually Not Appropriate	○
CT neck without and with IV contrast	Usually Not Appropriate	☼☼☼
CTA neck with IV contrast	Usually Not Appropriate	☼☼☼
FDG-PET/MRI skull base to mid-thigh	Usually Not Appropriate	☼☼☼
FDG-PET/CT skull base to mid-thigh	Usually Not Appropriate	☼☼☼☼

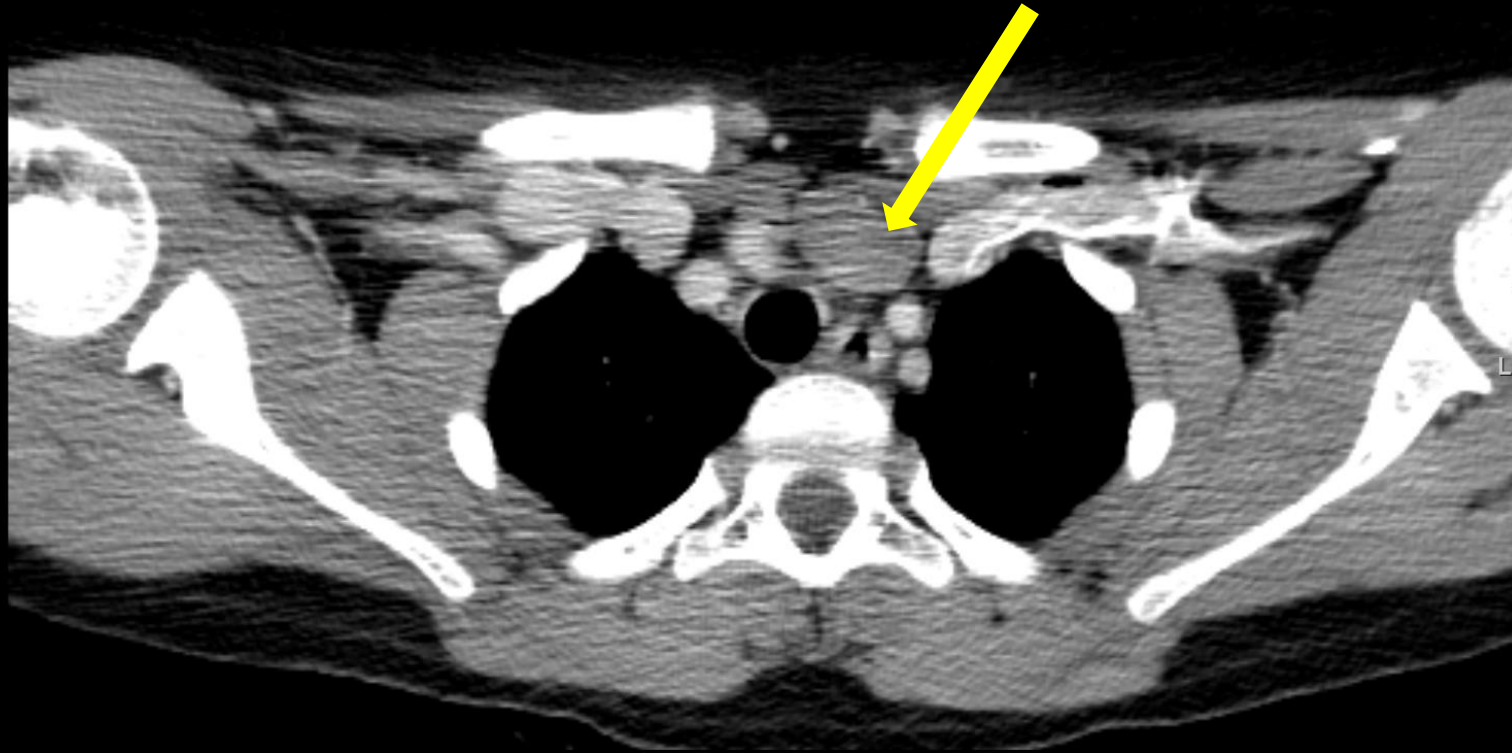
This imaging modality was ordered

Findings (unlabeled)



Findings (labeled)

Abnormal well-circumscribed
lesion in the anterior mediastinum



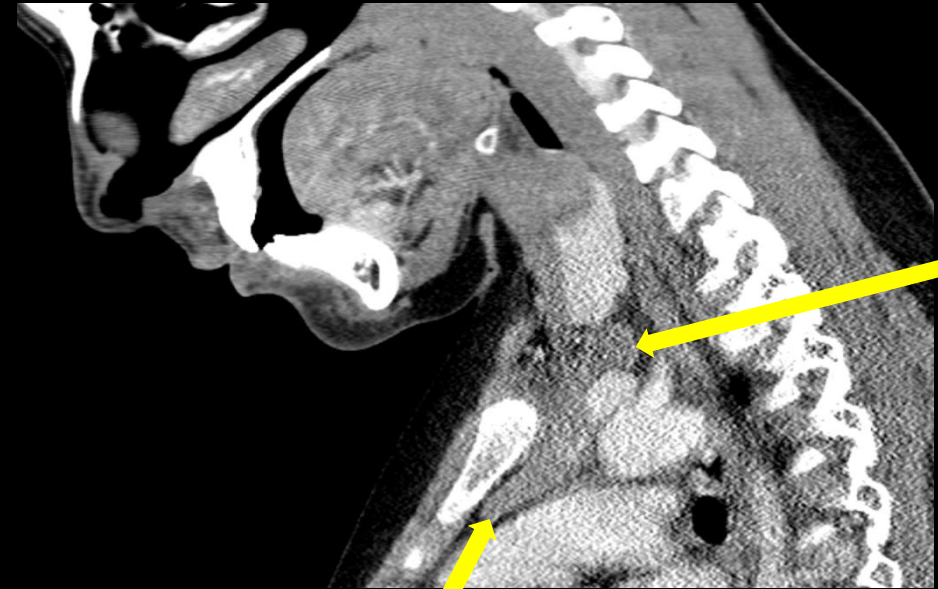
Findings (unlabeled)



Findings (labeled)



Located superior to the
origins of the great vessels
and above the
brachiocephalic veins



Ectopic
thymus

Directly contiguous with
native thymic tissue

Final Dx:

Cervical thymus

Case Discussion

- **Ectopic Cervical Thymus (ECT)**

- Results from incomplete migration of thymic tissue from the third pharyngeal pouch during the 5th week of gestation^{1,2}
- May be found anywhere from the angle of the mandible to the superior mediastinum along the line of embryological descent³
- Usually located anteriorly and deep to the middle third of the sternocleidomastoid³
- Approximately 50% of cervical thymic masses may be continuous with the mediastinal thymus³

- **Presentation**

- Usually a firm, asymptomatic neck lump with no other specific features²
- Symptoms can occur as infection, airway obstruction, feeding difficulties, and rarely Horner's Syndrome²
- 80-90% of lesions remain asymptomatic⁴
- Commonly present unilaterally on the left side and are more common in males⁵

Case Discussion

- **Imaging**

- Ultrasound is considered the first investigative modality for ETC²
- Characteristic ultrasound findings include a homogeneous, hypoechoic mass with multiple internal echogenic foci ("starry sky" appearance)²
- CT and MRI may be used for ambiguous cases²
- MRI demonstrates a homogeneous mass that is isointense on T1 and hyperintense on T2 relative to adjacent muscle²
- CT shows a well-defined ovoid mass with mixed fat and soft tissue density, usually located deep to the sternocleidomastoid muscle⁶

Case Discussion

- **Management**

- Ectopic cervical thymic tissue typically undergoes age-related involution²
- Asymptomatic cases are generally managed conservatively with observation and follow-up, particularly in young children²
- Surgical excision is indicated in large and/or symptomatic lesions²
- It is important to identify normal mediastinal thymus tissue before the removal of ectopic cervical thymus⁴
- An absent thymus has been reported in up to 50% of patients with ECT²
- Due to its proximity to major neurovascular structures, surgical excision may result in significant morbidity²

References:

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