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## A unique presentation of ectopic thyroid, a case report

Erika Allen<sup>a,\*</sup>, Masoud Alzeerah<sup>a,b</sup>, Stevenson Tsiao<sup>a</sup>, Nail Aydin<sup>b</sup>, Subhasis Misra<sup>a,b</sup><sup>a</sup> Texas Tech University Health Sciences Center, Amarillo 1400 S Coulter St., Amarillo, TX, 79106, United States<sup>b</sup> Northwest Texas Healthcare System, 1501 S Coulter St., Amarillo, TX, 79106, United States

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## ABSTRACT

**INTRODUCTION:** This case presents a painful ectopic thyroid, an unusual presentation, in an atypical location. The patient's history of an ingested fish bone, her acute presentation, and inconclusive imaging, made this case a diagnostic dilemma.

**PRESENTATION OF CASE:** 61-year-old female presented with acutely worsening history of left throat pain and dysphagia after swallowing a fish bone. CT scan showed a foreign body in the anterior wall of the cervical esophagus. EGD studies were inconclusive. Surgical exploration identified and excised a multinodular cystic lesion without connection to esophageal lumen. Pathology described multinodular thyroid parenchyma with chronic inflammation and no evidence of malignancy. No foreign body was located.

**DISCUSSION:** Based on the patient's history, imaging, and acute presentation, an esophageal perforation with abscess formation was the most likely diagnosis. Surgical exploration was the necessary intervention for this patient's acute symptoms as both a diagnostic and therapeutic tool. The diagnosis of ectopic thyroid tissue from pathology of the excised cystic lesion was unexpected, as the location of tissue and the painful presentation are not typical characteristics of ectopic thyroid tissue. Management of the this case illustrates the dilemma faced in determining the appropriate work up for a patient, without compromising the patient's safety.

**CONCLUSION:** Though painful presentation and this case's location are rare, ectopic thyroid tissue should be included in the differential diagnosis of point tenderness with an associated lesion on imaging.

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## 1. Introduction

Ectopic thyroid is the most common form of thyroid dysgenesis, but its presentation varies. Common presentations of ectopic thyroid include incidental, asymptomatic, functional hypothyroidism, and mass effect. This case presents a painful ectopic thyroid, an unusual presentation, in an atypical location. With the clinical background of the patient's subjective feeling of a fish bone stuck in her throat, her acute presentation, and inconclusive imaging, this case proved to be a diagnostic dilemma.

## 2. Presentation of case

A 61-year-old female from Myanmar presented with a two day history of left throat pain, tenderness, dysphagia and odynophagia that had acutely worsened. She swallowed a fish bone that she believed became lodged in her throat. Her acute left sided throat pain radiated to the left jaw. She had no prior history of dysphagia or odynophagia. She had no clinical signs or symptoms of hyperthyroid or hypothyroid disease and her review of systems was

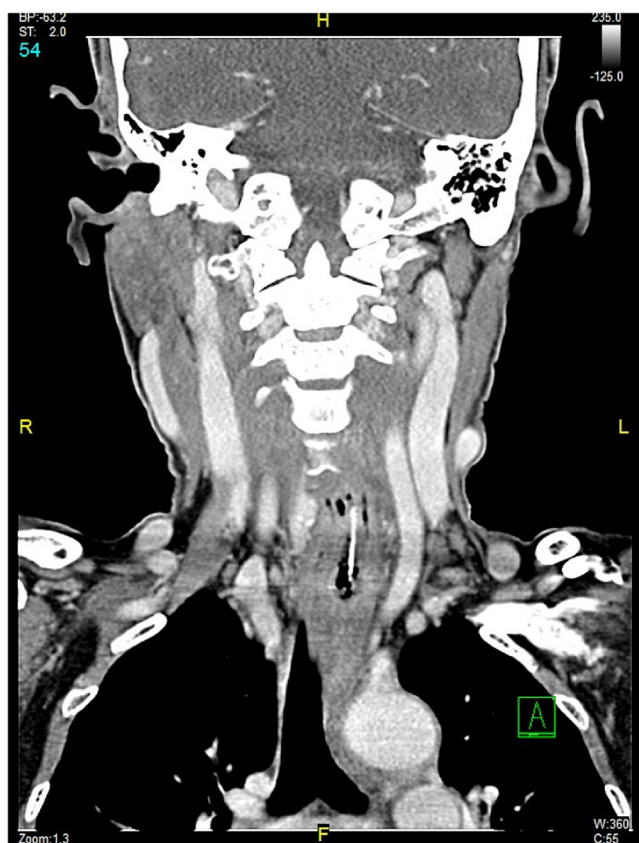
otherwise negative. There was no significant past medical history or surgeries, and no home medications. She did not drink, smoke, or use drugs. The patient's vitals were all within the normal limits, though she was visibly uncomfortable and in pain. Her neck was supple with a full range of motion. Left supraclavicular lymph nodes were tender to palpation, but not enlarged. There was pinpoint tenderness of the left neck medial to the sternocleidomastoid (SCM). No crepitus of the neck was appreciated. The remainder of the exam was normal. Her laboratory results were within normal limits except for leukocytosis of 13,100  $\mu$ L.

CT scan of the neck showed the presence of a radiopaque linear foreign body measuring 2.9 cm in length and 0.02 cm in width, located in the anterior wall of the cervical esophagus at the level of C6 to T1 with air surrounding the lesion. A periesophageal abscess post esophageal perforation was a likely explanation. An enlarged lymph node was seen adjacent to the left lobe of the thyroid. Fig. 1.

Multiple esophagogastroduodenoscopies (EGDs) were then performed to attempt to locate the foreign body and esophageal perforation. The first EGD showed slight, left lateral bulging of the esophagus, however, the remainder of the exam was normal and negative for foreign bodies. A repeat EGD with a neonatal scope found an umbilicated lesion 3 cm proximal to the upper esophageal sphincter. Both exams were inconclusive for the presence of a foreign body, but a periesophageal abscess seemed likely.

\* Corresponding author.

E-mail address: [Erika.allen@ttuhsc.edu](mailto:Erika.allen@ttuhsc.edu) (E. Allen).

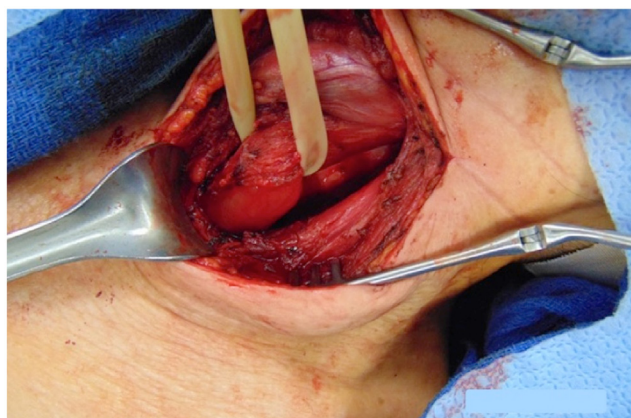


**Fig. 1.** CT Scan of neck with contrast showing the radiopaque foreign body involving the cervical esophagus.

The decision was made not to obtain a gastrografin study due to the acute nature of the patient's increased pain and point tenderness, as well as the likelihood of a periesophageal abscess. A periesophageal abscess creating point tenderness, dysphagia, and odynophagia would need acute intervention. Exploratory laparotomy would serve this patient both diagnostically and therapeutically. At this point, the differential diagnosis included a periesophageal abscess secondary to esophageal perforation, an ingested fish bone embedded within the wall of the esophagus, inflamed ectopic thyroid tissue, or malignancy.

Surgical exploration of the esophagus revealed a multinodular cystic lesion located on the anterior lateral cervical esophagus. The mass was freed from the esophageal adventitia without difficulty. There was no sign of a connection to the esophageal lumen indicating esophageal perforation. **Fig. 2.** A lymph node over the anterior aspect of the cervical esophagus was also removed. The thyroid appeared normal. No foreign body was located. After removing the mass, the esophagus was clamped distally and contrast was introduced intraoperatively. There was no extravasation from the esophagus under fluoroscopy. **Fig. 3.** The day after surgery, she received another barium swallow study before discharge with no extravasation identified. **Fig. 4.**

The lesion was reported to be multinodular thyroid parenchyma with chronic inflammation and no evidence of malignancy. **Fig. 5.** No foreign body was located. The lymph node was a reactive lymph node without evidence of malignancy. Due to the chronic inflammation described in the pathology report, the radiopaque finding on CT scan was most likely calcifications from the chronic inflammation.



**Fig. 2.** Smooth esophagus after removal of cystic lesion. No connection to the esophageal lumen is present.



**Fig. 3.** Multinodular cystic mass after surgical removal.

The patient's pain was immediately relieved after surgery and she went home the following day. She followed up in the outpatient setting and had no complaints (**Fig. 6**).

### 3. Discussion

This case was diagnostically challenging. The acute nature of the patient's presentation and potential for esophageal perforation with abscess formation forced the need for exploratory laparotomy. The diagnosis of ectopic thyroid tissue was surprising, as it was not high on the differential. Time was not devoted to a complete thyroid work up, as delay in the treatment of what was originally thought to be an esophageal perforation with abscess formation could have been harmful to the patient.

Ingested fish bones are one of the most common foreign bodies to become embedded in the esophagus, leading to esophageal perforations and abscesses [1]. The fish bones usually pass through the esophagus without incident [2,3], but if a bone is caught in the esophagus, the cervical esophagus or the thoracic esophagus around the aortic arch are the most common locations [3]. These foreign bodies are not typically visible on EGD and CT scans are considered the most sensitive modality for diagnosis. This case demonstrated these characteristics, as the EGDs were negative for foreign body location and the CT scan demonstrated a lesion in the shape of a thin fish bone. These findings together with the patient's history and acute presentation made esophageal perforation with



Fig. 4. Esophageal swallow study with no extravasation.

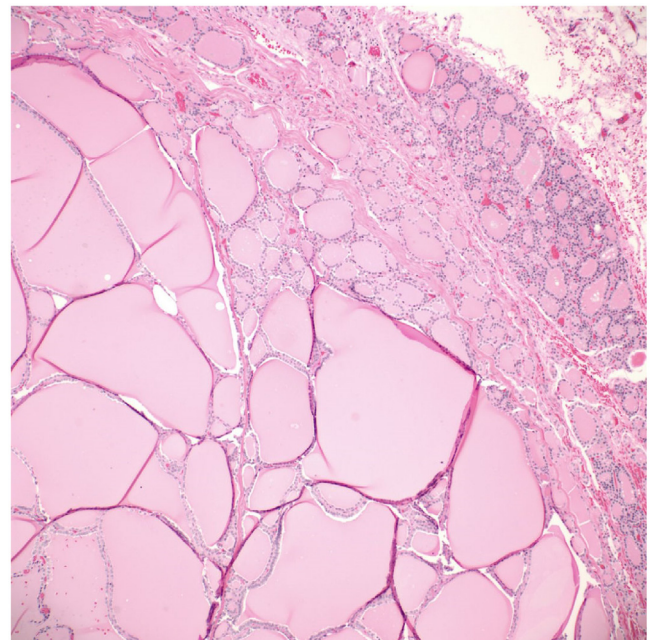


Fig. 5. Thyroid parenchyma with chronic inflammation and no evidence of malignancy.

abscess formation the most likely diagnosis. The final diagnosis of ectopic thyroid tissue makes the patient’s history of an ingested fish bone either coincidental or an inciting event, by causing aggravation of the ectopic thyroid tissue from local inflammation caused by a temporary embedment of the fish bone in the esophagus.

Ectopic thyroid is the most common form of thyroid dysgenesis. Thyroid development begins at the base of the tongue and then follows the thyroglossal duct down to the anterior cervical neck between the second and fourth tracheal cartilages [4,5]. Any change in this developmental progression can lead to the presence of an ectopic thyroid. Many ectopic thyroid locations have been reported before, including the mediastinum, heart, adrenal glands, and ovaries, among other locations [4–7]. Ectopic thyroid is most commonly asymptomatic, with an incidental discovery, however,

hyperthyroidism, hypothyroidism, and thyroid cancer can lead to the discovery of the ectopic thyroid tissue.

This case of ectopic thyroid is interesting because the location and presentation are both unique. Thyroid tissue located in the lateral neck, midline of the SCM is not typical, especially without a connection to the normal thyroid gland. The most interesting aspect of this case is that the patient’s presentation was due to point tenderness and pain. Ectopic thyroid has been reported to cause mass effect, and depending on location and malignant potential, dysphagia [7,8], but not to the extent of creating point tenderness. Ectopic thyroid was originally not high on the differential because there were no indications for thyroid disease, the lesion did not appear to be thyroid tissue on imaging, the thyroid gland was normal, and as stated before, the location and presentation did not match the diagnosis of typical ectopic thyroid tissue.

Despite the interesting result of this patient’s acute presentation, management would not have changed if ectopic thyroid was suspected in the beginning. As CT scans are the imaging modal-

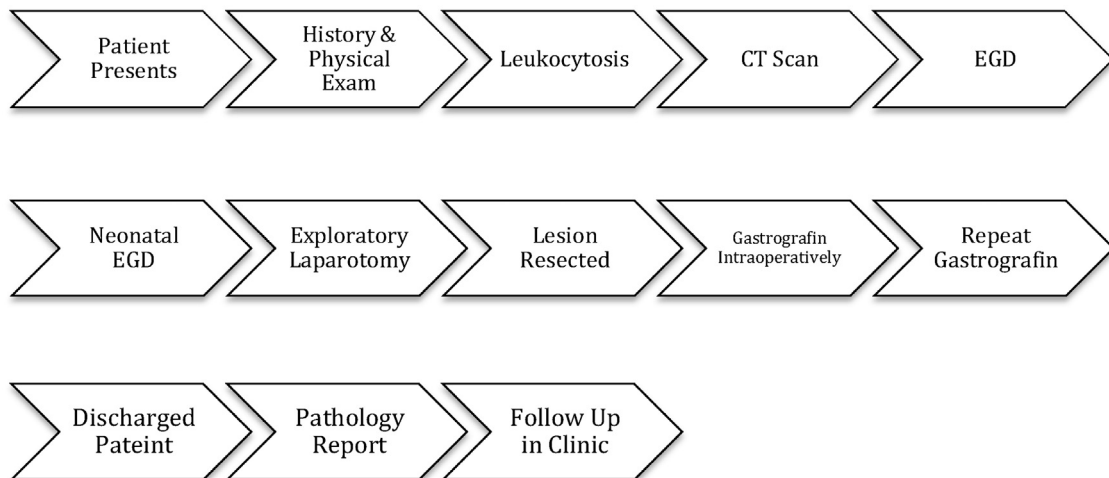


Fig. 6. Timeline of Events.

ity of choice for ingested fish bones, the imaging obtained from this patient was appropriate. The CT scan presented a hyperdense, linear lesion that matched the patient's description of an ingested foreign body. The location of the lesion on imaging was outside of typical locations for ectopic thyroid. Radiologists consider the base of the tongue, hyoid bone, midline infrahyoid portion of neck and lateral part of the neck as reference landmarks for ectopic thyroid [9]. The next step in care is to directly visualize the lesion. The inconclusive results of the EGDs and critical clinical picture of the patient, prompted the need for surgery. During surgery, visualization of all structures in the operating field and knowledge of anatomy is necessary to be able to identify abnormal findings. Normal anatomy was noted in this case, except for the cystic lesion. Removal of the multilobular cyst was necessary regardless of its pathology because of the patient's pain and dysphagia. General consensus for management of symptomatic ectopic thyroid in the neck, as in this case, is surgical removal [10]. Had this tissue been the only thyroid tissue this patient possessed, the most significant sequela this patient would face would be hormone replacement therapy.

#### 4. Conclusion

Though this painful presentation of ectopic thyroid tissue is rare [7], ectopic thyroid should be included as a differential diagnosis of point tenderness with an associated mass or lesion on imaging in any location. This case was a diagnostic dilemma that demonstrated the need to perform due diligence in the work up of a patient and remembering that surgical exploration can be a necessary tool in the work up of a patient whose acute presentation requires intervention.

#### Conflict of interest

There are no conflicts of interest.

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#### Ethical approval

This case report.

#### Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

#### Author contribution

Study Concept and Design—Subhasis Misra, MD, Masoud Alzeerah, MD, Erika Allen.

Data Analysis and Interpretation—Subhasis Misra, MD, Erika Allen, Stevenson Tsaio MD.

Writing the paper—Erika Allen, Subhasis Misra, MD, Stevenson Tsaio MD.

Editing the paper—Nail Aydin, MD, Subhasis Misra, MD.

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#### Guarantor

Subhasis Misra, MD.

#### References

- [1] L.C. Knight, T.H. Lesser, Fish bones in the throat, *Arch. Emerg. Med.* 6 (March (1)) (1989) 13–16.
- [2] G. Bathla, L.L. Teo, S. Dhanda, Pictorial essay: Complications of a swallowed fish bone, *Indian J. Radiol. Imaging* 21 (1) (2011) 63.
- [3] H. Chiu, J. Hergens Li, J. Chen, Penetration of esophageal wall by a fish bone, *J. Intern. Med. Taiwan* 17 (December (6)) (2006) 298–301.
- [4] N.A. Ibrahim, I.O. Fadeyibi, Ectopic thyroid: etiology, pathology and management, *Hormones (Athens, Greece)* 10 (October (4)) (2011) 261.
- [5] W. Zheng, J. Tan, T. Liu, Coexistence of non-functional ectopic thyroid tissue and a normal thyroid: a case report, *Exp. Ther. Med.* 6 (October (4)) (2013) 1059–1061.
- [6] J. Wang, J. Fang, Ectopic thyroid mass in the left lateral neck and anterior mediastinum: a case report, *J. Med. Case Rep.* 8 (1) (2014) 351.
- [7] C. Adelchi, P. Mara, L. Melissa, A. De Stefano, M. Cesare, Ectopic thyroid tissue in the head and neck: a case series, *BMC Res. Notes* 6 (November) (2016) 7.
- [8] T. Nguyen, S. Misra, Undifferentiated anaplastic sarcomatoid carcinoma of the thyroid: is surgical resection worth it? A case report and review of literature, *Endocrinol. Metab. Syndr.* 29 (2015 June) 2015.
- [9] David A. Zander, Wendy R.K. Smoker, Imaging of Ectopic Thyroid Tissue and Thyroglossal Duct Cysts1 (2016).
- [10] George Nousseios, Panagiotis Anagnostis, Dimitrios G. Goulis, Dimitrios Lappas, Konstantinos Natsis Ectopic thyroid tissue: anatomical, clinical, and surgical implications of a rare entity, *Eur. J. Endocrinol.* 165 (September (3)) (2011) 375–382.

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