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FIGURE 1



A 45-year-old woman presents to the ED with acute onset of throat pain after she reportedly swallowed a chicken bone while eating dinner. A lateral radiograph of the soft tissues of the neck is obtained (Figure 1).

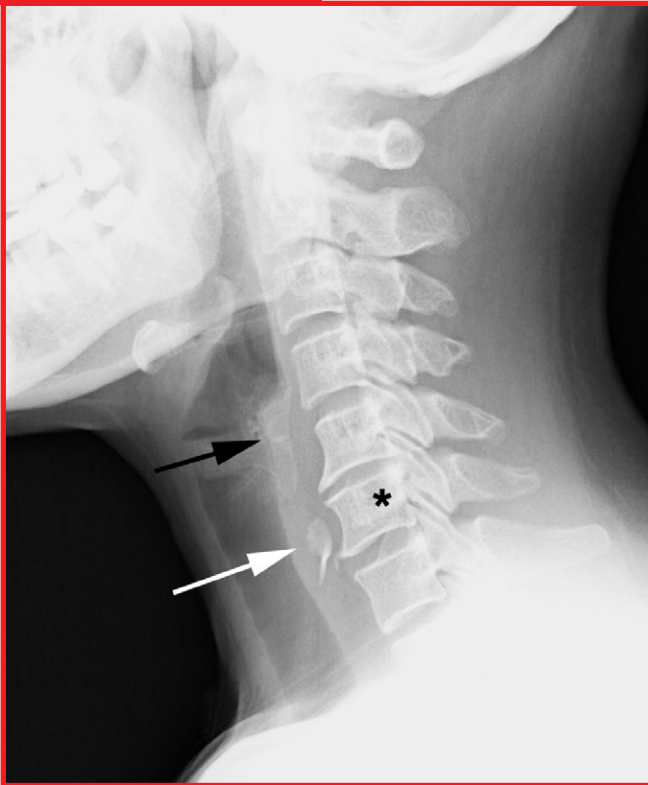
**What is the abnormality?**

**Are additional imaging studies indicated? If so, which study would you recommend?**

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FIGURE 2



## ANSWER

The lateral radiograph of the neck (Figure 2) demonstrates an irregular calcified foreign body with density (white arrow) in the prevertebral soft tissues of the neck anterior to the C6 vertebral body (black asterisk). This calcification is clearly separate from the normal thyroid cartilage (black arrow). Based on the provided history, this most likely represents an impacted chicken bone within the esophagus at the level of the pharyngoesophageal junction. The pharyngoesophageal junction typically occurs at the level of the C5-C6 vertebral bodies and is a site of physiologic narrowing. It is therefore one of the typical sites where an ingested foreign body may become lodged.

Radiography is typically the first imaging modality performed in cases of suspected esophageal foreign bodies. However, radiographs may not detect small and partially calcified bones. In fact, in a series of 76 patients with suspected impaction of fish bones in the esophagus, the reported sensitivity of radiography was only 55%.<sup>1</sup> Barium esophagography performed under fluoroscopy has traditionally been the next

FIGURE 3

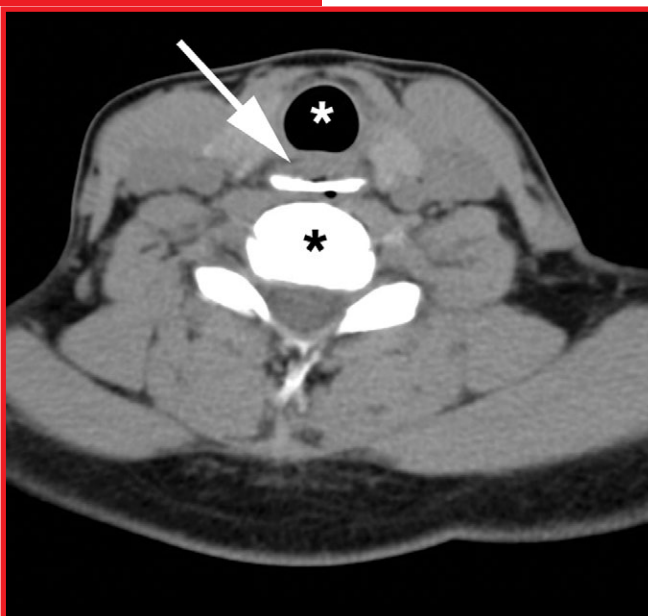
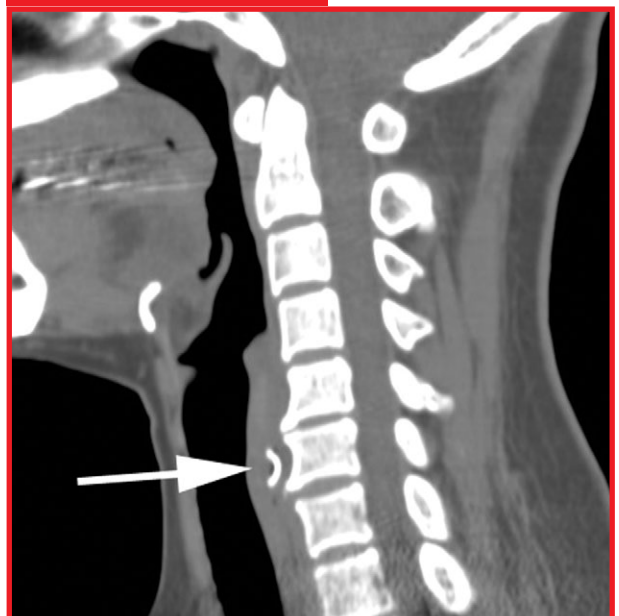


FIGURE 4



study performed for evaluation of suspected foreign body. However, CT has been utilized increasingly for the detection of radiographically occult esophageal foreign bodies, with sensitivity reported as high as 100%.<sup>1</sup> CT is also useful for precise 3-D localization and the detection of esophageal perforation and any associated infection.<sup>2</sup> When compared to barium esophagography, CT requires less time to perform/interpret and is more widely available in ED practices.

An axial CT image obtained in this patient (Figure 3) confirms the presence of a calcified foreign body in the esophagus without evidence of perforation. Although it may be difficult to directly visualize due to its thin walls, the esophagus (white arrow) is located between the trachea (white asterisk) and the vertebral body (black asterisk). Figure 4 is a sagittal reformat from the same CT ex-

amination viewed with a wide window (bone window). It demonstrates the calcification to be consistent with cortical bone (white arrow). Following the CT, a fragment of chicken bone was recovered by endoscopy.

Due to the morbidity that may be associated with failure to diagnose esophageal foreign body—as well as the potential complications of direct visualization of the esophagus with esophagoscopy—CT should be considered in patients who present with suspected foreign body and have negative radiographs. **EM**

#### REFERENCES

1. Akazawa Y, Watanabe S, Nobukiyo S, et al. The management of possible fishbone ingestion. *Auris Nasus Larynx*. 2004;31(4):413-416.
2. Shihada R, Goldsher M, Sbeit S, Luntz M. Three-dimensional computed tomography for detection and management of ingested foreign bodies. *Ear Nose Throat J*. 2009;88(5): 910-911.