A Case of a Migrating Foreign Body in the Esophagus of a 65-Year-Old Woman

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This case report was written when Dr. Ramos was a resident in training under the Department of Otorhinolaryngology- Head and Neck Surgery of the Ospital ng Maynila Medical Center.

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ABSTRACT

Objective: To report a case of a migrating foreign body in the esophagus of a 65-year-old woman: its clinical presentation, diagnosis and management.

Methods:

Design:	Case Report
Setting:	Tertiary Government Training Hospital
Patient:	One

Results: A 65-year-old woman consulted with a history of foreign body ingestion (chicken bone). Initial imaging confirmed the presence of the ingested object. Rigid esophagoscopy did not find the foreign body. Subsequent neck computed tomography (CT) scan revealed a hyperdense, spindle-shaped object situated lateral to the left esophagus. The foreign object was successfully retrieved via a lateral pharyngotomy approach without complication.

Conclusion: Migrating foreign bodies may initially present with minimal or nonspecific symptoms such as foreign body sensation or dysphagia but can progress to more overt signs. In such cases, CT offers superior localization compared to radiographs and is essential in guiding definitive surgical management to facilitate safe and effective foreign body retrieval. Rigid esophagoscopy remains a valuable tool for confirming migration and evaluating for mucosal injury or perforation. When endoscopic retrieval is unsuccessful, timely surgical intervention is critical to prevent serious complications.

Keywords: *foreign-body migration; esophagoscopy; lateral pharyngotomy*

Foreign body ingestion in adults is relatively uncommon and typically associated with predisposing factors such as esophageal strictures, poor dentition, alcohol intoxication or consumption of improperly prepared food.[1,2] While most ingested foreign bodies either pass spontaneously or are retrieved endoscopically, sharp or pointed objects such as fish bones,

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chicken bones, or metallic wires can penetrate the esophageal wall and migrate into extraluminal cervical or mediastinal spaces, leading to serious complications.[2,3] Extraluminal migration of ingested foreign bodies in adults is rare and existing literature consists of isolated case reports or small case series.[1,2] Known cases are often associated with failure to recall the ingested foreign object until imaging studies reveal its presence which poses a diagnostic challenge.[2] This report aims to describe the clinical presentation, diagnostic evaluation and surgical management of a case of extraluminal migration of an esophageal foreign body in an adult. It highlights the diagnostic challenges posed by vague clinical histories and contributes to the limited literature by emphasizing the critical role of CT in facilitating prompt and appropriate surgical intervention.

CASE REPORT

A 65-year-old woman consulted with a history of foreign body ingestion. Five days prior to consultation, she reportedly swallowed a chicken bone during dinner, afterwhich she developed odynophagia localized to the left side of the neck, accompanied by pooling of saliva. There was no bleeding per os nor dyspnea. Medical consultation was sought three days later, and a lateral soft tissue neck radiograph revealed a linear radiopaque object at the level of C6 on the left. *(Figure 1A, B)* She was admitted to another institution for esophagoscopy with an impression of foreign body ingestion. Although the odynophagia initially improved during admission, the foreign body sensation persisted. However, rigid esophagoscopy did not reveal any foreign body. Her symptoms persisted postoperatively, and she was started on oral antibiotics and analgesics and referred to us for further evaluation and management.

Upon admission at our institution, a repeat soft tissue lateral (STL) radiograph of the neck revealed the linear radiopaque object with associated soft tissue thickening at the site of lodgment, suggestive of possible extraluminal migration. *(Figure 1C, D)* Based on the radiographic appearance and density, a metallic foreign body was considered. The patient was started on intravenous antibiotics and corticosteroids in preparation for a repeat rigid esophagoscopy with foreign body removal once the soft tissue swelling had subsided. On the fourth hospital day, repeat neck STL revealed persistence of the previously seen foreign object at the same level without associated soft tissue swelling. *(Figure 1E, F)* A repeat rigid esophagoscopy was performed on the fifth hospital day, but no foreign body was visualized. A contrast-enhanced CT scan of the neck revealed a linear, hyperdense, spindle-shaped object lateral to the left esophagus. *(Figure 2)* Surgical removal via lateral pharyngotomy was subsequently performed. Intraoperatively, a thin steel wire was retrieved, *(Fig. 3A, B)* which had pierced the left cricothyroid muscle. Postoperatively, the patient reported immediate relief of odynophagia and foreign body sensation. The rest of her hospital course was unremarkable.

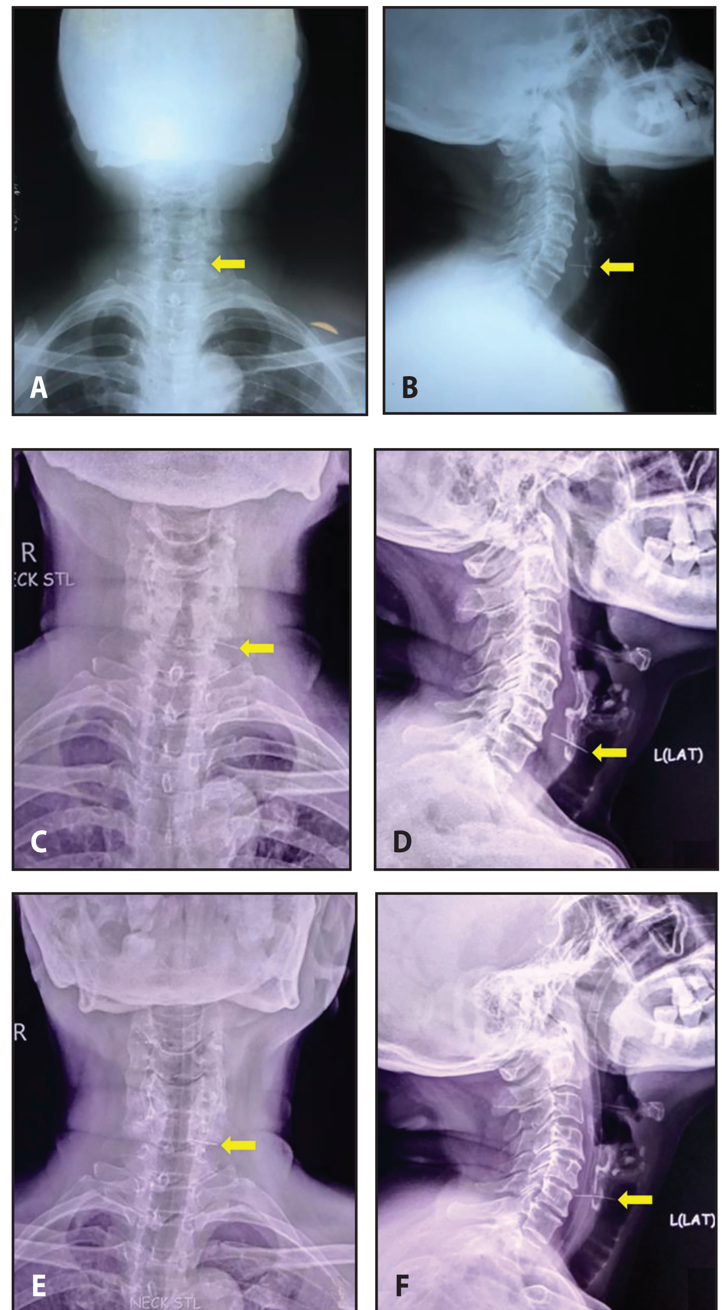


Figure 1. Serial soft tissue neck radiographs. **A.** antero-posterior, and **B.** lateral, taken two days post-ingestion; **C.** antero-posterior and **D.** lateral, obtained on the day of admission; **E.** antero- posterior, and **F.** lateral, taken on the fourth hospital day. Note the persistent metallic spindle- shaped foreign body (arrows) lodged in the prevertebral region at the level of the left C6 vertebra

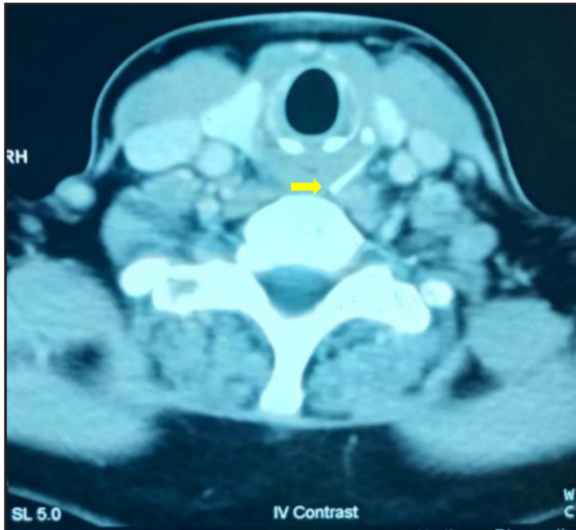
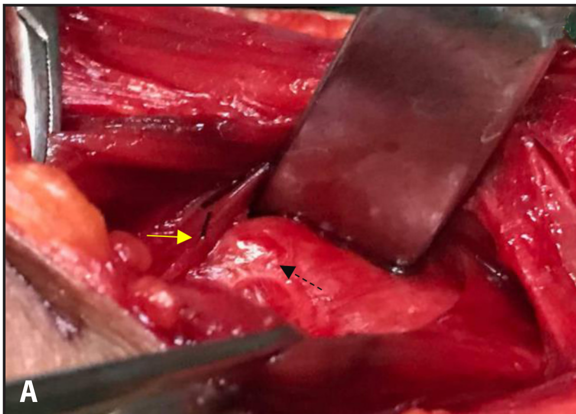


Figure 2. Contrast-enhanced CT scan of the neck at the level of C6 vertebrae, showing a hyperdense, spindle-shaped foreign body (arrow) lateral to the left side of the esophagus. The object lies in close proximity to the left great vessels, seen as enhancing structures.



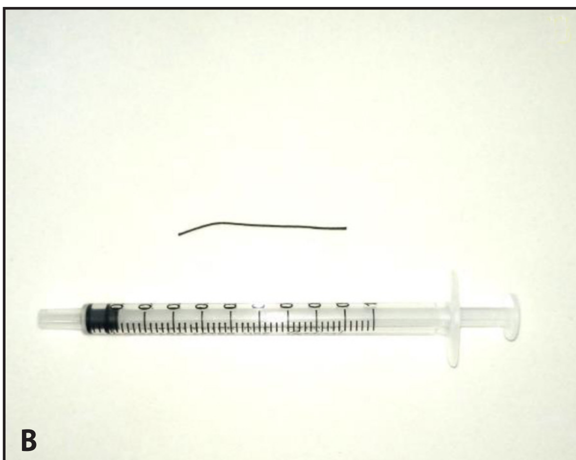


Figure 3. A. Intraoperative findings showing spindle-shaped foreign body (solid arrow) piercing the strap muscle above the superior lobe of the thyroid gland (dashed arrow) following a lateral pharyngotomy incision, left side; and **B.** retrieved foreign body—a steel wire measuring approximately 3.5 cm.

DISCUSSION

In the Philippines, the most commonly ingested foreign bodies are coins (63.5%), food items (18.1%) and dentures (11.5%), with the cricopharyngeal level being the most frequent site of impaction.[4] Flexible endoscopy remains the best modality for both diagnosis and treatment, with a reported success rate exceeding 95% and complication rates ranging from 0% to 5%.[5] In cases where the foreign bodies cannot be identified or retrieved endoscopically, the possibility of extraluminal migration should be considered.[2,3] Plain radiographs are typically used as the initial screening tool, offering information on the object's location, size and shape. However, their sensitivity is limited, particularly for radiolucent or overlapping objects,[6] with false-negative rates reaching up to 47%.[7] In our patient, initial soft tissue neck radiograph revealed a linear radiopaque object at the level of C6. Despite this, rigid esophagoscopy did not locate the FB, highlighting the limitation of plain films. Additional findings such as subcutaneous emphysema or mediastinal air may also suggest mucosal perforation, but these were not present in our patient.[7]

Computed tomography (CT) scans provide superior diagnostic accuracy, with reported sensitivity of 90%–100% and specificity of 93.7%–100%,[8] and are especially useful in localizing foreign bodies and aiding surgical planning.[9] In our case, persistent symptoms and inconclusive endoscopy prompted CT evaluation, raising suspicion for FB migration.

Migrating FBs are those that penetrate the esophageal mucosa and embed within deeper layers. While initially asymptomatic, most patients eventually present with symptoms such as FB sensation, odynophagia, fever or neck swelling[2,3] as occurred in our case. Sharp and horizontally oriented objects pose a greater risk of perforation.[10] Reported migration rates range from 7.3% to 13% in published case series,[11,12] and can result in severe complications such as deep neck infections or vascular injury.[2,3,13] Several mechanisms for migration have been proposed, including cervical muscle activity and strong pharyngeal contractions during swallowing,[14] or inadvertent pushing of the FB during attempted removal or swallowing.[15] These mechanisms may have contributed to our patient's clinical course.

When endoscopy fails to retrieve the FB, but imaging confirms its presence, inpatient care with antibiotics and anti-inflammatory agents is advised.[9] Serial radiographs are helpful for monitoring,[4,7,9] and once CT confirms extraluminal migration,[5,8] surgical removal becomes necessary to prevent life-threatening complications.

In conclusion, migrating esophageal foreign bodies in adults are rare and often present with nonspecific symptoms, necessitating a

high index of clinical suspicion particularly in cases involving sharp or metallic objects. While rigid esophagoscopy remains a valuable diagnostic and therapeutic tool for confirming foreign body migration and assessing mucosal injury or perforation, its limitations should be acknowledged when migration is suspected. In such cases, neck CT provides superior localization compared to radiographs and plays a pivotal role in surgical planning to ensure safe and effective foreign body removal. When endoscopic retrieval is unsuccessful, timely surgical intervention such as lateral pharyngotomy is critical to prevent serious complications.

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