CASE REPORT

Accidentally Ingested Foreign Body Lodged in Thyroid Lobe: A Rare Presentation

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Abstract

Aim: To provide a better understanding of the management of foreign body ingestion.

Background: This case report is a testament to the wonder that is the human body, where a sharp metal wire pierced through the esophageal wall and got lodged in the thyroid gland, with the esophagus completely healed following the trauma. Thus, it proved to be a challenging case in terms of diagnosis and management for the team of otolaryngologists.

Case description: A 60-year-old female patient reported to the ENT outpatient department with presenting complaints of foreign body sensation in the throat since the last 15 days. Videolaryngoscopy of the patient showed a normal glottis with bilateral normal vocal cords and mobility. The patient was taken for cricopharyngoscopy and esophagoscopy with the aim of visualizing the foreign body and its removal under general anesthesia, which was normal. Computed tomography (CT) scan of the neck showed the foreign body, which was then removed from behind the right superior thyroid pole under C-arm guidance.

Conclusion: This case proves that both clinical correlation and radiological investigation go hand in hand in the management of foreign body ingestion, and one is incomplete without the other.

Clinical significance: The confounding nature of the case is what makes it novel. The unusual migration of the foreign body, along with the atypical symptoms, proved to be a challenge for the treating surgeons.

Keywords: Case report, Esophageal foreign bodies, Foreign body esophagus, Ingested foreign body.

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Background

Accidental ingestion of foreign bodies is a common medical occurrence, frequently encountered in emergency departments. While it can affect individuals of any age, it is particularly prevalent among children and adults with underlying conditions such as psychiatric disorders, dentures, or neurological impairments. The majority of ingested foreign bodies pass spontaneously through the gastrointestinal (GI) tract without incident. However, some objects, especially sharp or large ones, can become impacted in various parts of the aerodigestive tract, leading to symptoms ranging from discomfort to severe complications such as perforation, obstruction, or infection.

Common sites of impaction include the tonsils, base of the tongue, vallecula, pyriform sinus, and esophagus. While esophageal impaction is relatively frequent, the extraluminal migration of an ingested foreign body into deep neck structures, such as the thyroid gland, is an extremely rare and diagnostically challenging event. Such occurrences are sparsely reported in medical literature and typically involve sharp objects like fish bones or needles that perforate the esophageal wall. This case report highlights an exceptionally unusual presentation of an accidentally ingested stapler pin lodging in the thyroid lobe, underscoring the diverse and sometimes unexpected clinical manifestations of foreign body ingestions.

Case Description

A 60-year-old female patient reported to the ENT outpatient department with presenting complaints of foreign body sensation in the throat since the last 15 days, following an alleged history of foreign body (stapler pin/metal wire) ingestion. She had only slight discomfort in her throat while swallowing food, but she had no complaints of painful swallowing. There were no complaints of nausea or vomiting post the incident, oral bleeding, hematemesis, respiratory distress, or stridor. Patient did not have complaints of any external injury to the neck, neck swelling, or neck pain in the past. The patient had been afebrile during the whole duration.

On examination, the neck was normal with no evidence of swelling or abscess formation. No external scars and lacerations were present, and there was no tenderness. The oral cavity did not show any evidence of trauma or foreign body impaction in the bilateral tonsillar fossa. The rest ENT examination was within normal limits.

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Videolaryngoscopy of the patient showed a normal glottis with bilateral normal vocal cords and mobility. There was minimal pooling of saliva. However, no evidence of a foreign body was seen in the valleculae and pyriform fossae. X-ray neck anteroposterior (AP) and lateral views showed a linear radio-opaque thin wire-like foreign body in the esophagus extending laterally to the para-esophageal region corresponding to C4–C6 vertebral levels (Fig. 1).

Upper GI scopy was done for the patient in an outside center, which was reported as normal.

The patient was taken for cricopharyngoscopy and esophagoscopy with the aim of visualizing the foreign body and its removal under general anesthesia on an emergency basis. Intraoperatively, cricopharyngoscopy revealed a normal cricopharynx and postcricoid region. The upper esophagus was visualized by passing a rigid 0° endoscope, and it revealed a normal upper esophageal anatomy with no evidence of a foreign body. There was no sign of trauma, blood clots, or slough in the pyriform fossae and esophageal lumen, and it appeared normal (Fig. 2).

Patient was counseled and taken up for a computed tomography (CT) scan of the neck with contrast.

The CT scan showed a linear hyperdense thin wire-like structure of average attenuation 1500–1550 HU is seen in the right side of the neck, suggestive of a foreign body. It was seen at the level of the C5 and C6 vertebrae, piercing the right lobe of the thyroid. The anteroinferior end of the foreign body was protruding outside the capsule of the right carotid artery was seen away from the foreign body. The right thyroid lobe shows heterogeneous attenuation. The posterosuperior end of the foreign body was present at the level of the cricoarytenoid joint. It was seen indenting the right posterolateral wall of the hypopharynx. There was no obvious extravasation of orally administered positive contrast. There was no emphysema in the neck or pneumomediastinum. There was no significant fat stranding in the soft tissues of the neck. The epiglottis preepiglottic space, aryepiglottic folds, supraglottic, glottic, and infraglottic larynx appeared normal (Fig. 3).

The patient was taken up for neck exploration with foreign body removal under general anesthesia.

Post–preanesthetic checkup patient was taken up for the procedure. A horizontal 6 cm incision was taken along the neck crease at the lower border of thyroid cartilage, 1 cm above the cricoid cartilage, from the anterior margin of the right sternocleidomastoid muscle to 1 cm beyond the midline.

Superior and inferior-based subplatysmal flaps were elevated. Strap muscles were resected to reach the superior pole of the right thyroid lobe. The superior laryngeal nerve was identified and preserved. Multiple C-arm X-ray shoots were taken to confirm and reassess the position of the foreign body (Figs 4 and 5).

The foreign body, a thin metallic black colored wire dimensions 3 and 0.3 cm (length × thickness), was visualized embedded in the superior pole of the right lobe of the thyroid gland and was removed *in toto* (Fig. 6).

Postoperative videolaryngoscopy was done for the patient which was normal.

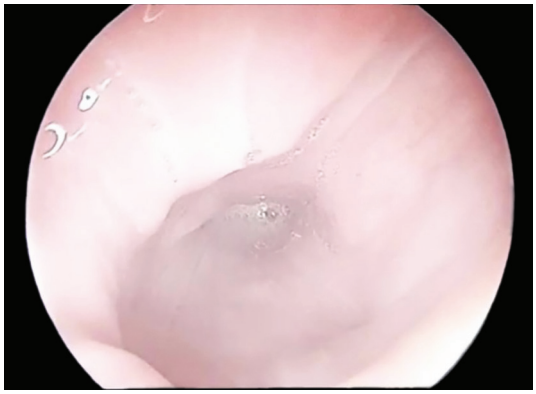

Fig. 2: Esophagoscopy showing normal esophageal lumen

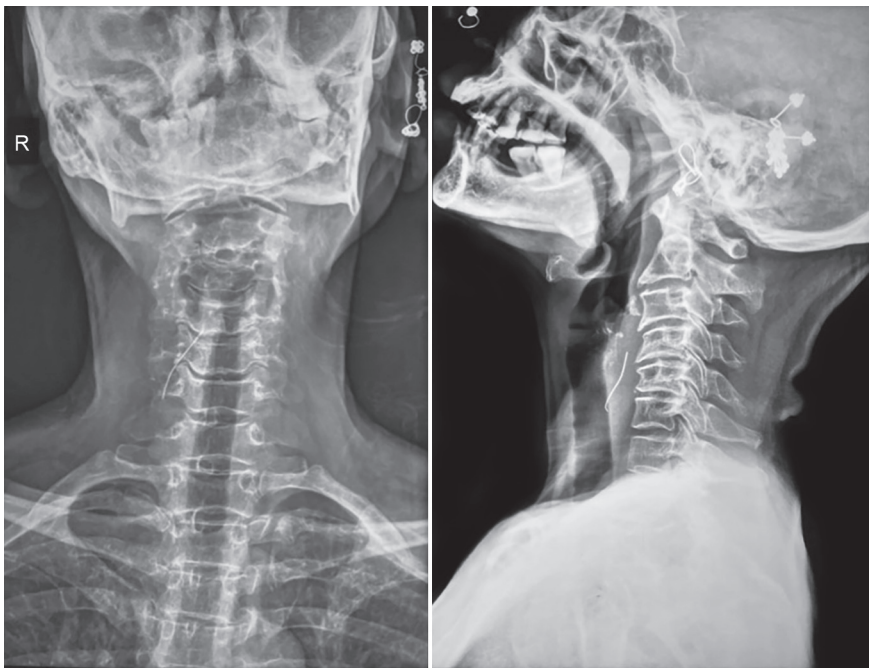

Fig. 1: X-ray neck AP and lateral views

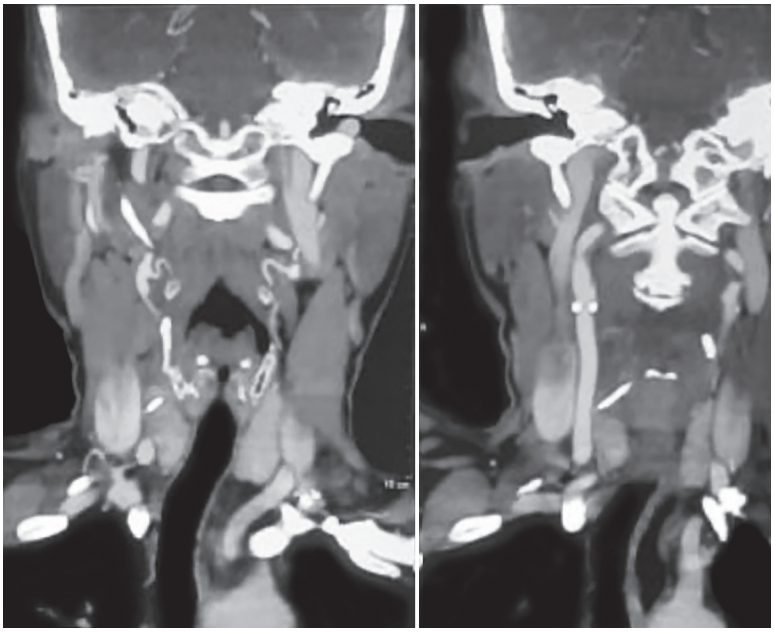

Fig. 3: Contrast-enhanced computed tomography neck showing a foreign body

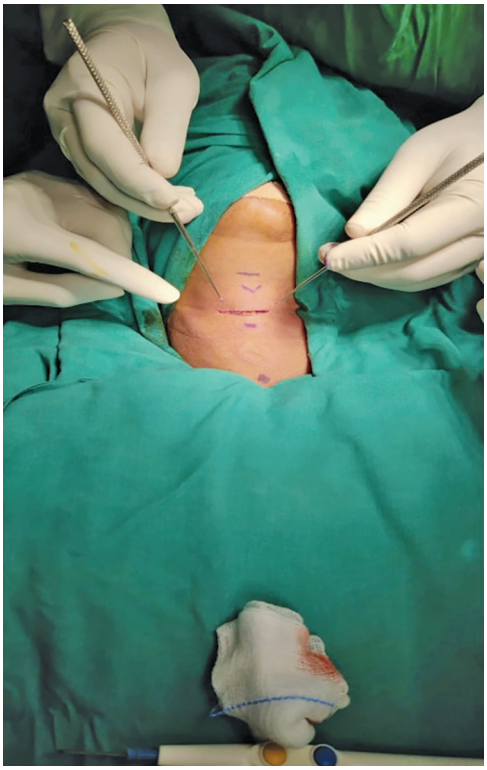

Fig. 4: Horizontal skin incision at the lower border of the thyroid cartilage

Discussion

This case report details the extraordinary occurrence of an accidentally ingested metal wire migrating to and lodging within the right thyroid lobe, a presentation that is exceptionally rare in medical literature. While foreign body ingestion is a common clinical emergency, particularly in children and individuals with certain risk factors, the vast majority of ingested objects either pass spontaneously through the GI tract or become impacted in typical locations such as the tonsils, base of the tongue, vallecula, pyriform sinus, or esophagus. Extraluminal migration into the neck, and specifically into the thyroid gland, is an infrequent event, with most reported cases involving sharp objects like fish bones, needles, or dentures that perforate the esophageal wall.

The precise mechanism of migration in such cases is believed to involve a combination of factors. Sharp, linear foreign bodies possess the inherent ability to perforate the esophageal mucosa. Once perforation occurs, the continuous movements of the neck muscles and viscera during swallowing and head movements can facilitate the object's gradual migration into adjacent soft tissues. In this instance, a metal wire, though a less common culprit compared to fish bones, possesses the requisite sharp edges to likely initiate such a perforation and subsequent journey into the thyroid parenchyma.

The diagnostic journey in this case underscores significant challenges. The patient's initial symptoms were remarkably subtle—a mere foreign body sensation and slight discomfort during swallowing, notably lacking more severe signs like painful swallowing, severe respiratory distress, or bleeding commonly associated with esophageal perforations. This atypical and mild presentation contributed to the initial difficulty in diagnosis. Standard initial investigations, including a routine ENT examination, videolaryngoscopy, and even upper GI endoscopy, failed to locate the foreign body. This highlights the limitations of these methods in identifying objects that have migrated beyond the esophageal lumen or are deeply embedded in surrounding tissues. As observed in similar rare cases, a CT scan of the neck proved to be the indispensable diagnostic tool, accurately localizing the metallic foreign body within the right thyroid lobe and delineating its proximity to vital vascular structures, which was crucial for surgical planning. Plain X-rays, while useful as an initial screening tool, can sometimes be misleading or insufficient in precisely pinpointing migrated objects, especially when obscured by other

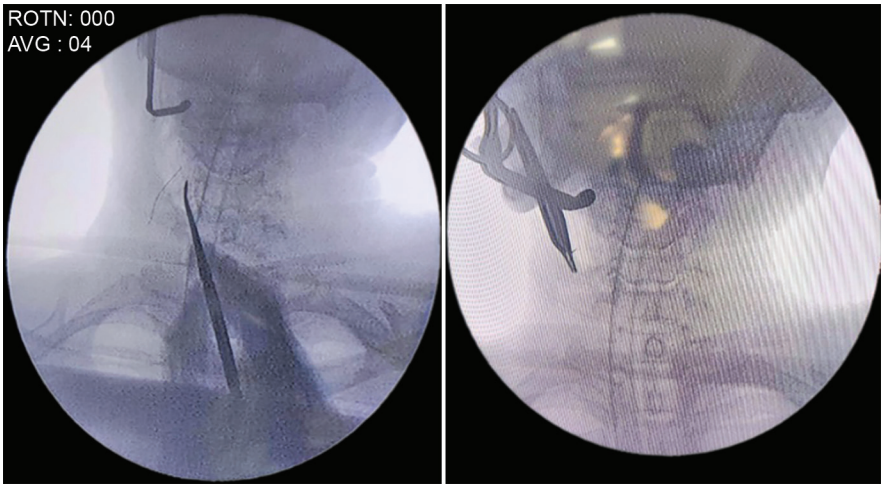

Fig. 5: Intraoperative C-arm photos showing a foreign body

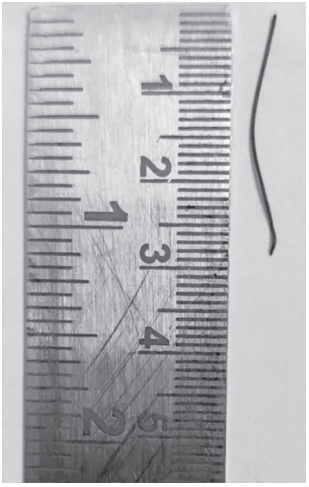

Fig. 6: Foreign body, a metal wire removed in toto

neck structures or when the foreign body is partially or completely extraluminal.

Surgical intervention was imperative for the removal of the metal wire due to its unusual location and the inherent risks of leaving a metallic foreign body near vital neurovascular structures in the neck. The operation involved careful neck exploration, with particular attention to preserving the superior laryngeal nerve and managing the foreign body's close proximity to the right internal jugular vein. This necessity for open surgical removal, rather than endoscopic retrieval, is consistent with reported cases where foreign bodies have migrated extraluminally and become embedded in deep neck structures like the thyroid gland. The successful removal without complications further emphasizes the importance of precise preoperative localization and meticulous surgical technique in such complex scenarios.

In conclusion, this case serves as a critical reminder for clinicians to maintain a high index of suspicion for extraluminal foreign body migration, even in the presence of mild or atypical symptoms, especially following the ingestion of sharp objects. It reinforces the paramount role of advanced imaging modalities like CT scans in achieving accurate diagnosis and guiding appropriate surgical management when conventional methods are inconclusive. The successful outcome of this rare presentation contributes valuable insights to the limited existing literature on foreign bodies migrating to the thyroid gland, emphasizing the need for comprehensive diagnostic evaluation and timely surgical intervention to prevent potentially life-threatening complications.[1]

Clinical Significance

This case report highlights the rare and challenging presentation of an accidentally ingested foreign body, specifically a metal wire, lodging in the thyroid lobe. The clinical significance lies in several key aspects as follows:

Unusual Migration

Unlike typical foreign body ingestions that remain within the digestive tract or respiratory passages, this case demonstrates an extremely unusual migration of the foreign body to the thyroid gland, making diagnosis and localization particularly difficult.[2]

Atypical Symptoms

The patient presented with only a foreign body sensation in the throat and slight discomfort while swallowing, without severe symptoms like painful swallowing, nausea, vomiting, oral bleeding, hematemesis, respiratory distress, or stridor. This atypical presentation underscores the need for a high index of suspicion even with mild symptoms when a foreign body ingestion is suspected.

Diagnostic Challenges

Initial examinations, including routine ENT examination, videolaryngoscopy, and even upper GI endoscopy, failed to locate the foreign body. This emphasizes the limitations of standard diagnostic tools in such rare presentations and highlights the critical role of advanced imaging, like CT scans of the neck with contrast,

in pinpointing the exact location of the foreign body when other methods are inconclusive.[3]

Surgical Complexity

The foreign body was embedded in the superior pole of the right thyroid lobe and was closely abutting the right internal jugular vein, requiring careful neck exploration under general anesthesia for its removal. This case demonstrates the potential for complex surgical intervention due to the unusual location and proximity to vital structures.[1,4]

Importance of Multimodality Imaging

The case illustrates how initial X-rays indicated a foreign body in the esophagus, but a CT scan was ultimately necessary to reveal its penetration into the thyroid lobe, showcasing the importance of utilizing multiple imaging modalities for accurate diagnosis in challenging cases.

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