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**Case Report**

# Migrating foreign body of oesophagus: an enigmatic presentation

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## ABSTRACT

Ingested foreign bodies are medical emergencies that test the clinical acumen and skill of the otolaryngologist. The foreign body may be intra-luminal, intra-mural (penetrating the wall) or extra-luminal. The migration of an ingested foreign bodies extraluminally from the upper aero-digestive tract is a rare occurrence which may be difficult to diagnose and treat. Time is of essence in detection and management of these cases so that life threatening complications can be prevented. We present a case of a 51 years old female patient with a metallic foreign body in the oesophagus which migrated extraluminally. Surgical Exploration via transcervical approach was done to gain access for removal of the foreign body.

**Keywords:** Foreign body, Migration, Extra luminal, Oesophagus, Upper aero-digestive tract

## INTRODUCTION

The commonest emergency seen in ENT practice is the accidental ingestion of foreign body (FB) especially by children which gets lodged in the upper aero digestive tract. A vast majority of foreign bodies become impacted in the tonsils, base of tongue or vallecula which can be easily removed with forceps as an outpatient procedure.[1] In a few cases, the foreign body becomes lodged at the cricopharynx or at the oesophagus constrictions, which require a rigid oesophagoscopy under general anaesthesia for removal. An even smaller fraction of cases occurs in which the foreign body perforates the wall of oesophagus and "migrates" into the tissues of neck. Linear foreign bodies like fish bones and metallic wires are more likely to migrate extra luminally as compared to irregular foreign bodies like chicken bones etc. A migrated foreign body can cause life-threatening supurative or vascular complications depending on the size and location of the foreign body.

A case of migrating foreign body presents a clinical dilemma and the diagnosis should be considered whenever imaging is suggestive of a foreign body in the upper aero-digestive tract but is not visualised on endoscopy. It is managed by exploration of the neck by an external approach to identify the foreign body and remove it. In practice, as any surgeon who has removed foreign objects embedded in soft tissue would know, this is often a difficult and time consuming task. Localisation of FB is the main task of the surgery, after which removal is usually straight forward.

## CASE REPORT

A 51-year-old lady, presented with a history of pricking pain in throat of 02 days duration after eating sweets. She complained of persistent pain at the lateral aspect of right side of neck, which worsened on swallowing. Subsequently, her diet was limited to soft foods and liquids. The patient denied any history of surgical procedure or trauma to the neck or chest. On physical examination there was no stridor, voice changes, or palpable neck masses, no foreign body was detected in the tonsils or hypopharynx but tenderness was present in right lateral aspect of neck.

A lateral view X-ray of the soft tissues of the neck revealed a densely radio-opaque linear shadow suggestive of a wire-like metallic object adjacent to the trachea and oesophagus at the level of sixth and seventh cervical vertebrae. This gave an impression that FB is jutting into the tracheal lumen (Figure 1).


**Figure 1: Metallic foreign body seen on X-ray (arrow).**

A fibreoptic bronchoscopy (FOB) was done however no FB could be identified in tracheal lumen. In view of this, it was suspected that FB has got dislodged into bronchus. A formal FOB was performed to look for FB, however, no FB could be identified in respiratory tract. Further a suspicion of foreign body in oesophagus was to be ruled out, so the opinion of a gastroenterologist was sought for and fibreoptic flexible oesophagoscopy was done which also revealed no foreign body. Thereafter, a non-contrast computed tomography of skull base to root of neck was done, which revealed the wire like FB lying posterior to tracheal lumen and medial to oesophagus in soft tissue with lateral end reaching up to common carotid artery on the right side (Figure 2). The patient was planned for FB removal by transcervical approach and was started on intra venous antibiotics.

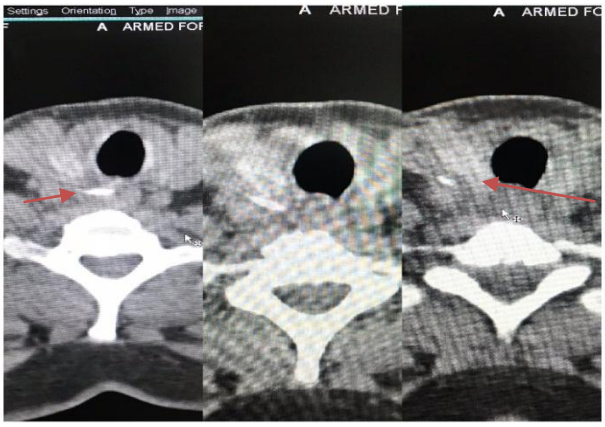

**Figure 2: Images showing radio opaque FB lying posterior to tracheal lumen with lateral end up to common carotid.**

An upper skin crease incision was given on the right side and sub platysmal flap was elevated. The sternocliedo mastoid muscle was mobilised and retracted laterally. The CT scan images were helpful in pinpointing the location of the foreign body in relation to adjacent anatomical landmarks i.e. the inferior border of cricoid near the carotid sheath (Figure 3). Using a fine artery forceps to separate the muscle fibres, a linear metallic foreign body, which appeared to be a wire was found and removed (Figure 4). The incision was then carefully repaired and a corrugated drain inserted into the wound. Her post-operative recovery was uneventful. She was discharged on the 5th post-operative day.

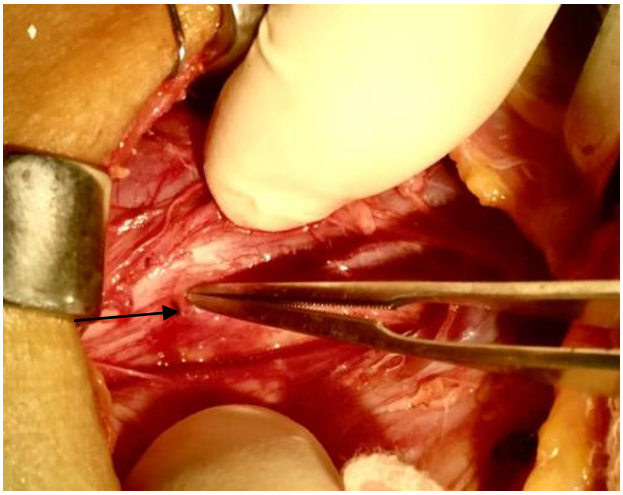

**Figure 3: Tip of metallic foreign body seen as a black dot beside the carotid artery.**

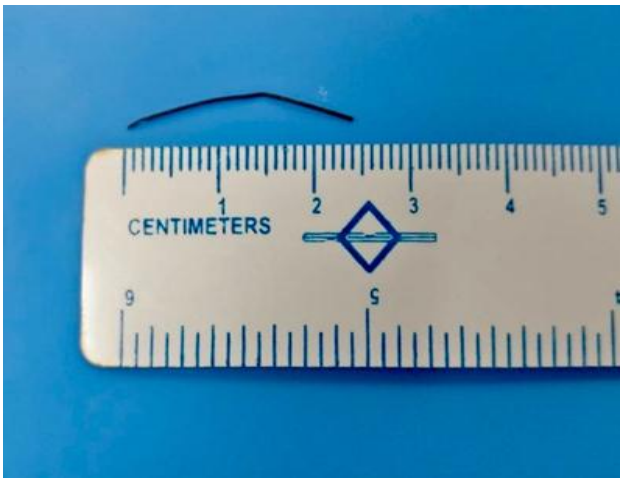


**Figure 4: Metallic foreign body after surgical removal.**

## DISCUSSION

A neck exploration to look for migrated foreign body can be like looking for a needle in a haystack. It is indeed a therapeutic dilemma keeping in mind the potential life threatening consequences. The volume of literature available for ingested FB that perforate the oesophagus is small, and FB which migrate extraluminally are very rare.[2-6,7]

As per Remsen et al, out of 321 cases of penetrating FB, only 43 were found extraluminally.[8] Sharp and long foreign bodies such as needles, wire and bones are most frequently implicated in cases. This review concluded that extraluminal migrating foreign body had a lower mortality compared to intraluminal penetrating foreign body. The most dreaded and commonest complication was the vascular complications, followed by the suppurative processes. According to this review there was no correlation between the duration of foreign body and mortality, in other words the migrated foreign body may remain quiescent for years before causing any disastrous complications.

Chee et al reviewed 24 extraluminal migrating foreign bodies (fish bones).[9] The migrated FB was linear, sharp-ended ones mostly intramural and the horizontally oriented ones were associated with extraluminal migration which would logically cause less resistance on travelling through the soft tissue. More irregularly shaped foreign bodies such as chicken or duck bones are less likely to migrate through the soft tissue compared to pointed fish bones.

The mechanism by which the FB gets propelled through the soft tissues is poorly understood, but it may possibly be due to a combination of oesophageal peristalsis and neck movements. Tissue reaction to the foreign body as well as infection and abscess formation could also play a part.[8] A foreign body should be suspected to have migrated extraluminally when endoscopy fails to identify a foreign body and imaging confirms it is still in the neck. The patient should then be started on intravenous antibiotics. A combination of metronidazole together with a wide spectrum antibiotic is recommended to cover anaerobic and gram-negative organisms which are the common organisms cultured in such circumstances, as was done in our case.

A barium swallow is of limited value in localising extraluminal migrated foreign bodies but can be useful in detecting oesophageal leaks. The investigation of choice is CT scan of the neck with 1 mm cuts. It assists in localising the FB, along with its size, type, orientation and, more importantly, the relationship of the FB to other vital structures such as the carotid sheath, hyoid bone, cricoid cartilage, and thyroid gland which serve as useful landmarks in a successful neck exploration. In comparison, the MRI scan would not image a migrated bone, and metallic foreign bodies would contraindicate its use due to the effect of the strong magnetic field.

Having confirmed that the foreign body is extraluminal, exploration and removal of the foreign body via an external approach is recommended, to avoid life threatening complications.[10] The surgery should be performed in an operating theatre where a C arm is available, in case it is difficult to localise the FB intra operatively. Once identified the FB can usually be easily removed. Any oesophagostomy or defect in the oesophageal wall should be repaired meticulously.

Post-operatively a nasogastric tube is passed to protect the oesophagus. Intravenous antibiotics are usually continued for 24 hours if there has been contamination. Nasogastric feeds are started in the first post-operative day and continued for up to 5 to 7 days if an oesophagastomy is done.

The most dreaded complication of FB removal is mediastinitis which may be life threatening if not identified and treated aggressively. Other complications like trauma to major vessels and nerves are known to occur but can be avoided using meticulous surgical technique.

## CONCLUSION

The management of this rare presentation of ingested FB even though its presentation was therapeutic dilemma became less daunting when approached systematically. A careful rigid bronchoscopy and esophagoscopic examination and 1 mm cut CT scan are the main important steps to a successful diagnosis. Systematic exploration of the neck via an external approach using the CT scan report as a guide is the key to a successful exploration. Successful removal of the FB prevents the occurrence of life-threatening complications.

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