Sharp Foreign Bodies in the Upper Digestive Tract
To use a Flexible or Rigid Endoscope is a Real Dilemma—A Case Report and Review of the Literature

Abstract

A case of a sharp foreign body (needle) in the upper oesophagus is reported. A review of the literature of ingestion of sharp foreign bodies, failed extractions, different management techniques and complications is discussed.

Keywords: Sharp foreign body, Flexible endoscopy, rigid endoscopy, IJV Thrombosis, cervical oesophagotomy, oesophageal perforation, mediastinitis, Cricopharyngoscope, Oesophagoscope, Colonoscope, Weerda diverticuloscope

A case report

A twenty-four-year-old Emirati woman presented with pain in the neck at the level of the cricoid cartilage after accidental ingestion of a needle. The X-ray neck a/p (Figure 1) and lateral (Figure 2) was taken, which showed the sharp foreign body (needle) at the level of the cricopharynx. The patient was put under general anaesthesia and a cricopharyngoscope was passed gently. Using grasping forceps, the needle was grasped with care and the endoscope was advanced to sheath the needle, and the forceps was withdrawn along with the endoscope. There was no mucosal tear and the patient was discharged after four hours.

Discussion

Impacted sharp foreign bodies in the oesophagus can be very difficult to manage. Reported annual deaths due to ingested foreign bod-
ies ranges from 1000 to 2000 in the USA. A sharp oesophageal foreign body should be removed without postponement to prevent complications.\textsuperscript{1} When attempts are made to remove such objects inappropriately, life-threatening complications can result such as perforation and mediastinitis. The above complications can be prevented with a careful history and examination of the X-ray and appropriate use of an endoscope.

Patients who have ingested a sharp foreign body require prompt diagnosis and therapy. The first objective is to determine the nature of the sharp foreign body, time since ingestion, symptoms, and location by radiographs (X-ray a/p and lateral). Contrast studies are not of much help for sharp foreign bodies. In cases where location is difficult a CT scan is recommended to visualise the foreign body and identify early complications.

Several methods of extracting foreign bodies have been described. However, there is no one single technique which has proven entirely satisfactory.\textsuperscript{1} Sharp foreign bodies in the pharynx can be removed using a cricopharyngoscope and McGill forceps. Foreign bodies in the oesophagus have also been removed using an oesophagoscope. The rigid oesophagoscope was only available prior to 1945.

**Key Point**

*Sharp foreign bodies in the upper digestive tract can be a real challenge in clinical practice.*
Due to its bivalve nature, the Weerda diverticuloscope (Figure 3) offers a larger working channel allowing direct manipulation and retrieval of larger sharp foreign bodies. In 1980 the flexible oesophagoscope became a popular tool for oesophageal foreign body extraction. Rigid endoscopes are considered to be reliable and safe because of their large working channel, and are considered successful between 94% and 100% of cases. Attempted extraction using a flexible endoscope can increase morbidity significantly.

Embedded sharp foreign bodies in the cervical oesophagus represent significant challenges. In difficult cases where visualisation is not possible, a fiberoptic flexible oesophagoscope or colonoscope (Figure 4) with proximal dilatation with an oral side balloon with a transparent cap is a safe and effective method of removal and avoiding surgery and possible perforation. Dilatation of the oral side balloon releases an impacted sharp foreign body (Figure 5).

Larger sharp foreign bodies must sometimes be broken in the centre to release the sharp edges from the wall of the oesophagus and carefully extracted without causing mucosal injury by gently advancing a rigid endoscope until the entire length of the blade is brought into the lumen of the rigid endoscope and the oesophagoscope.

**Key Point**
High level of suspicion is required in the paediatric age group and mentally challenged patients.
is withdrawn with the foreign body. Inspection is done again using a rigid endoscope to see mucosal injury. A nasogastric tube is passed for 48 hours and the patient is kept nil per orally for 48 hours. Sometimes smaller sharp foreign bodies are difficult to locate with a rigid endoscope so a flexible scope with balloon dilation and cap is used for location and removed with a rigid endoscope after localising the foreign body.

In difficult cases where endoscopy has failed to remove an impacted foreign body in the cervical oesophagus, cervical oesophagotomy is needed to avoid retention of the foreign body and the likelihood of complications. Very few complications have been reported following oesophagotomy for the removal of a foreign body. In a rare case, failed endoscopy could be due to migration of sharp foreign bodies submucosally in the neck which require removal of foreign body using an external approach. Very rarely thrombosis of the internal jugular vein from migration of a sharp oesophageal foreign body is reported. A CT scan can confirm a radiopaque foreign body in the internal jugular vein where surgical removal of the foreign body is done after exploration and IJV ligation is done. Cervical oesophagotomy and exploration of the neck for extraction of a sharp foreign body from the internal IJV should be done in well equipped centres.

Review of the literature has shown a very rare case of a sharp stone piece impacted in the upper oesophagus that was removed by passing a guide wire through the stomach by percutaneous gastrostomy and a silicone tipped tube was introduced through the guide wire using the Seldinger method. The sharp stone piece was dislodged into the hypopharynx and retrieved per-orally and there was no damage in the oesophagus.

**Conclusion**

Key factors influencing the management of sharp foreign bodies in
Sharp Foreign Bodies in the Upper Digestive Tract

SUMMARY OF KEY POINTS

Sharp foreign bodies in the upper digestive tract can be a real challenge in clinical practice.

High level of suspicion is required in the paediatric age group and mentally challenged patients.

Proper history taking, examination and investigation could help to locate the foreign bodies.

Use of appropriate endoscope and skill could facilitate the removal of foreign bodies.

If failed can lead to complication like perforation, mediastinitis and migration of foreign bodies.

Clinical Pearls

Early detection of the ingestion of sharp foreign bodies and proper utilisation of skills in performing endoscope is the key for the management of sharp foreign bodies to avoid complications.

Key factors influencing the management of sharp foreign body in the digestive tract includes the type of object, its physical characteristic, location, associated medical conditions, presence or absence of symptoms, evidence of complication such as complete obstruction or perforation and last, but not least, experience and skill of the endoscopist and the availability of proper instruments.

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References


Key Point

Use of appropriate endoscope and skill could facilitate the removal of foreign bodies.