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Case Report

Unusual presentation and management of a penetrating foreign body in the pyriform fossa: a case report

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ABSTRACT

Foreign body impaction in the upper aerodigestive tract is considered an emergency that necessitates extraction within 24 hours to prevent adverse events. Rigid oesophagoscopy is crucial in managing sharp, penetrating, and large foreign bodies lodged in the pharynx or at the cricopharyngeus muscle level. In this case report, a 15-year-old male patient presented with throat pain after consuming a chicken meal. He experienced dysphagia and odynophagia but no vomiting, drooling, or hematemesis. Initial video direct laryngoscopy did not reveal any foreign body, and subsequent rigid oesophagoscopy under general anaesthesia was inconclusive. However, a post-operative X-ray of the neck confirmed the presence of a foreign body. A contrast-enhanced computed tomography scan showed the foreign body penetrating the right pyriform fossa. With the assistance of a medical gastroenterologist, a flexible upper gastrointestinal endoscopy was performed, and the foreign body was successfully removed from the right pyriform fossa. Prompt endoscopic removal under conditions of minimal trauma and maximum safety is the preferred treatment approach for foreign bodies in the upper aerodigestive tract, necessitating a multidisciplinary team involving radiologists, otorhinolaryngologists, medical gastroenterologists, and anesthesiologists to develop tailored treatment plans for each patient.

Keywords: Foreign body, Upper aerodigestive tract, Pyriform fossa, Endoscopic removal

INTRODUCTION

Foreign body impaction in the upper aerodigestive tract is an emergency. It must be extracted within 24 hours of impaction to prevent any adverse events like perforation of the oesophagus, prevertebral/retropharyngeal abscess, fistulous communication between trachea and oesophagus and empyema.[1] The management options to retrieve the foreign body depend on the size, shape, character (sharp or blunt), and location of the foreign body in the upper aerodigestive tract.[2] The most common oesophagal foreign body retrieval method is now flexible upper gastrointestinal (GI) endoscopy.[3] Those foreign bodies not perforating can be managed endoscopically without adverse events.[4] But rigid oesophagoscopy manages foreign bodies that are sharp, penetrating and large, lodged in the pharynx or at the cricopharyngeus muscle level.[5] Here, we report a case of a sharp, penetrating foreign body that has penetrated the pyriform fossa and lodged in the soft tissue of the neck and its management.

CASE REPORT

A 15-year-old male came to the ENT outpatient department with a history of throat pain following the intake of a chicken meal a day before. He had dysphagia and odynophagia, but no vomiting, drooling or hematemesis, and a video direct laryngoscopy revealed no foreign body in the oral cavity, oropharynx or larynx.

There was no saliva pooling in both pyriform fossa, and an X-ray soft tissue neck lateral view was requested, revealing a foreign body behind the airway at the C5 vertebral level (Figure 1).

Figure 1: Preoperative X-ray showing radio-opaque foreign body.

A rigid oesophagoscopy was done under general anaesthesia, which did not reveal the foreign body. Post-operative check X-ray soft tissue neck did show the foreign body at the same level (Figure 2).

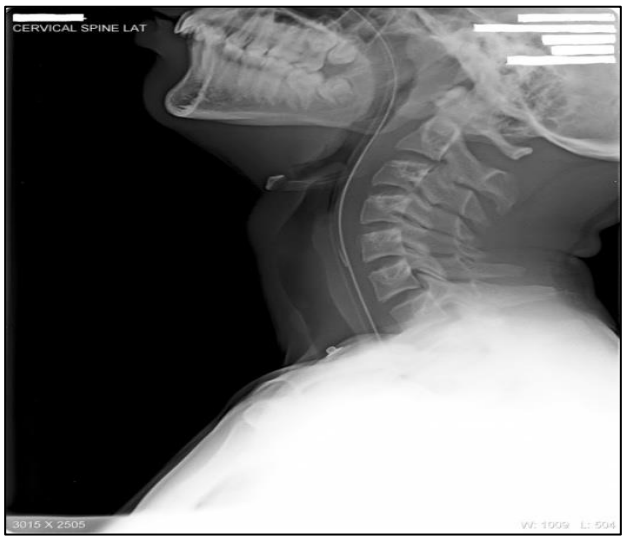

Figure 2: X-ray showing persistence of radio-opaque shadow after rigid esophagoscopy.

The patient was complaining of persisting symptoms, and a contrast-enhanced computed tomography was requested, which revealed the foreign body penetrating the right pyriform fossa, piercing the right thyroid cartilage lamina and abutting the superomedial portion of the right thyroid gland. The size of the foreign body on the long axis was 1 cm (Figure 3).

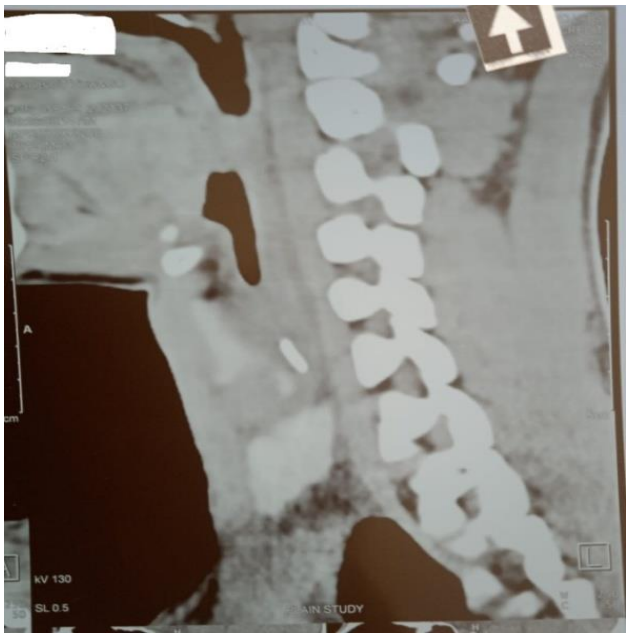

Figure 3: The CT shows a foreign body at the C5-C6 vertebra level.

With the help of a medical gastroenterologist, a flexible upper GI endoscopy under topical anaesthesia was done, which revealed the tip of the foreign body at the right pyriform fossa just behind the right arytenoids (Figure 4).

Figure 4: Endoscopic picture of foreign body at right pyriform fossa.

With the help of 180 cm rat tooth foreign body forceps compatible with a flexible upper GI endoscope, the tip of the impacted bone was held, milked out of the tissue, and the same was removed in toto (Figure 5).

Figure 5: Retrieved foreign body.

Post-operative X-ray neck did not reveal the foreign body shadow at the level of the C5 vertebra, and there was no air leak. The patient was kept nil per oral for 24 hours and discharged. The patient was relieved of symptoms and had an uneventful recovery.

DISCUSSION

An oesophageal foreign body is two times more common than a bronchial foreign body and is ingested accidentally or intentionally. They more commonly pass through the gastrointestinal tract without adverse events or remain in the gut.[6] Only 10-20% need non-surgical intervention to retrieve the foreign body, and less than 1% need surgical intervention.[1] The outcome of such an event depends on the nature of the foreign body ingested-smooth supple ones are least likely to get impacted and have uneventful passage. At the same time, those with sharp borders are likely to get embedded or pierce the gut. Perforation and movement of foreign bodies into the neck's soft tissues are rare occurrences.[7]

Though foreign body ingestion is more common in children, it is also frequently seen in adults. These are commonly reported among people with psychiatric illness, mental instability, alcoholics and prisoners.[3] If there is a history of frequent foreign body impaction in middle age or elderly adults, they must be subjected to flexible upper GI endoscopy after removing a foreign body to rule out any underlying malignant growth in the oesophagus. But accidental impaction of foreign bodies during food intake is common among adults, and the most common foreign body reported to be impacted fish bone.[3] They may be lodged at the palatine tonsil, the base of the tongue, vallecula, pyriform fossa, and at the oesophagus it may get stuck at the cricopharynx, crossing of the aorta or gastroesophageal junction.[8] These are the areas of importance for the endoscopist to search for the foreign body actively.

Most patients report within 24 hrs. of ingestion with symptoms of odynophagia, dysphagia, emesis, drooling of saliva or neck pain.[6] Plain X-ray soft tissue neck lateral view is the helpful first-line investigation requested for suspected foreign body ingestion.[7] A contrast oesophagogram can localize the foreign body in a non-radio opaque foreign body.[6] Options for management include flexible fibre optic upper GI endoscopy, rigid oesophagoscopy and open surgical exploration. Open surgical intervention may be considered when there is oesophagal perforation, complication secondary to oesophagal wall necrosis due to foreign body retention for a long time, or endoscopic retrieval is not possible or life-threatening.[3]

Rigid oesophagoscopy can be used for sharp foreign bodies to retain them inside the sheath of the oesophagoscope during retrieval and for large foreign bodies. The success rate of rigid oesophagoscopes is 94-100%, and the estimated incidence of perforation of the oesophagus is 0.34 and 0.05% mortality.[3] Flexible upper GI endoscopy has the advantages of enhanced visibility, magnification that help identify subtle lesions and small foreign bodies, flexibility and enhanced safety profile. In our case, because of the dexterity of the flexible upper GI endoscope and the magnification component, we can localize the foreign body near the right arytenoids in the right pyriform fossa and retrieve it.

Computed tomography can confirm that the foreign body has migrated, indicated by skeptical opacity in plain X-ray soft tissue neck and negative rigid oesophagoscopy.[7] Further, it helps to know the exact location of the foreign body in the neck's soft tissues. Moreover, we can know the exact dimension of the foreign body, which may be useful if there is a splitting or breakage of the foreign body during its retrieval. We may initiate a second look when the extracted foreign body is smaller than the one hinted at by a computed tomography scan.

CONCLUSION

The treatment of choice for a foreign body in the upper aerodigestive tract is prompt endoscopic removal under conditions of minimal trauma with maximum safety. Multidisciplinary team management comprising a radiologist, otorhinolaryngologist, medical gastroenterologist, anesthesiologist is required for charting out the treatment plan. Each foreign body is unique and needs an individualized approach to managing these patients. Computed tomography is particularly useful if the foreign body has left the lumen and embedded or penetrated the soft tissue.

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