

Oesophagopleural Fistula and Empyema Following Fishbone Migration

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ABSTRACT

Fishbone is one of the most commonly ingested foreign body encountered. Patient may present with foreign body sensation, dysphagia, odynophagia and drooling of saliva with positive history of foreign body ingestion. Depending on the site of impaction, it can either be removed in clinic setting or it may need surgical intervention, while some of the cases require further radiological imaging in order to locate the fishbone. In rare circumstances, the symptoms persist or worsen, possibly due to complications that may arise during surgery or the degree of severity of fishbone impaction itself. Herein we reported a case of migrated fishbone complicated with neck abscess and lung empyema following its migration.

KEYWORDS: oesophagopleural fistula, lung empyema, fishbone ingestion, oesophagoscopy

INTRODUCTION

Fishbone accounts for up to 84% of the accidentally ingested foreign body (FB) [1]. Majority of them passed through gastrointestinal system without any symptoms or it may get lodged anywhere along the alimentary tract, which is usually readily visualised and easily removed using some kind of instrumentations [2]. Being a sharp and pointed FB, it can migrate and penetrate into deeper structures and spaces of the neck causing oedema, inflammation, abscess formation and airway compromise. Rarely, it can cause oesophageal perforation either by direct penetration, pressure, chemical necrosis or iatrogenically during the procedure itself [3].

CASE PRESENTATION

A 23-year-old male, presented with FB sensation in the throat, odynophagia, and unable to swallow saliva after 2 hours' post-ingestion of fishbone. Lateral soft tissue neck radiograph showed a FB at the level of the C7 vertebra with an air streak in the oesophagus (Figure 1A). Laryngoscopy showed pooled saliva at the bilateral pyriform fossa. Rigid oesophagoscopy revealed an impacted fishbone at the level of 18 cm from the upper incisor. It was successfully removed (Figure 1B). The surrounding oesophageal mucosa was normal and intact. As the symptoms improved, he was discharged home on the day after.



Figure 1 Radiopacity (arrow) in the oesophagus locating the fishbone (A), sharp-pointed fishbone removed via oesophagoscopy (B)

Two days later, he complained of worsening odynophagia, associated with painful right neck swelling, fever, and interscapular pain. Clinically, there was a right lateral neck swelling, size of 4 cm x 4 cm, with normal overlying skin. It was firm in consistency and tender. The oropharyngeal examination was normal. Laryngoscopy showed pooled saliva at the bilateral

pyriform fossa. Contrast-enhanced computed tomography (CT) of the neck showed a large area of air collection at the right side of the neck with fluid collection extending downward to the posterior mediastinum (Figure 2). 10 cc pus was evacuated during incision and drainage, then proceeded with rigid oesophagoscopy. Oesophageal mucosa was normal and no sign of perforation was seen.

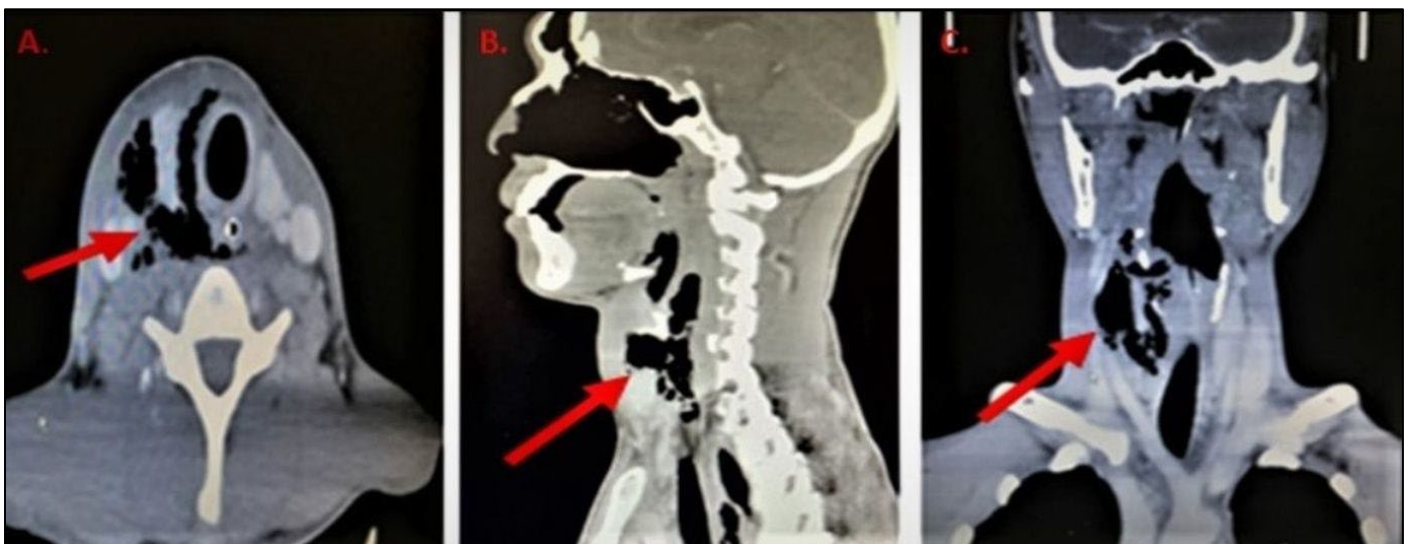


Figure 2 Axial (A), sagittal (B) and coronal (C) cut of CT neck showing air collection (red arrow) on the right side of the neck

The patient was admitted to the intensive care unit for close observation. A repeat chest radiograph showed worsening of perihilar haziness with bilateral pleural effusion. Hence bilateral chest tubes were inserted. A referral to the respiratory team was made. He was treated as bilateral lung empyema. He was started on intravenous Tazocin 4.5g qid.

One week later, we noted a copious amount of pus from the neck wound, especially upon Trendelenberg position (Figure 3A). Given the persistent pus discharge despite the patient being on

intravenous antibiotics and chest tube drainage, it raised suspicion of oesophageal perforation. Hence, barium fluoroscopy was done and the finding confirmed the left oesophagopleural fistula at 20cm from the incisor (Figure 3B). He was put on a nasogastric tube for feeding and nil by mouth for 6 weeks. A repeat CT neck after 4 weeks post intravenous antibiotic showed resolving right neck collection and lung empyema. Repeat barium fluoroscopy after 6 weeks of intravenous antibiotic showed resolved oesophagopleural fistula. He was allowed orally and discharged home.

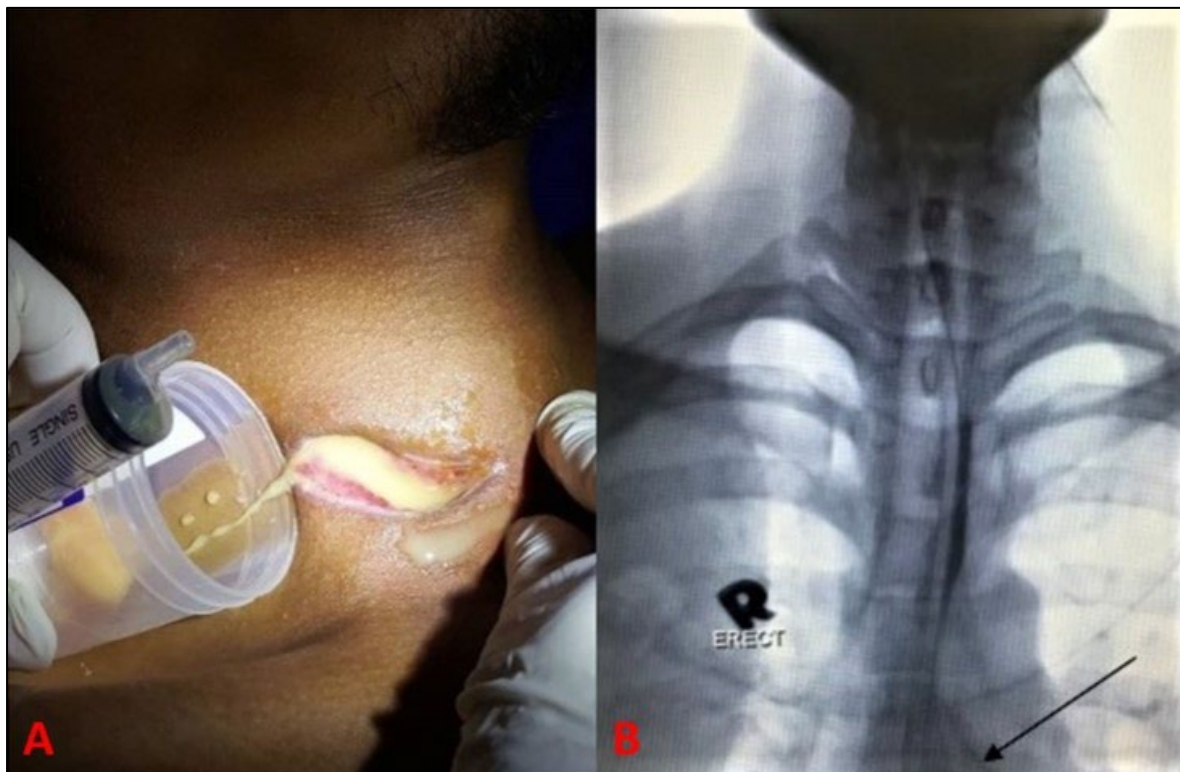


Figure 3 Pus discharge one-week post incision and drainage (A), oesophagopleural fistula (arrow) demonstrated via barium fluoroscopy (B)

DISCUSSION

Oesophageal perforation remains a life-threatening condition. Most commonly it presents with chest pain and dyspnoea mimicking symptoms of mediastinitis due to irritation by the gastric content. However, up to one-third of its manifestations are atypical [4]. Our patient presented with a right parapharyngeal abscess with extension to retropharyngeal space. Chest radiograph showed obliteration of the costophrenic angle thus raising suspicion for fistula formation

between oesophagus and pleura. It was confirmed with barium fluoroscopy.

The diagnosis most often relies on radiological findings. Plain chest radiographs may show mediastinal and subcutaneous emphysema, pleural effusion, and pneumothorax [5]. A CT scan is usually very helpful in distinguishing pleural from parenchymal disease [6]. Contrast oesophagography is diagnostic in patients with clinically suspected oesophageal perforation, and this test may define the anatomical site and extent of the perforation [7].

Fishbone tends to migrate intraluminal and extraluminal [8]. The exact mechanism is unknown but it is proposed by a sequence of oesophageal peristalsis in combination with neck movement [9]. In our case, the fishbone had migrated intraluminally to the thoracic part of the oesophagus where it was discovered during oesophagoscopy. The soft tissue neck radiograph showed a fishbone at the level of C7 which was taken 12 hours before the operation, which allowed sufficient time for migration to take place.

To minimize the risk of perforation, mediastinitis, or abscess, the impacted fishbone must be removed within 24 hours. It reduces the risk of morbidity or mortality [10]. Oesophageal perforation which has occurred in less than 24 hours can be treated via primary repair. However, beyond 24 hours, the risk of fistula formation to surrounding structures is high [11, 12].

Management of fistula depends on site, size, duration, and severity of perforation and presence or absence of mediastinitis. It involves medical treatment of the effusion or empyema that results from the fistula besides correction of the fistula itself. It can be managed either conservatively or surgically. Conservative therapy includes drainage of the empyema, administration of antibiotic and resting the oesophagus to help the healing process of the fistula. This can be achieved by nasogastric tube feeding, gastrostomy, or jejunostomy to be started as early as possible. Additional drainage of empyema if required can be done via CT guidance or thoracoscopy and possibly decortifications [13].

Surgical fistula closure can be done by application of obliterating agents such as fibrin or cyan acrylic glue [14, 15], endoscopic clip application and endoscopic suturing system [16]. Our patient was put on tube feeding and chest tube drainage combined with long term antibiotic for about 4 weeks duration. Oral feeding was resumed after the fistula tract had closed which was confirmed by the contrast oesophagography.

CONCLUSION

In a positive history of fishbone ingestion, a high index of suspicion of oesophageal perforation or

oesophagopleural fistula must be there if the symptoms persist or worsening despite its removal. Removal at its earliest will minimize the risk of migration, leading to perforation, mediastinitis or abscess formation.

Conflict of Interest

Authors declare none.

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Authors' contribution

SAA prepared the first draft of the case report, SNTH and KA contributed to the critical revision of the case report, and IM contributed to the final revision and approval of the case report.

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