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CASE REPORT

Life Saving Retrieval of Foreign body [Button Battery] from Oesophagus

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ABSTRACT

Foreign bodies in the esophagus are usually seen in the pediatric age group, likely due to behavioral patterns common in children. Whenever such a young child is left unsupervised, incidents like this are likely to occur. The foreign body may range from a coin to a stone and even a battery. We hereby present such an interesting case. A 2-year-old child had ingested a battery that became lodged in the esophagus. As usual, rigid esophagoscopy was initially attempted, but without success. Given the serious prognosis associated with battery impaction, and after repeated endoscopic attempts as well as more than 48 hours had elapsed, we proceeded with a thoracotomy and were able to retrieve the battery successfully.

KEYWORDS

• Battery • Foreign Body • Dysphagia • Left Thoracotomy

INTRODUCTION

The esophagus is the most common site for an ingested foreign body. The most common locations where a foreign body becomes lodged are the sites of esophageal constriction. The presenting symptoms are acute dysphagia and retention of oral secretions, resulting in hypersalivation. Pressure necrosis may progress to perforation, followed by a tracheoesophageal fistula and aspiration after 24 hours. Emergent endoscopy is indicated for sharp objects or for disk or button batteries. Surgical retrieval via esophagotomy is unusual, but it may be used as a last resort when endoscopy fails.

CASE PRESENTATION

The child was referred to us through the emergency department, and his parents were somewhat apprehensive. Based on the history, we learned that he had swallowed a battery 2 days earlier. The mother reported that the child regurgitated milk after feeding. A chest X-ray was obtained immediately, and it allowed us to identify the battery as being lodged

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in the esophagus (Figure 1). The diagnosis was subsequently confirmed with computed tomography (Figure 2). Although endoscopic retrieval was attempted, the battery could not be removed endoscopically, which may have been due to pressure necrosis that had already developed; the device was impacted within the anterior esophageal wall. Ultimately, we elected to proceed with a left thoracotomy.

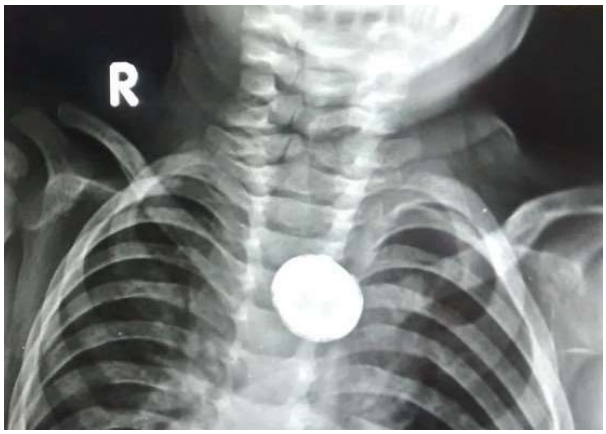

Figure 1: Chest X-ray AP view confirming foreign body lodged in upper esophagus

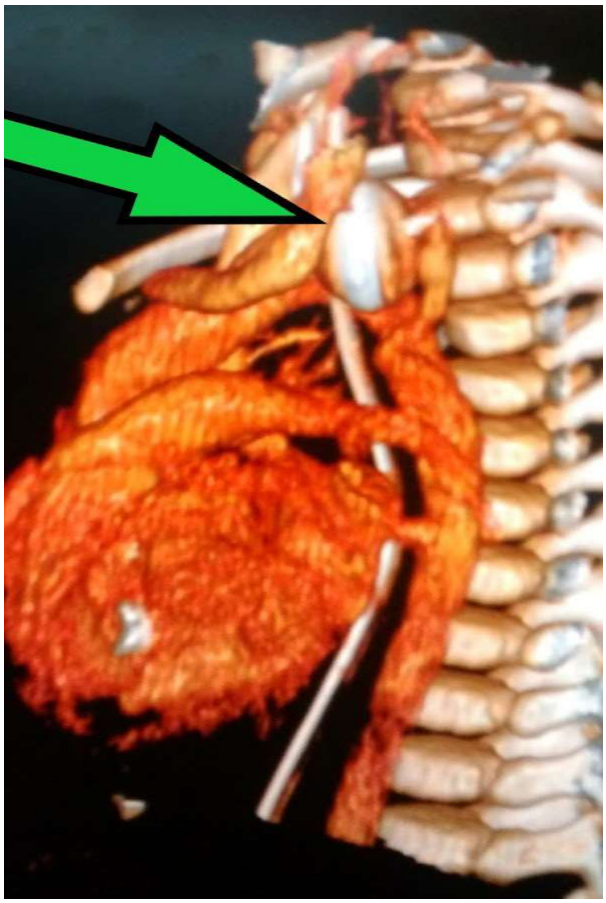

Figure 2: 3-dimensional computed tomography reconstruction showing foreign body (green arrow) in the upper esophagus

After positioning the patient in the right lateral position, the patient was properly prepped and draped. A left thoracotomy was performed; the esophagus was dissected, the foreign body was palpated, an esophagotomy was performed, and the foreign body was removed. The esophagus was then closed in two layers, and a drain was placed in the posterior mediastinum. A nasogastric tube was also inserted.

INVESTIGATIONS

OUTCOME AND FOLLOW-UP

The patient was on mechanical ventilation for four days. The posterior mediastinal drain was removed on the third postoperative day, and nasogastric feeds were started thereafter. An oral contrast study was performed on the 13th postoperative day, and no leak was observed. The nasogastric tube was removed on the 14th postoperative day, and oral intake was started. The patient tolerated oral intake and was discharged on the 16th postoperative day. The patient is doing well in follow-up in the outpatient department, and no complaint of regurgitation or dysphagia has been reported by parents.

DISCUSSION

The esophagus has three constrictions: the upper esophageal constriction at the level of the cricopharyngeus muscle, the middle esophageal constriction due to the left bronchus and the aortic arch, and the lower esophageal sphincter.[1] The location of foreign body impaction differs between pediatric and adult age groups. In the pediatric group, foreign bodies (about 74%) are usually lodged at the upper esophageal sphincter, whereas in the adult age group, they are typically impacted at the lower esophageal sphincter as a result of pathologic abnormalities.[2]

Battery impaction in the esophagus is considered an emergency. A battery can injure the esophagus and lead to several complications, including stricture formation, erosion, and perforation. The most dangerous complication associated with battery impaction is an aorto-esophageal fistula, which may cause massive hematemesis.[3]

Most batteries are large (greater than 20 mm). For this reason, they are more likely to remain

in the upper portion of the esophagus or, less commonly, in the middle portion due to the constrictions present there. Smaller batteries are more likely to pass through the gastrointestinal tract without causing significant damage because they are not retained in the way that larger batteries are.[3]

Primary prevention is a very important measure in cases of battery ingestion. Children under 5 years of age should be under parental supervision.[4]

The emergency management should be multidisciplinary, as was done in this case. Both pediatric endoscopy expertise and pediatric or cardiothoracic surgical expertise are required. The ultimate goal is to remove the battery as soon as possible to reduce the duration of esophageal exposure.[5]

CONCLUSION

There are times when conventional ways of retrieving a foreign body fail and we as Cardiac surgeons have to rescue patients as an emergency. In this case, ENT as well as pediatric cardiac surgery teams failed and we had to resort to thoracotomy to remove the battery. This is a rare case where battery was removed surgically in a small baby and patient could make it.

LEARNING POINTS/TAKE HOME MESSAGES

- Foreign body in oesophagus can be life threatening and needs immediate recognition, prompt action to save the life.
- It can easily be retrieved endoscopically,if diagnosed on time as most large size objects are impacted ususally in upper oesophagus.
- Surgery is usually the last resort, if endoscopy fails.
- Multidisciplinary approach helps as children are delicate and situation can escalate if retrival tried through endoscope fails.

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