

# Foreign body esophagus in a neonate: Unusual age and unusual presentation

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## Abstract

Foreign body ingestion in neonatal period is an uncommon occurrence, despite foreign ingestion being common among pediatric age group. We report a rare case of foreign body esophagus in a 12-day-old female neonate causing obstructive symptoms after a homicidal attempt. The unusual age and circumstances involving the ingestion of the foreign body prompted us to report this case.

**Key words:** Esophagoscopy, foreign body, neonate

## Introduction

Coins are the most commonly ingested foreign bodies (FB), with button batteries, fish bone, marble, stone, and pieces of meat, etc., being other forms of ingested FB.<sup>[1]</sup> In majority of cases, it is accidental in nature but can be occasionally homicidal,<sup>[2]</sup> as was probably the case in our patient. Early treatment can avert serious morbidity and even mortality. We report the case of a female neonate who had a large button battery impacted in the upper one-third of esophagus.

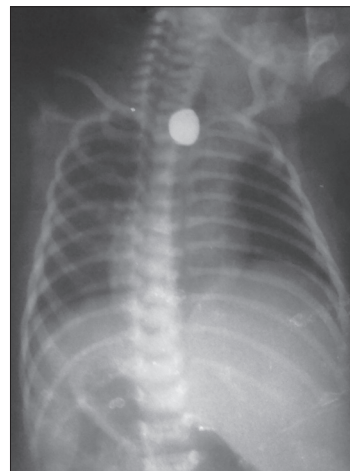
## Case Report

A 3.1 kg, 12-day-old newborn girl was referred to the otorhinolaryngology (ENT) department with complaints of vomiting, poor feeding, drooling of saliva, and mild cough for the past 10 days. The child was apparently well for 2 days after birth. She suddenly developed complaints of vomiting, poor feeding, drooling of saliva, and later cough. She had been kept at home under the care of her grandmother, despite these

ailments, for almost a week before medical consultation was sought. She had been shown to a local general practitioner who had treated her for 2 days and then referred her to the pediatric department in our hospital. The pediatrician sent her for an ENT consultation in view of the suspicious circumstances associated with the history.

On examination, patient's pulse rate was 142/min, blood pressure was 75/50 mmHg, and respiratory rate was 40/min. She was mildly dehydrated, had no stridor but had reduced air entry in the basal region of chest. Suspecting an FB, an X-ray neck, lateral and AP view, was done which revealed a rounded FB, 1 × 1 cm in size, impacted in the upper one-third of the esophagus at the level of T1-T2 [Figure 1]. An endoscopic removal was planned under general anesthesia.

Anesthesia was induced with sevoflurane in oxygen and



**Figure 1:** Preoperative chest X-ray PA view with foreign body *in situ*

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fentanyl 6 mcg was given intravenously. Rocuronium 3 mg was given intravenously and the airway was secured with a 3 mm ID endotracheal tube. The FB was deeply impacted with intense surrounding edema. Repeated attempts at retrieval proved unsuccessful. After about 3 h the procedure was abandoned and the patient was shifted to pediatric intensive care unit (PICU). Patient was put on synchronized intermittent mandatory ventilation (SIMV) with pressure support ventilation (PSV). She was gradually weaned off and the trachea extubated after 6 h. The patient developed stridor with decrease in oxygen saturation and trachea was reintubated. She was kept on the ventilator, on PSV mode, till she was taken up for a repeat surgical procedure.

A second attempt at endoscopic removal was planned after 3 days. General anesthesia was induced with inhalation of sevoflurane in oxygen and fentanyl 6 mcg was given intravenously. Trachea was already intubated and 2 mg rocuronium was given to produce muscle paralysis. Intraoperatively, because of tracheal compression and vagal stimulation by the rigid esophagoscopy, patient had polymorphic electrocardiographic (ECG) and heart rate changes, such as sinus bradycardia and tachycardia, low voltage QRS complexes, ST segment depression, and ST elevation. Other vital parameters including oxygen saturation remained stable. A button battery FB was successfully removed [Figure 2]. The esophageal mucosa was inflamed and edematous but surprisingly without any charring, blackening, or perforation. The trachea was extubated postoperatively the same evening. The patient was shifted to the PICU for observation and 2 days later to the ward after an uneventful recovery.

## Discussion

Eighty percent of all FB esophagus occur in children, with a peak incidence in the age group of 6 months to 3 years.



**Figure 2:** Foreign body after retrieval (button battery)

Of the FBs that come to medical attention, 80–90% passes through gastrointestinal tract without any difficulty, 10–20% requires endoscopic removal, and only about 1% requires surgical intervention.<sup>[3]</sup> The most common site for lodgment of an ingested FB is the cricopharynx. The FB in our case was lodged at the level of upper one-third of the esophagus.

Diagnosis becomes easier when parents give history of FB aspiration. X-ray neck, AP and lateral view, is most commonly done for diagnosis. If the incident is not witnessed and the ingested object is radiolucent, the diagnosis of FB ingestion can be very difficult. Barium esophagoscopy, computed tomography scans of the neck, ultrasonography, and magnetic resonance imaging may be required for diagnosis.<sup>[4]</sup>

Esophageal FB can damage the esophagus leading to perforations and strictures. Apart from eroding into the trachea, the object can erode into the aorta, leading to exsanguinations and death.<sup>[5]</sup> Other serious complications reported after FB ingestion include abscess formation and even sudden death.<sup>[3]</sup> FBs should be immediately removed on diagnosis, because they may rapidly cause direct tissue damage (blackening, charring, liquefaction necrosis, and esophageal perforation), by pressure and by chemical and electrical burns.<sup>[6]</sup> Surprisingly, in this case, the button battery had not caused much tissue damage, in spite of lying in situ for almost 10 days.

Occurrence of FB ingestion in neonates is rare with only a few reported cases in literature.<sup>[7]</sup> It is seen in circumstances where it has been inserted into the mouth playfully by an elder sibling or homicidal attempts on an unwelcome female child.<sup>[2]</sup> In the present case, the child was a third female child in a family wherein the only earning member was a poor rickshaw puller. The grandmother had probably put the battery in the child's mouth and then kept her at home for so many days hoping that she would succumb to it. In such cases, a history of FB ingestion is usually not available. A high index of suspicion must be maintained when the child presents to a medical facility with symptoms related either to the respiratory or gastrointestinal tract. Respiratory distress is the most common manifestation of an FB in esophagus in neonates,<sup>[6]</sup> and it can lead to misdiagnosis of a respiratory disorder. However, in this case, no history was forthcoming and there were no respiratory symptoms at presentation which is unusual. Only high indexes of suspicion lead to the diagnosis.

To conclude, we recommend that in case a female neonate, of lower socioeconomic status, presents with sudden onset of respiratory and gastrointestinal symptom a few days after birth, ingestion of a FB, constituting a form of child abuse or neglect with homicidal intentions should be suspected.

With this in mind, an early diagnosis can be made and appropriate treatment instituted to avert serious morbidity and even mortality.

## References

1. Pokharel R, Adhikari P, Bhusal CL, Guraigain RP. Esophageal foreign bodies in children. *JNMA J Nepal Med Assoc* 2008;47:186-88.
2. Mohammed Z, Kanojia RP, Thapa BR, Rao K. Foreign body oesophagus: A common occurrence at an uncommon age. *Afr J Pediatr Surg* 2010;7:114-6.
3. Wahebeh G, Wyllie R, Kay M. Foreign Body ingestion in infants and children, location. *Clin Pediatr* 2002;41:633-40.
4. Young CA, Menias CO, Bhalla S, Prasad SR. CT features of esophageal emergency. *Radiographics* 2008; 28:1541-53.
5. Jiraki K. Aorto-esophageal conduit due to a foreign body. *Am J Forensic Med Pathol* 1996; 17:347-8.
6. Choudhry CR, Bricknell MC, MacIver D. Oesophageal foreign body an unusual cause of respiratory symptoms in a three week old baby. *J Otol Laryngol* 1992;106;556-7.
7. Tansneem Z, Khan MA, Uddin N. Esophageal foreign body in neonate. *J Pak Med Assoc* 2004; 54:159-61.

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