

Multiple Atypical Esophageal Foreign Bodies in an Infant

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Submitted: 19-Jun-2019.

Revised: 13-Jul-2019.

Accepted: 26-Oct-2019.

Published: 24-Jun-2020.

ABSTRACT

Foreign body ingestion is a common accidental emergency in children. We report an unusual case of multiple blunt and sharp esophageal foreign bodies in a female infant probably associated with homicidal intent and its management.

KEYWORDS: *Esophagus, homicidal, infant, multiple foreign bodies*

INTRODUCTION

Accidental ingestion of a foreign body (FB) is a common pediatric emergency. Males aged <5 years are at greater relative risk. Nearly 40% of FB ingestions in children are unwitnessed, of which up to half remain asymptomatic. Coins are the most frequently ingested FB, but a diverse variety of household items are documented. Although 80%–90% pass through the gastrointestinal tract spontaneously, 10%–20% need endoscopic or surgical removal.^[1]

FB ingestion in neonates and infants is anecdotal and usually accidental^[2] but occasionally linked to child abuse.^[3] We detail the presentation and management of a female infant with multiple esophageal FBs due to a suspect homicidal intent.

CASE REPORT

A 4-month-old female was brought with cough, excessive salivary drooling, and vomiting of feeds for a week. Her father had succumbed to injuries after a motor vehicular accident 10 days prior. The infant was brought and cared for by the grandmother. She was referred to our center with a chest X-ray showing "many open safety pins and a coin" in the cervicothoracic region. Even after repeated interrogation, there was no history of FB ingestion; both the mother and accompanying kin denied knowledge of any foul play.

Barring excessive salivation, the physical examination was unremarkable. The chest skiagram showed four open safety pins and one mid-thoracic coin. Three of the safety pins were at the mid-thoracic level and one in the cervical region. Although only one safety head was delineated on the skiagram, all the safety pins seemed to be open with the sharp-pointed ends directed cranially [Figure 1]. At rigid endoscopy (Karl Storz bronchoscope sheath, No. 10338D; 0° telescope, No. 27018AA), the mucosa at the sites of impaction was inflamed. Four open safety pins were encountered at the corresponding levels. Two open safety pins did not have the safety heads, and the pointed tips were directed cranially, all partially rusted. A continuous hemorrhagic ooze from the inflamed mucosa compromised visibility at endoscopy. The pointed ends of three pins were carefully grasped by the optical forceps (Karl Storz, Peanut grasping forceps, No. 10378) and partly drawn into the endoscope sheath during retrieval to prevent further injury. Endoscopic retrieval was aided by intraoperative fluoroscopy. In addition, three 2.5-cm diameter coins were also retrieved. The fourth pin slipped into the stomach and was removed at laparotomy/gastrotomy [Figure 2] as it

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How to cite this article: Varik R, Shubha AM, Das K. Multiple atypical esophageal foreign bodies in an infant. J Indian Assoc Pediatr Surg 2020;25:242-4.

Access this article online

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DOI: 10.4103/jiaps.JIAPS_101_19

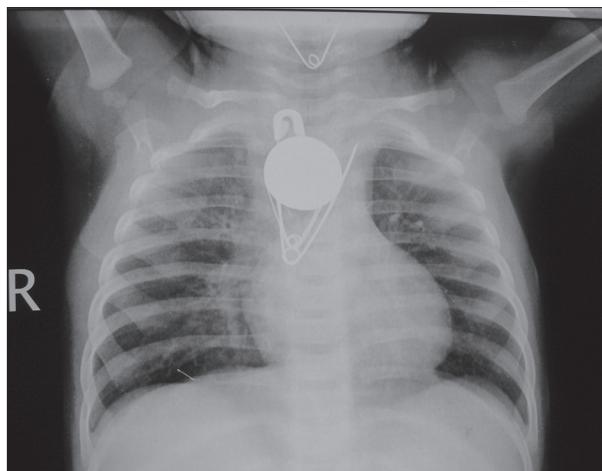


Figure 1: Chest X-ray, anteroposterior view, showing four open safety pins and one mid-thoracic coin

was not visualized with the rigid scope and a flexible one was not available.

She had an uneventful postoperative recovery and discharged on the 7th postoperative day on oral feeds. Although features suggested a clear homicidal intent, the psychosocial evaluation of the mother/caretakers was inconclusive. Nevertheless, the child protection authorities were alerted and the mother duly counseled. The child and caretakers were last seen 6 months thereafter.

DISCUSSION

Children account for 75%–80% of patients with FB in the upper gastrointestinal tract with a preponderance between 18 and 48 months of age. The age-related susceptibility is attributed to relative motor incoordination, limited perception of danger, and increased impulsivity. The male prevalence correlates with the higher manipulative and inquisitive nature of boys and indulgence in dangerous games.^[1] Against these generalizations, the reported case was a female infant, and the circumstances were suspicious of a homicidal intent. Two neonates described in a 2004 report^[2] were the youngest reported till then, a recent neonatal death due to a button battery emphasizes the continuing problem.^[4]

Coins are the most commonly ingested FB. While marbles, rings, lithium batteries, and bony/boneless meat chunks are commonly ingested blunt objects, less common sharp ones include open safety pins, razor blades, metallic wire, sewing needle, and fish bones.^[1] Infants and neonates may also ingest any of these in varied circumstances.^[2-4] About 35% of children with esophageal FB and a history of witnessed ingestion by parents or caretakers are asymptomatic.^[5] The rest present with acute (gagging, drooling, dysphagia,



Figure 2: Multiple foreign bodies (open safety pins and coins) after retrieval

and choking) or chronic symptoms (irritability, poor feeding, odynophagia, failure to thrive, and fever),^[6] though the sudden onset of salivary drooling and regurgitation of feeds was characteristic.

Although the age and habitus are important determining factors, small and blunt ones negotiate the entire gut uneventfully; 70%–80% that get impacted do so at the cricopharyngeal narrowing. Complications are higher with sharp objects and range from 1% to 35% depending on the number and type of FB and the contact time.^[7] Besides the more common retropharyngeal abscess, sharp FBs have been reported to cause esophageal perforation, empyema, aortic pseudoaneurysm, esophagoaortic fistula, pericardial-esophageal fistula, and lethal cardiac tamponade. Such FB, like the open safety pins here, must be retrieved at the earliest because of their propensity to migrate into extraluminal locations and impinge on adjacent vital structures.^[8] Multiplanar radiological localization is mandatory before intervention for confirming the presence, site, and number of FB. Although skiagrams and fluoroscopy readily locate radiopaque FB, advanced imaging modalities are required for radiolucent and complicated FBs.^[9] As in this case, overlapping shadows can blur the presence of multiple FB.

Endoscopic removal with optical forceps is the preferred method of removal. In infancy, this is challenging.

Recent and blunt FBs can be safely retrieved, but chronic and impacted ones are difficult. Foley balloon extraction of FBs blindly or under fluoroscopic guidance and retrieval after pushing into the stomach are other options. Rigid scopes are preferred over flexible ones for the removal of sharp and penetrating FBs. Both modalities are used complementarily,^[10] yet 1%–18% of these require surgical intervention due to associated complications.

The described case was suspicious of homicidal intent on various counts – dubious historical setting, a female infant without a well-developed pincer grasp, and the presence of multiple, sharp, and blunt FBs. The absence of safety heads from the open safety pins augmented the suspicion. We reiterate that such bizarre incidents must be notified to administrative/police authorities and parents/caretakers be counseled appropriately to avoid future mishaps. Multiplanar skiagrams supplement routine anteroposterior views in radiopaque esophageal FB, and a combined endoscopic/open method with fluoroscopy is useful in difficult retrievals.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patients have given their consent for their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published, and due efforts will be made to conceal identity, but anonymity cannot be guaranteed.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

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