Multiple Atypical Esophageal Foreign Bodies in an Infant

Roma Varik, Attibele Mahadevaiah Shubha, Kanishka Das

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

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...
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. 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 were the youngest reported till then, a recent neonatal death due to a button battery emphasizes the continuing problem.

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. Infants and neonates may also ingest any of these in varied circumstances. About 35% of children with esophageal FB and a history of witnessed ingestion by parents or caretakers are asymptomatic. The rest present with acute (gagging, drooling, dysphagia, and choking) or chronic symptoms (irritability, poor feeding, odynophagia, failure to thrive, and fever), 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. 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. 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. 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 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.

REFERENCES
1. Uyemura MC. Foreign body ingestion in children. Am Fam Physician 2005;72:287-91.
2. Tasneem Z, Khan MA, Uddin N. Esophageal foreign body in neonates. J Pak Med Assoc 2004;54:159-61.
3. Zameer M, Kanojia RP, Thapa BR, Rao KL. Foreign body oesophagus in a neonate: A common occurrence at an uncommon age. Afr J Paediatr Surg 2010;7:114-6.
4. Janarthanan V, Moorthi K, Shaha KK. Fatality due to button battery lodgment in the upper digestive tract of a neonate: An unusual presentation. Am J Forensic Med Pathol 2019;40:298-301.
5. Chinski A, Foltran F, Gregori D, Ballali S, Passali D, Bellussi L, et al. Foreign bodies in the oesophagus: The experience of the Buenos Aires paediatric ORL clinic. Int J Pediatr 2010;2010. pii: 490691.
6. Miller RS, Willging JP, Rutter MJ, Rookkapan K. Chronic esophageal foreign bodies in pediatric patients: A retrospective review. Int J Pediatr Otorhinolaryngol 2004;68:265-72.
7. Kay M, Wyllie R. Pediatric foreign bodies and their management. Curr Gastroenterol Rep 2005;7:212-8.
8. Tokar B, Cevik AA, Ilhan H. Ingested gastrointestinal foreign bodies: Predisposing factors for complications in children having surgical or endoscopic removal. Pediatr Surg Int 2007;23:135-9.
9. Ma J, Kang DK, Bae Ji, Park KJ, Sun JS. Value of MDCT in diagnosis and management of esophageal sharp or pointed foreign bodies according to level of esophagus. AJR Am J Roentgenol 2013;201:W707-11.
10. Russell R, Lucas A, Johnson J, Yannam G, Griffin R, Beierle E, et al. Extraction of esophageal foreign bodies in children: Rigid versus flexible endoscopy. Pediatr Surg Int 2014;30:417-22.