



A Rare Presentation of Impaction of Triple Coin Ingestion at the Level of Cricopharynx with Simultaneity of Site and Alignment: A Case Report

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Abstract

A 4- year-old male child presented to the emergency department with an acute onset of vomiting with an alleged history of foreign body ingestion. A plain posteroanterior chest X-ray revealed a single circular opacity at the level of the cricopharynx consistent with an ingested coin. However, the x-ray neck lateral view was not consistent with coin ingestion due to the thickness observed. The child was planned for rigid oesophagoscopy and removal of foreign body. After the first coin was removed subsequent endoscopic examination revealed a second and third coin at the same location. This sporadic case of three ingested coins becoming impacted with perfect radiological alignment emphasizes the importance of thorough examination on endoscopy and the potential limitations of an X-ray in the initial assessment of an ingested foreign body.

Keywords: Foreign Body (FB) Ingestion; Aerodigestive Tract; Coin

Introduction

The ingestion of foreign bodies in the pediatric population presents a great challenge for surgeons. Commonly these events can be unwitnessed by parents, leading to an even greater diagnostic conundrum. The commonest ingested foreign body that impacts the esophagus in children is a coin. Cases of children swallowing more than one coin remain rare with very few cases reported in the literature. A case of multiple coin ingestion with

perfect radiological alignment is phenomenally rare with only two other cases reported in the literature [1,2].

This case highlights the importance of careful examination during the endoscopic examination and removal of foreign bodies. It also emphasizes the importance of re-examination after the main perceived foreign body is removed, especially in unwitnessed cases where both the object and the number of objects cannot be determined accurately.

Case Presentation

A previously fit and well 4-year-old male child presented to the emergency department with an alleged history of foreign body ingestion with an acute onset of vomiting (7-8 episodes). There was no evidence of airway compromise, odynophagia, or stertor and the child was otherwise systemically well.

The history given by his mother stated the alleged ingestion of multiple coins by the child at home. Preparing the patient for the procedure, the child was advised NPO and started on maintenance intravenous fluids.

Investigations

A posteroanterior X-ray chest and lateral view of the soft tissue neck was obtained that revealed a foreign body at the level of the cricopharynx (Figure 1-3).



Figure 1: X-ray Neck-chest PA view revealed round shaped FB in aerodigestive tract.

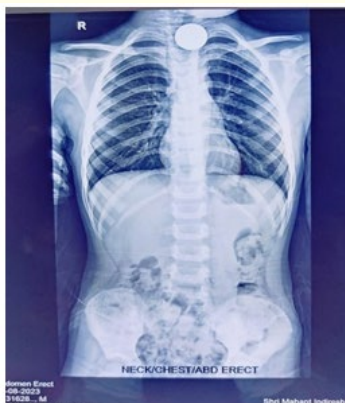


Figure 2: X ray neck/chest/abdomen (erect posture) revealed no other foreign body except at cricopharynx.



Figure 3: X ray neck (lateral view) revealed the thickness (Unusual with coin) and a possible groove (marked by blue arrow).

However, on the lateral view, the thickness of the shadow and groove visible raised the suspicion and probability of different/ types of FB or multiplicity (battery??).

Differential diagnosis

The diagnosis of a foreign body in the esophagus was clear from the X-ray and clinical picture, with the most likely sources being:

- A coin;
- Metal disc or another circular metallic object (eg, a battery).

Treatment

The child was taken to the operation theatre for rigid oesophagoscopy and removal of foreign body. Examination revealed a two-rupee coin at the level of the cricopharynx. After this was removed a second look revealed two coins of one rupee at the same level which were also removed (Figure 4).



Figure 4: Three coins removed endoscopically (Rigid instrumentation).

During the endoscopic evaluation, the three coins were not simultaneously evident and the other two coins were only visualized on further inspection.

Outcome and follow-up

Postoperative C- ARM chest and abdominal X-rays (figure 5) did not demonstrate any further foreign bodies.



Figure 5: Post-operative C-arm x ray negated possibility of any other FB (either unremoved/left or slipped down).

The child had an uneventful postoperative recovery and was initially started on sips of water, with gradual progression to formal liquids and then a soft diet. The child was discharged on next day, eating and drinking comfortably. There were no obvious postoperative complications noted.

Discussion

Foreign body ingestion by children is a very common problem presented to emergency departments. While some foreign bodies can be passed naturally through the gastrointestinal tract asymptotically, objects impacted within the esophagus commonly cause symptoms and therefore should be managed expectantly. Coins remain the most commonly ingested foreign body in children, accounting for as many as 60% of such cases [3]. Typically, coins become impacted in the proximal esophagus at the level of the cricopharynx [4], removal within 24–48 h is generally recommended [5]. The ingestion of multiple coins by children is rare; moreover, only two other cases of multiple coin ingestion with perfect alignment on X-ray have been reported [1,2].

Young children presenting with an acute onset of dysphagia, odynophagia, and stertor should be suspected of having ingested a foreign body. The presence of stridor or breathing difficulties raises the possibility of a foreign body in the laryngo-tracheo-bronchial region. These scenarios are potential airway emergencies that necessitate urgent removal of the foreign body in question.

A variety of techniques have been described to remove foreign bodies in the upper esophagus including endoscopy [6], Foley catheter extraction [7], the utilization of a bougienage [8], Magill forceps [9]. Rigid oesophagoscopy remains the gold standard for the removal of coins in the upper esophagus in children and this method of removal remains the first line in our centre.

Acute complications of an impacted coin include oesophageal perforation [10-12], respiratory distress, and even death [13]. Long-term sequelae include the formation of an oesophageal stricture [14] or tracheo-oesophageal fistula [15]. Early intervention is therefore paramount in preventing these life-threatening complications, and identification of multiple coins is therefore paramount to avoid unnecessary complications that may arise from assuming the foreign body has been removed.

The impaction of multiple coins with perfect radiological alignment presents a major diagnostic challenge. The importance of investigations and a further look after initial esophagoscopy in these unique scenarios is emphasized by the two other reported cases [1,2]. This has proved to be especially important when ingestion events are unwitnessed and no accurate history can be obtained from the child or parent.

Conclusion

A high index of suspicion must be kept while there is even the slightest doubt on inconsistent history or x-ray findings. We would therefore advocate having a low threshold for performing a 'second look' endoscopy after the removal of the first foreign body with postoperative X-rays.

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