Case Report

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Emergency Room Foley Catheter Retrieval of an Oesophageal Foreign Body In A Low-Resource Setting: A Case Series.

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ABSTRACT

Introduction: Infants are the most vulnerable population to oesophageal foreign bodies(EFB). They explore their environment with reflex hand-to-mouth gestures, putting them at even more risk. The presentation may be obvious and symptomatic, such as airway compromise, or silent, with subtle signs like drooling or refusal to feed. Therefore, the vigilance and awareness of parents and guardians are crucial for rapid diagnosis and management.

Case Series: We present two infants, a 12-month-old male and a 9-month-old male, with no relevant medical histories, brought in by their mothers with similar complaints of drooling and suspicion of ingestion of a coin at two different hospitals. A thorough clinical examination ruled out any signs of respiratory compromise; consequently, a chest X-ray was performed for both patients, revealing a coin at the thoracic inlet. Physicians trained in the concept of retrieval of EFB under mild sedation with a Foley catheter resulted in the successful retrieval of approximately 24mm coins with accompanying symptom resolution.

Intervention: While endoscopy remains the gold standard for EFB removal, alternative methods like Foley catheter extraction can be effective in selected cases. These cases highlight the usefulness of the Foley catheter method as a cost-effective, minimally invasive alternative for EFB removal in resource-limited settings. Proper patient selection, imaging confirmation, and procedural expertise are essential to minimize risks.

Conclusion: This technique is particularly suitable for blunt, radiopaque objects located in the upper oesophagus and for cooperative patients. These cases emphasise the importance of adaptable clinical strategies in emergency care, especially where endoscopic resources are limited.

Keywords: Childproofing, Esophageal Foreign Body, ENT, Emergency, Cameroon, Case Series

INTRODUCTION

Children frequently ingest foreign objects due to exploratory hand-to-mouth behaviour (1), with oesophagal foreign bodies (EFBs) being common in emergency settings, especially among children and the elderly. In Sokoto, Nigeria, EFBs accounted for 12.2% of ENT cases in 2019, with coins being the most frequent item (35%), and a male predominance (ratio 1.75) (2). Most foreign bodies are found in the upper esophagus. Endoscopy is the gold standard for removal, but limited access in low-resource areas necessitates alternatives (3).

The Foley catheter technique, first described in the mid-20th century, offers a cost-effective solution for retrieving blunt, radiopaque objects from the proximal oesophagus (1,4). It is suitable when the patient is stable and there are no contraindications, such as sharp edges or caustic injury. Though primarily used in children, it has shown success in adults (2). This technique has, however, been sparsely used in our current dispensation, probably due to advancements in technology and the presence of safer and more efficient methods of retrieval. To present a cost-effective method of retrieval of EFBs, this case series presents two successful Foley catheter extractions, emphasising their clinical value, safety, and ethical relevance in resource-limited emergency care.

Case 1

A 12-month-old male infant was brought to the emergency department at Presbyterian Health Complex Nsimeyong Yaounde with symptoms of drooling, mouth opening, and refusal to feed. He appeared distressed, with neck hyperextension and a mildly altered general status. Vital signs were stable, and no cyanosis or abdominal distension was noted. Chest wall movements were age-appropriate, and abdominal findings were benign. A lateral and AP chest X-ray revealed a circular radiopaque object, likely a coin lodged at the thoracic inlet in the proximal oesophagus (Figure 1).

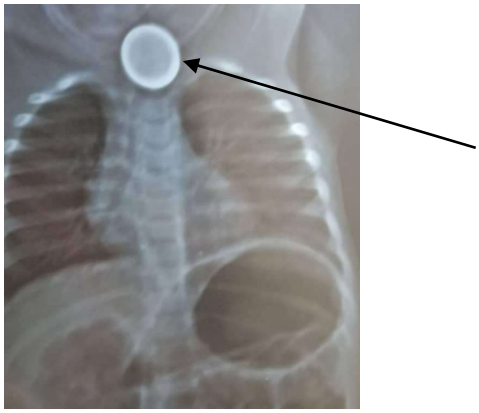

Figure 1: Chest X-ray in AP view of a 12-month-old known to have ingested a coin.

After obtaining informed consent and confirming the absence of contraindications, the team prepared for Foley catheter retrieval. The child was placed in dorsal decubitus with slight head flexion. Following an 8-hour fast, mild sedation with IV diazepam was administered to relax voluntary muscles while preserving the gag reflex. A 12 Fr Foley catheter was lubricated and gently inserted through the mouth. External anatomical landmarks guided insertion depth, and aspiration confirmed esophageal placement. The balloon was inflated with air, and with controlled traction and upward neck massage, the coin was successfully extracted (Figure 2).

Figure 2: 12-month-old post extraction of coin using a foley catheter.

Post-procedure care included airway reassessment and monitoring in the recovery room. A stat dose of dexamethasone was given to reduce potential edema. The infant remained stable, with no signs of bleeding or respiratory compromise. At a one-week follow-up, he showed no evidence of dysphagia or complications, confirming the safety and effectiveness of the Foley catheter technique in a resource-limited setting. This case highlights a practical, low-cost alternative to endoscopy for esophageal foreign body removal.

Case 2

A 9-month-old infant was urgently brought to the Regional Hospital Annex Nkambe after ingesting a 100 FCFA coin. The mother reported immediate gagging, persistent fussiness, refusal to feed, and excessive drooling. Within an hour, the child developed intermittent coughing and noisy breathing, though there were no signs of infection or prior choking episodes. On examination, the infant appeared distressed with neck hyperextension, profuse drooling, inspiratory stridor, and mild intercostal retractions, indicating upper airway compromise. Vital signs were stable, and no cyanosis or abdominal issues were noted.

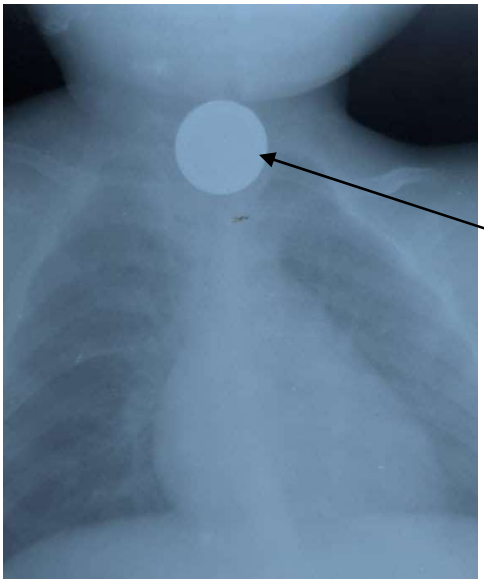

Figure 3: Chest X ray of 9-month-old known to have ingested a coin

Radiographic imaging (Figure 3) confirmed the presence of a circular radiopaque object lodged in the proximal esophagus at the thoracic inlet. Given the risk of aspiration and potential esophageal damage, an urgent extraction was performed under general anaesthesia. Direct laryngoscopy revealed the coin, and a Foley catheter was inserted past it. The balloon was inflated and gently pulled back, successfully retrieving the coin without complications (Figure 4). The esophagus was inspected for perforation, and the infant was extubated without incident.

Figure 4: Tail surface of Coin retrieved from esophagus of 9-month-old using a foley catheter

DISCUSSION

This paper describes the procedure of retrieving an EFB using an uncommon but practical technique. Whilst the primary treatment for lodged foreign bodies in the esophagus in children and adults remains endoscopic removal (4,5) and surgical removal in the event of failure (1), this technique sheds light on the possibility of having a similar result, in a shorter time frame with very little or mild sedation. In a setting where expert critical care is not easily reachable, with a notion of the high cost accompanying such elaborate procedures, innovative cost cost-effective, and rapid procedures such as these are pivotal in providing critical care to selected cases.

The Foley catheter balloon technique is an effective alternative for extracting blunt, smooth, radiopaque objects (e.g., coins, buttons) lodged in the upper or mid-esophagus of stable, cooperative pediatric or adult patients. This method applies only when no perforation, strictures, or corrosive materials are present and the object fits within the

esophageal diameter. The procedure should be performed by experienced practitioners with sedation, emergency endoscopy backup, and is especially useful in resource-limited settings. Sharp objects, batteries, magnets, airway compromise, bleeding, and objects lodged beyond 24 hours are contraindications.

Historical data report high success rates when strict inclusion criteria are followed. Hawkins et al. demonstrated effective coin removal within 24 hours using this technique, emphasizing its simplicity, low cost, and minimal infrastructure requirements. However, risks such as balloon dislodgement into the airway, mucosal injury, and incomplete retrieval necessitate careful procedural safeguards. While rigid endoscopy remains the gold standard for esophageal foreign bodies, the Foley catheter method represents a valuable adjunct in low-resource environments when timely endoscopic intervention is unavailable, demonstrating the importance of contextual decision-making and medical improvisation.

CONCLUSION

EFBs could pose significant risks if not identified and treated accordingly. While endoscopy remains the gold standard, most rural areas are still deprived of this luxury. As such, adapting clinical practice to this context will involve the use of this technique. Strict observation and application of exclusion criteria is primordial to the success and applicability of this technique.

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