***Case report***

**SURGICAL MANAGEMENT OF NEEDLE INGESTION IN A LOW-RESOURCE SETTING: A TWO-CASE REPORT**

**Abstract**

Foreign body ingestion constitutes a significant clinical and emergency concern, particularly among pediatric populations but also affecting adults, often leading to serious or life-threatening complications. Presentation commonly varies depending on the ingested object's type and location; potential squeal include mucosal injury, perforation, mediastinitis, and abscess formation. This report details two cases of sharp foreign body ingestion with distinct predisposing circumstances: (1) an 11-year-old boy who ingested a sewing needle following peer provocation, and (2) an 18-year-old female fashion designer who accidentally swallowed a safety pin in the workplace. Both patients presented with neck discomfort and localized tenderness, and radiographs confirmed transverse positioning of the foreign bodies within the upper esophagus. Due to the absence of available emergency endoscopy services, surgical intervention under general anesthesia was performed successfully in both instances. A transverse cervical approach allowed the safe extraction of the foreign bodies without injury to adjacent structures. Postoperative recovery was uneventful in both patients, with satisfactory outcomes following short periods of nil per os and antibiotic therapy. These cases underscore the necessity of prompt diagnosis and individualized management in resource-limited settings, where surgical retrieval may remain the mainstay when less invasive methods are unavailable. The report highlights the importance of public health education to mitigate risk factors; intentional or accidental and advocates for improved access to endoscopic services. Early intervention is critical to minimizing morbidity and preventing dire complications in cases of sharp foreign body ingestion, especially in low-resource settings.

**KEYWORDS: Foreign Body, ingestion, surgery, Needle.**

**1.0 BACKGROUND**

Ingestion of foreign bodies is a frequent clinical issue that can lead to serious health complications. This condition refers to the swallowing of any object whether done deliberately, accidentally, or incidentally during routine activities such as eating or taking medication. Under certain conditions, these ingested items can become impacted, pierce and erode soft tissues, thereby causing further complications. Cases of foreign body ingestion involving the gastrointestinal tract are commonly encountered in emergency departments, with children being the most frequently affected population [1].

Based on the 2021 Annual American Association of Poison Control Center report, FB ingestion in children less than 5 years accounted for approximately 55000 cases with higher rates observed among boys [2].

Foreign bodies tend to lodge in the points of anatomical narrowing of esophagus [3]. Esophageal coins usually lodge in the upper esophageal sphincter/thoracic inlet (60-70%), mid-esophagus at the level of the aortic notch (10-20%), and above the lower esophageal sphincter (20%) [4].

Clinical presentation varies depending on the type and location of the FB ingested however common symptoms may include drooling, vomiting, dysphagia, throat, or chest pain [5]. Possible complications of FB ingestion include the development of ulceration, bleeding, fistula formation, perforation, mediastinitis, or abscess [6]

About 10–20% cases of ingested foreign body will require non operative intervention and 1%, or less, will require surgery [7]. Prior to the development of modern surgical and endoscopic techniques, the rates of morbidity and mortality associated with the ingestion of sharp objects were reported as 35% and 26%, respectively [8].

**Case presentation**

**2.0 CASE 1**

**2.1 History and Examination**

An 11 year old boy was brought to the surgical emergency department of the hospital within 30minutes of ingestion of a sewing needle after being dared by his friends to do so. The child was crying due to the pain however, no history of bleeding from the neck or coughing of blood. General physical examinations were satisfactory but the child was in distress. On examination of the neck, a protruding object was seen at the anterior neck however there was no respiratory distress which indicated that the object was in the esophagus. Lateral view of the Radiograph of the neck was taken to reveal the position of the needle and it was observed to be in a transverse position.



**Figure1. Ingestion of a sewing needle by an 11-year-old boy**



**Figure 2: Lateral view of the Radiograph of the neck**

**2.2 Management**

**Post operation Note**

The child was the prepped for immediate surgery. His weight, height and vital signs were documented. The surgery was done under General Anesthesia with an oral pharyngeal airway inserted to prevent the tongue from collapsing. The surgical site was cleaned extensively with 2 antiseptics (Savlon and Spirit) to maintain asepsis. A transverse incision was made on the anterior part of the neck (skin) just below the location of the needle. The incision was developed and extended through the various tissue layers until the needle was in sight. A 3- inch needle was removed from the upper part of the esophagus with a tissue holding forceps. There was no damage to the adjacent structures like the trachea or nearby blood vessels and nerves. This was mainly due to the fact that the needle was conveniently trapped by the muscle of the esophagus. The tissues and the skin were closed in layers and via continuous suturing using vicryl 2.0 along the crease of the skin. The child made good recovery and placed on Nil par oral for 3days before started on graded oral sips. He was discharged with after 4days on admission with a 1 week follow-up visit.

**3.0 CASE 2**

**3.1 History and Examination**

An 18 year old lady was brought into the Accident and Emergency after 48 hours of ingesting a safety pin. She happens to be a fashion designer who was working and talking whilst the safety pin was in her mouth the she suddenly swallowed the pin. She presented with a feeling of foreign body sensation and sharp pain in her throat which was not radiating, no history of vomiting but she tried inducing one. No dysphagia or odynophagia. No difficulty with breathing, choking spells and hoarseness of voice. She is known to have gastric acid dyspepsia, no other medical condition and nil previous surgeries in this past

General physical examination was essentially normal, vital signs were stable and on neck examination, there was tenderness at the upper anterior neck but tracheal was central.



Figure3 **Radiograph of the neck revealing the position of the needle**

**3.2 Management**

As in case 1, lateral view of the Radiograph of the neck was taken to reveal the position of the needle and it was observed to be in a transverse position. She was prepped for surgery. The surgery was done under General Anesthesia with an oral pharyngeal airway inserted to prevent the tongue collapse. The surgical site was cleaned extensively with 2 antiseptics (Savlon and Spirit) to maintain asepsis. A transverse incision was made on the anterior part of the neck (skin) just below the location of the needle. The incision was developed and extended through the various tissue layers until the safety was in sight which was seen located midpoint between the proximal part of the esophagus and the other just distal to the sternal notch. There was no injury to the adjacent structures like the trachea or nearby blood vessels and nerves. The tissues and the skin were closed in layers and via continuous suturing using vicryl 2.0 along the crease of the skin. She made good recovery and placed on nil par oral for 3days before started on graded oral sips. She received antibiotics and pain relief. She was discharged with after 6days on admission with a 1 week follow-up visit.

**4.0 DISCUSSION**

Most ingested foreign bodies typically pass through the gastrointestinal (GI) tract without causing symptoms and lead to only minor injury to the mucosa. Nonetheless, about 10% to 20% of cases require some form of non-surgical intervention, while 1% or fewer experience complications such as bowel obstruction, perforation, severe bleeding, abscesses, or septicemia, which may necessitate surgical treatment as seen in this study, hence its relevance [12]. Endoscopy is the preferred initial method for removing foreign bodies from the GI tract and stands as the safest and most effective approach for both diagnosis and treatment. This minimally invasive technique involves using an endoscope equipped with a camera and instruments to locate and extract the foreign object [13]. However, scarcity of emergency endoscopy and/or endo-therapeutic services in most hospitals even in tertiary centers poses great limitation in rural areas of Nigeria. A similar observation has been made by other authors who previously noted a lack of endotherapy services in Northern Nigeria were most tertiary centers were seen to be always full with limited services and this can lead to a lot of mortality from airway complications [14]. This makes exploratory laparotomy explicit in cases like this.

Ingestion of foreign bodies is a frequent medical concern that can lead to serious, potentially life-threatening complications [9]. Certain foreign bodies particularly those that are sharp, large, or of specific types such as batteries can lead to severe complications. These may include impaction, tissue erosion, mediastinitis, perforation, abscess formation, ulceration, empyema thoracis, oesophagoaortic fistula, and even death [10]. But in the cases discussed, there were no overt symptoms however, both were precariously lodged in the gullet which had a propensity of causing potential harm on the long run.

In approximately 80% of cases, foreign body ingestion is asymptomatic, with the object passing through the gastrointestinal tract without causing complications. Endoscopic intervention is needed in about 20% of cases, while surgical treatment is required in less than 1% of instances [11]. As seen in this study, surgical intervention was needed in both cases due to the fact it was the most accessible technique and affordable procedure in the locality.

**5.0 CONCLUSION**

Both cases in this study were quite unique and interesting because of the circumstances in which they occurred. Children on the one hand will want to attempt silly things without undermining the consequences which can be devastating on the long run. Teenagers and adults on the other hand may willingly ingest harmful substances and foreign body depending on their state of mind as in psychiatry cases, suicidal attempts, drug smuggling or unintentionally as seen in the case above occurring at the work place. However, whichever be the case, prompt action is very important in avoiding the dire complications that can result from this when cases present late.

**CONSENT**

As per international standards or university standards, patient(s) written consent has been collected and preserved by the author(s).

Disclaimer (Artificial intelligence)

Authors hereby declare that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc) and text-to-image generators have been used during writing or editing of manuscripts. This guarantees the fact that the originality of the study was maintained.

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