



Case report

Spontaneous passage of accidentally ingested metallic nail in an adult: A case report

Yoseph Solomon Bezabih^{a,b,*}, Mustofa Essa Getu^c^a Debre Markos University, School of Medicine, Department of Surgery, PO Box 26, Debre Markos, Ethiopia^b Addis Ababa University, College of Health Sciences, Ethiopia^c Debre Markos University, School of Medicine, Department of Radiology, PO Box 269, Debre Markos, Ethiopia

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ABSTRACT

Introduction and importance: Foreign body ingestion is most common in children, as well as adults with neurodevelopmental and psychiatric problems. The most commonly swallowed foreign bodies in adults include fish bones, chicken bones, toothpicks, and dentures. Sharp and elongated ones are the most typical causes of gastrointestinal perforation among the aforementioned. In about 1% of cases, foreign bodies are known to remain lodged within the bowel and cause luminal erosion and perforation.

Case presentation: A 23-year-old male construction laborer presented to the Emergency Surgical Unit of Debre Markos Hospital 7 h after he accidentally swallowed a nail while at work. He didn't have abdominal pain, vomiting, or rectal bleeding. On exams his vital signs were stable. His chest and abdominal exams as well as the digital rectal examination were unremarkable. He was evaluated with a plain erect abdominal x-ray based on his complaint, which revealed a long nail lying longitudinally in the right lower quadrant of the abdomen. Twenty-nine hours after swallowing the iron nail, he passed it through his rectum spontaneously.

Conclusion: Plain radiography should be performed to locate and follow-up on radiopaque foreign entities before sophisticated imaging and invasive procedures. When treating people who have accidentally ingested a sharp foreign body, clinicians should find a balance between prompt action and careful follow-up.

1. Introduction

Foreign body ingestion it is most common in children as well as adults with neurodevelopmental and psychiatric problems. The majority of foreign body ingestions in adults are unintentional. Toothpicks, dentures, and turban pins are frequently swallowed foreign bodies [1]. Patients with foreign body ingestion might present asymptotically or with a variety of symptoms, depending on the type of foreign material ingested and how long it remained in the body. Sharp and elongated objects, such as straight pins, cause 15%–35% of foreign body-related intestinal perforations and should be removed, especially if caught in the esophagus or stomach [1,2]. A simple x-ray is helpful for both diagnosis and follow-up in asymptomatic individuals with a swallowed radiopaque item [3].

Below we present a 23-year-old male who came after he accidentally ingested a long nail and passed the nail spontaneously. This case is reported in line with the SCARE criteria [4]. By presenting this case report,

we hope that clinicians will be more aware of the significance of close clinical and serial radiography follow-up for individuals who have swallowed a foreign body.

2. Case presentation

A 23-year-old male construction employee presented to Debre Markos Hospital's Emergency Surgical Unit 7 h after he accidentally swallowed a sharp elongated nail while at work. The patient reported he was pounding another nail while holding the swallowed nail between his lips. He didn't have abdominal pain, nausea, vomiting, or rectal bleeding. He had no episode of choking, cough, chest pain, or shortness of breath. He has no self or family history of any neurodevelopmental or psychiatric disorder. He has no self or family history of chronic medical conditions like asthma, hypertension, diabetes, or heart disease. He denied ever abusing substances or drugs.

On exams his vital signs were stable. There were no missing teeth or

* Corresponding author at: Debre Markos University, School of Medicine, Department of Surgery, PO Box 26, Debre Markos, Ethiopia; Addis Ababa University, College of Health Sciences, Ethiopia.

E-mail address: josephsol87@gmail.com (Y.S. Bezabih).

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malocclusions in his oral cavity. His chest and abdominal exams as well as the digital rectal examination were unremarkable. The results of his hematologic examination were within normal limits. An erect abdominal x-ray was performed 8 h after he ingested the metallic nail, and it revealed a radiopaque, elongated, and sharp-pointed object lying obliquely in the right lower quadrant of the abdomen, likely in the terminal ileum (Fig. 1).

Because the patient was stable and there was no free peritoneal air visible on the x-ray, we decided to admit the patient to the surgical ward, monitor his vital signs, and follow him with abdominal examination and serial abdominal x-rays. On further examination, he had no complaints; his vitals were within normal limits. According to a follow-up abdominal x-ray obtained 14 h after the first x-ray, the nail had moved down to the left side of the lower abdomen - the distal descending colon (Fig. 2). Two hours later, another x-ray revealed the nail in the rectum, and 5 h after, the patient passed the nail per rectum (Fig. 3).

We monitored the patient's vital signs and abdominal condition for 24 h after the metallic nail had passed, and we discharged him in a stable condition. He was re-evaluated six weeks later at the surgical referral clinic, and his examinations went uneventful. A six-month follow-up phone contact was made, and the patient is still going about his daily routine as previously. The patient was followed in a Referral Hospital by a general surgeon who has three years of experience.

3. Discussion

Foreign body ingestion is most common in children, as well as adults with neurodevelopmental and psychiatric problems [1,3,5]. The most commonly ingested items include coins, batteries, toys, marbles, erasers, and bones [3,6]. Patients with foreign body ingestion might present asymptotically or with a variety of symptoms, depending on the type of foreign material ingested and how long it remained in the body. Symptomatic patients may have abdominal discomfort, nausea, and vomiting, as well as hematemesis, rectal hemorrhage, fever, and diarrhea [7]. Our patient is an adult who does not have any of the key risks for foreign body swallowing and had no other complaints except a history of metallic nail ingestion.

Most radiopaque foreign bodies in the gastrointestinal tract can be detected by radiography. Imaging is crucial in determining whether to go with conservative treatment, surgery, or endoscopic intervention,

especially in patients who are clinically stable after ingesting a foreign body. Plain radiographs can be used to determine the number, size, location, and orientation of radiopaque foreign substances, as well as the presence of sharp edges [6]. Furthermore, x-rays can indicate free peritoneal air in the event of intestinal perforation, and serial scans can be utilized to track the foreign body's progress. On the other hand, X-rays can't rule out the presence of small and radiolucent materials like glass, wood, and thin metals [6,8,9].

Intestinal perforation following ingestion of foreign body occurs most frequently at points of physiological angulation or narrowing within the digestive tract, with the ileal loops accounting for up to 83% of all cases. Inadvertently ingesting a fishbone is the most prevalent cause of gastrointestinal perforation [9,10]. The extent and urgency of a potential intervention are determined based on the anatomical region where the foreign body is located; the information provided by the patient about the type of foreign body ingested; as well as the clinical complaints and physical examination findings [6,9]. Batteries and sharp objects should be removed as soon as possible, either endoscopically or surgically, to avoid intestinal perforation and infection [9,11]. In this case, the patient ingested a long, sharp-tipped nail, and he presented 7 h later after the foreign body had passed through most of the small bowel.

The failure of ingested material to move along the gastrointestinal track in asymptomatic individuals is another challenge in the management of foreign bodies. Persistence of an asymptomatic foreign body in the upper gastrointestinal tract, in addition to signs and symptoms of perforation or obstruction, can be a relative indication for endoscopic removal. Those trapped for more than one week distal to the stomach in a fixed persistent site such as the ileocaecal junction may necessitate surgical intervention [12,13]. In one case report, Chukwubuike reported spontaneous passage of a long nail in a 2 years old child [3]. In another case, Mostafa Zain et al. reported accidental ingestion of a long nail in a 2 years old child, and the child was managed with exploration and removal of the foreign body from the duodenum through a gastrostomy [2]. These cases demonstrate that the treatment of ingested long and sharp foreign bodies should be tailored to the individual based on the factors mentioned in the preceding paragraph.

This case shows the place of conservative management of swallowed foreign bodies. Follow-up with regular clinical examinations and serial radiographs should be significant aspects of the management of adults who accidentally swallowed foreign bodies and are asymptomatic [9].

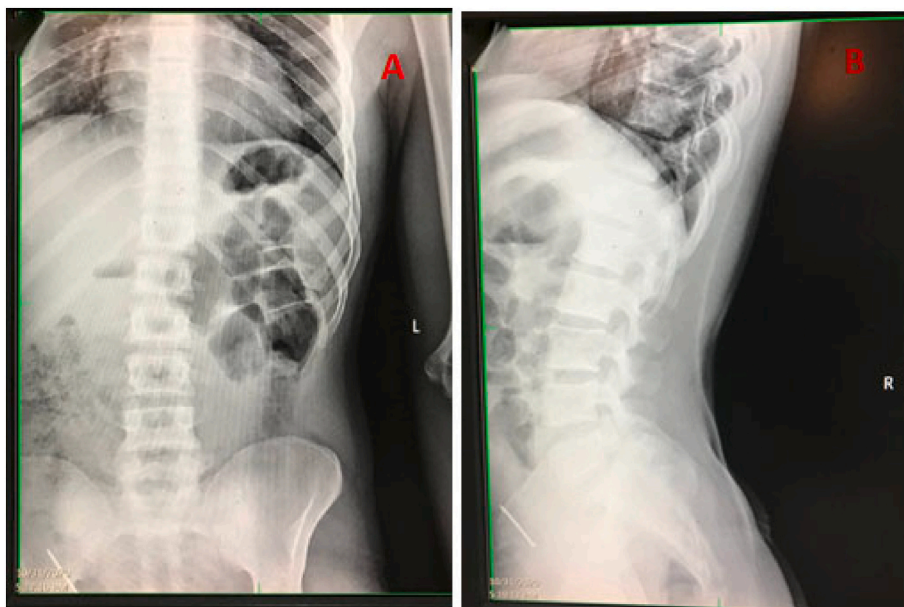


Fig. 1. Antero-posterior view (A) and lateral view (B) abdominal films taken 8 h after of ingestion; showed sharp and elongated radiopaque foreign body (nail) in the right lower quadrant abdomen likely terminal ileum.

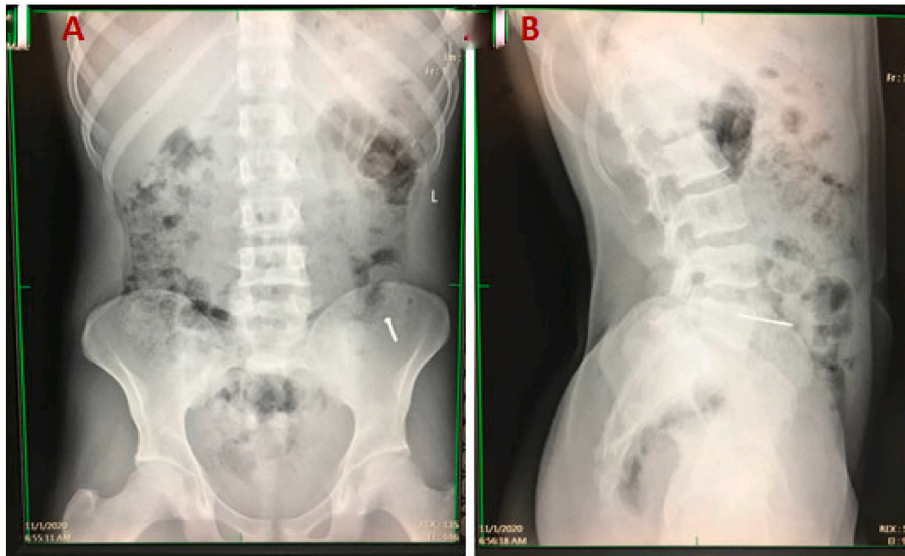


Fig. 2. Antero-posterior (A) and lateral (B) abdominal films 22 h after the ingestion; the foreign body descends to left lower quadrant abdomen likely in the distal descending colon.

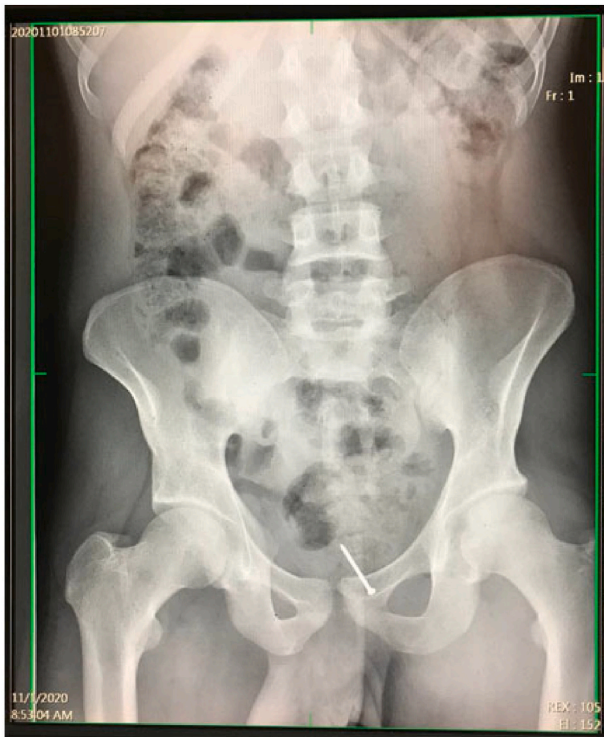


Fig. 3. Antero-posterior abdominal film 24 h after the ingestion; the foreign body descends to the rectum.

Adults who do not have neurodevelopmental or psychiatric problems, such as our patient, can easily communicate their symptoms if complications such as intestinal perforation arise. So, once conservative management is decided, clinicians must take a thorough history and conduct a comprehensive examination with a low exploratory threshold [6].

4. Conclusion

Clinicians should maintain a balance between prompt action and conservative follow-up when treating adults who have inadvertently

ingested a sharp foreign body. Before advanced imaging and invasive procedures, plain radiography should be used to locate and follow-up on radiopaque foreign bodies. It is critical to do frequent and routine clinical assessments, including a history and physical examination, to identify and treat complications as early as feasible.

Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

Provenance and peer review

Not commissioned, externally peer-reviewed.

Ethical approval

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CRediT authorship contribution statement

The authors contributed equally to this work.

Declaration of competing interest

None.

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