

CASE REPORT

Spontaneous passage of ingested sewing needle: A case report

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Key Clinical Message

- Sewing needle ingestion is a rare but potentially dangerous event that can affect people of all ages and backgrounds like this patient.
- Conservative management with serial abdominal examination and x-rays can be a reasonable option for patients who do not show signs of perforation or sepsis, as most foreign bodies will pass spontaneously without complications such as this case.

Abstract

Though rare, swallowing a sewing needle is a peculiar and potentially dangerous health risk. People of all ages and backgrounds can accidentally ingest sewing needles, with cases documented in both children and adults. Our case focuses on a 17-year-old Ethiopian girl who accidentally gulped down a needle while stitching her clothing. Subsequently, she had an episode of vomiting that was tinged with blood along with ingested matter. Remarkably, the patient underwent conservative management using repeated abdominal checkups and x-rays, successfully passing the broken needle without any surgical intervention. It is important to remember that while uncommon, ingesting sewing needles might lead to significant complications, necessitating immediate and appropriate care.

KEYWORDS

ingested, needle, passage, spontaneous

1 | INTRODUCTION

Ingestion of foreign bodies primarily affects the pediatric population, peaking in occurrence between the ages of 6 months and 6 years.^{1,2} Adults with mental impairment and psychiatric illnesses are frequently affected. Numerous causes, including self-demanding impulsivity, attention-seeking behavior in people with personality disorders, and

command hallucinations in cases of schizophrenia, can lead to the purposeful swallowing of foreign bodies.³ Other causes of foreign body ingestion are accidental ingestion (like this patient), occupational hazards (such as construction workers), alcohol or drug intoxication, dental problems (such as loose or broken dental appliances), and impaired sensation in the mouth or throat. Surgeons face a significant problem when it comes to effectively managing foreign body

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ingestion. Depending on where the impaction is, foreign objects, especially sharp ones, might cause injury to the gastrointestinal tract or the solid organs.

Most foreign objects in the digestive system resolve naturally and without any problems when they come with the feces. However, they can occasionally result in obstruction and hollow viscous perforation. The majority of foreign body ingestions present with no symptoms, and conservative treatment may suffice; nevertheless, should complications such as obstruction or perforations arise, surgical intervention becomes imperative for the patient. In cases where abdominal pain arises and radiography fails to reveal the progress of a foreign body, the possibility of organ perforations must be taken into consideration. It is fortunate that instances of ingested foreign bodies perforating the intestine and entering the peritoneal cavity are rare.^{4,5}

When a surgical intervention is considered, the necessity of imaging localization for the foreign body cannot be overstated. Nevertheless, the intraoperative localization of these objects can prove to be quite challenging, particularly when they are of insufficient length and thickness to be palpated, or when they are dispersed throughout the digestive tract. In such instances, the utilization of a metal detector can aid in achieving accurate localization, thereby facilitating targeted and precise therapeutic interventions.⁶ Here we present a case of sewing needle ingestion in a 17-year-old female patient which was managed conservatively with abdominal examination and serial x-rays.

2 | CASE HISTORY

She is a 17-year-old Ethiopian girl who accidentally swallowed a needle while sewing her cloth. The incident had occurred 7 h prior to the presentation. Following the incident, she visited the nearby health center where she was referred for further investigation and management (the delay in her presentation to the referral hospital was primarily attributed to the considerable distance from the hospital). She experienced one episode of vomiting, which contained ingested matter tinged with blood. Apart from this incident, she had no history of psychiatric illnesses or previous similar episodes.

Upon examination, the patient appeared comfortable, and her vital signs were within the normal range. Her chest was clear and resonant, indicating no abnormalities. Mild tenderness was observed in the left upper quadrant of her abdomen, but there was no generalized tenderness, guarding, or rigidity. There were no signs of fluid collection, and the rest of the examinations did not reveal any remarkable findings.

2.1 | Methods

Further investigations were conducted, including a complete blood count, which showed results within normal limits. An erect abdominal x-ray was performed, revealing a thin, long metallic foreign body (a sewing needle) located in the small intestine, and the chest x-ray was unremarkable (Figures S1 and S2).

2.2 | Outcome and follow-up

As a result, the patient was admitted to the hospital and placed on nothing-by-mouth (NPO) status. She received maintenance fluid and underwent regular abdominal examinations every 4 h. Serial plain abdominal x-rays were also conducted every 8 h to monitor the evacuation of the foreign body. During the follow-up imaging, it was observed that the needle had broken down into two pieces, possibly due to peristalsis (Figure 1). Finally, the patient passed the broken pieces on the second day of admission and control x-ray showed no foreign body (Figure 2). Subsequently, the patient was discharged and was appointed to the surgical referral clinic for follow-up. On follow-up at the surgical referral clinic at 2 weeks, the patient reported no symptoms.

3 | DISCUSSION

The patient's age influences the kinds of foreign bodies they ingested, however, accidental foreign body ingestion can occur in any age group such as this patient. Sixty-six percent of gastrointestinal foreign bodies detected in children under the age of 10 were coins; 60% of upper GI foreign bodies found in patients above the age of 11 were food boluses.^{7,8} Before reaching the anus safely, ingested foreign bodies must traverse around 26–28 ft (792–853 cm) of luminal intestine. Most foreign bodies (80%–90%) will pass on their own like in this particular patient. Endoscopic intervention will be necessary for 10%–20% of the gastrointestinal foreign bodies, and only a few patients require surgery.^{9,10}

In patients presenting with foreign body ingestion, such as the case of this particular individual, it is important to note that the most common sites for impaction or perforation are typically found at locations characterized by acute angulations or physiological constriction. These sites include the cricopharyngeus muscle (upper esophageal sphincter), aortic arch, left main stem bronchus, gastroesophageal junction (lower esophageal sphincter), pylorus, duodenal c-loop, ileocecal valve, and anus. It is crucial to recognize that the rate of complications in patients with

FIGURE 1 (A) AP plain abdominal x-ray showing a needle in the mid-abdomen at admission. (B) Lateral plain abdominal x-ray showing the needle likely in the small bowel at admission. (C) Follow-up x-ray showing broken needle (likely in the cecum and transverse colon). (D) Follow-up x-ray showing broken pieces in the rectum.

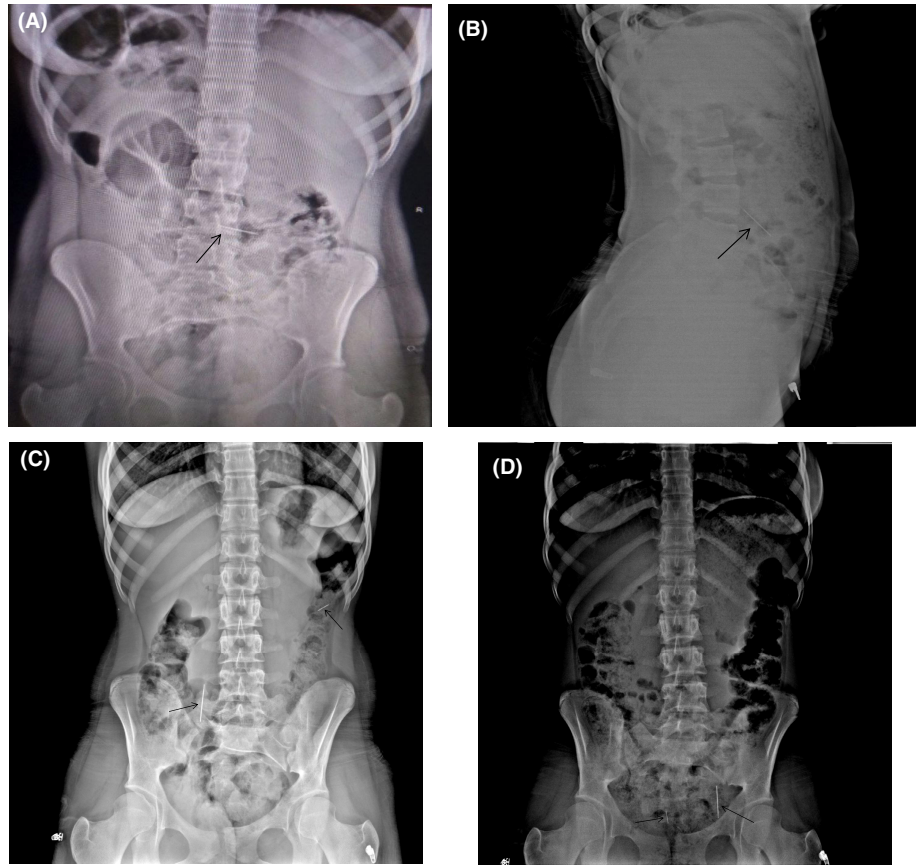


FIGURE 2 Follow-up x-ray after the patient passed the broken pieces.

esophageal foreign bodies is directly related to the length of time the object remains lodged in the esophagus.¹¹ In this specific case, the foreign body had already reached the small intestine by the time the patient arrived at the

hospital, approximately 7 h after the incident occurred. Perforations typically occur in 15%–35% of cases and are commonly caused by sharp objects.¹⁰ Fortunately, in this instance, the needle broke during its passage through the intestine, but without causing a perforation.

The patient's medical history frequently indicates the diagnosis like this patient. The patient may have an abrupt onset of dysphagia during eating, which is frequently accompanied by odynophagia or chest pain and difficulty managing secretions. This patient had accidental ingestion while holding the needle in the mouth and she had one episode of blood-tinged vomiting. A sudden refusal to eat, drooling, or respiratory symptoms like coughing or wheezing owing to aspiration should prompt the doctor to suspect foreign body ingestion in children who are unable to provide a history. A thorough physical examination should identify any peritoneal symptoms or subcutaneous emphysema, which are indicators of perforation. This patient did not have any of the above symptoms.

With regard to investigations, it is important to note that the presence of a foreign body may be visible on plain radiography. Additionally, the presence of subcutaneous air, pneumomediastinum, pneumoperitoneum or pleural effusion may indicate a perforation. Barium studies may yield limited results, while the use of gastrografin is not recommended in cases where obstruction is suspected due to its hypertonic nature, which could potentially lead

to aspiration-induced pulmonary edema.¹¹ Our patient underwent a plain radiographic study, including a chest x-ray and serial abdominal x-ray scans (which showed the sewing needle) conducted every 8 h, until the foreign body passed without any signs of perforation detected. It is worth noting that CT scanning is a more precise method compared to conventional radiography, with the ability to detect foreign bodies in 70%–100% of patients.¹²

Following the diagnosis of foreign body ingestion, the physician must determine whether action is required, whether a certain level of urgency is warranted, and what kind of intervention would be best. The perceived risks of aspiration and/or perforation determine when endoscopic intervention should be performed. The majority of inadvertently eaten foreign objects, including fishbones, teeth, sewing needles, and chicken bones, are naturally expelled through the anus. Only 1% of these foreign bodies cause perforation of the digestive system. The cricopharyngeal ring, cardia, pylorus, C-loop duodenum, ligament of Treitz, ileocecal valve, appendix, and rectosigmoid junction are frequently identified as common sites of perforation.^{13,14} This patient exhibited no signs or symptoms indicative of perforation, and the patient successfully passed the sewing needle without the need for surgical or endoscopic intervention.

However, in certain instances (although not applicable in this particular patient), when the needle is located in the esophagus or stomach and is easily accessible, endoscopic retrieval is often the preferred method. Nevertheless, in more severe cases where the needle has caused perforation in the digestive tract, migrated to other organs, or when endoscopic retrieval is unsuccessful, surgical intervention may be deemed necessary. The surgical procedure may entail making an incision in the abdomen to directly access and extract the needle. The determination of the appropriate management approach is contingent upon the specific circumstances of each case. It is imperative to carefully assess the potential risks and benefits of each method in order to ensure the optimal outcome for the patient. Fortunately, in this instance, the patient spontaneously passed the ingested sewing needle, obviating the need for any intervention.

4 | CONCLUSION

This particular incident of swallowing a sewing needle occurred in a 17-year-old Ethiopian female. This rare case was successfully managed conservatively through repeated abdominal examinations and x-rays. The patient showed improvement and was discharged without experiencing any complications. Hence, in cases of foreign body ingestion, where there are no signs or symptoms of

peritonitis, such as in this particular patient, conservative management may be considered a viable option.

AUTHOR CONTRIBUTIONS

Yohannis Derbew Molla: Conceptualization; writing – original draft; writing – review and editing. **Tewodros Baye Gelaw:** Conceptualization; writing – original draft. **Hirut Tesfahun Alemu:** Writing – original draft; writing – review and editing. **Melaku Tessema Kassie:** Conceptualization; writing – original draft. **Menarguachew Atanaw Sisay:** Writing – original draft; writing – review and editing.

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None.

CONFLICT OF INTEREST STATEMENT

No potential conflict of interest relevant to this article was reported.

DATA AVAILABILITY STATEMENT

The authors of this manuscript are willing to provide any additional information regarding the case report.

ETHICS STATEMENT

The case report has been submitted for Ethical Board Review and approved as an ethically sound report.

CONSENT

Written informed consent was obtained from the patient to publish this report in accordance with the journal's patient consent policy.

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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