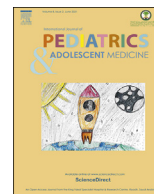


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## Incidental finding of a needle in the root of the mesentery of an 11-month-old boy: A case report

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### ABSTRACT

Foreign body (FB) ingestion is very common in the pediatric population. Children will have different presentations based on their age, size, type, and site of the ingested FB. Some children can present with serious complications, others can be completely asymptomatic.

An eleven-month-old male child, previously healthy, was following up with the family medicine department for a routine visit. A pelvic x-ray was done to rule out developmental dysplasia of the hip, and a needle was found incidentally in the small bowel loops. The child was completely asymptomatic. Daily radiographs were taken three days in a row and showed that the needle was still in place. The patient was then referred to the pediatric surgery department for laparoscopic exploration and removal of the needle before complications occur. During exploration, the needle was found at the root of the mesentery. The needle was taken out uneventfully without the evidence of perforation.

It is unusual to find a sharp FB located at the root of the mesentery in a completely asymptomatic infant as an incidental finding. Serial radiographic images after the initial presentation of foreign body ingestion is important to guide us through surgical intervention.

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### 1. Introduction

Ingestion of a foreign body (FB) is very common in young infants and generally among the pediatric population, and it is considered as one of the most challenging clinical scenarios for pediatric surgeons and gastroenterologists. It is not always considered as an emergency situation, as it depends on the type and size of the FB ingested [1]. Up to 90% of FBs pass spontaneously, reaching the gastrointestinal tract and pass out uneventfully requiring nonoperative interventions. However, dangerous FBs like needles, toothpicks, lollipop sticks, fish bones, and magnetic FBs can lead to many serious complications, such as perforation, penetration, and obstruction, which needs urgent surgical intervention and

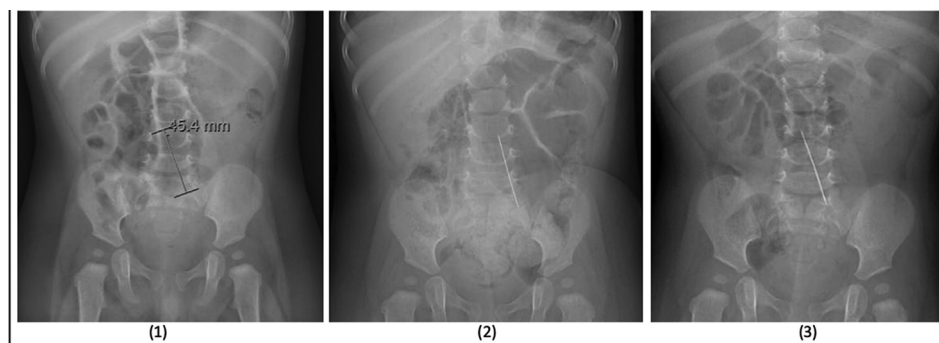


Fig. 1. Pelvic x-ray to rule out DDH. A needle found incidentally.

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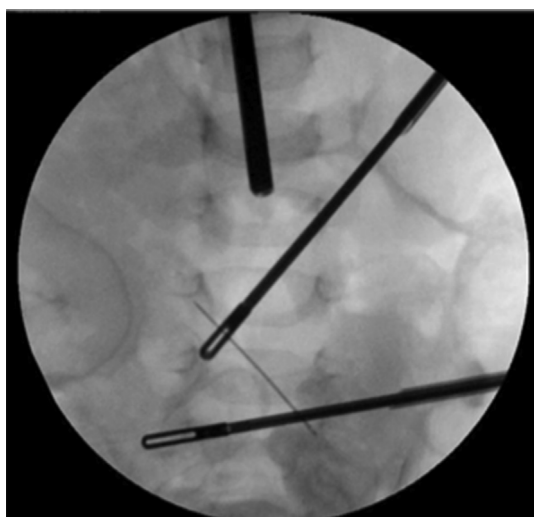
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**Fig. 2.** (1) First abdominal x-ray showing a long radiopaque needle about 4.5 cm in length, probably in the region of the small bowel loops, with no intestinal obstruction.

(2) Second abdominal x-ray showing needle projection over the mid lower abdomen, which is unchanged since previous x-ray. No signs of bowel obstruction or the presence of free air.

(3) Third abdominal x-ray showing needle projection over the central lower abdomen. No signs of bowel obstruction or perforation identified.



**Fig. 3.** C-arm fluoroscopy localizing the needle at the root of the mesentery.

radiographic monitoring because of potential morbidity caused by the puncture or laceration of vessels and organs [2,3]. In our paper, we report the case of an incidental finding of a sharp needle ingestion that kept the patient completely asymptomatic.

### 1.1. Case presentation

A eleven-month-old male child previously healthy was following up with his pediatrician in the general pediatric clinic for a routine visit. The patient was developing normally until eleven months of age when the mother noticed a delay in crawling and refusing to bear any weight on his legs. A pelvic x-ray was done to rule out developmental dysplasia of the hip, which was normal (Fig. 1). However, the x-ray showed an incidental finding of a needle that was seen in the left lower quadrant of the abdomen near the midline. The child was asymptomatic with a negative history of FB ingestion and his physical examination was unremarkable. Daily radiographs were taken three days in a row and showed that the needle was still in place with failure to progress (Figs. 2–5). The patient was then referred to the pediatric surgery department for further management. As the needle was fixed in its place on serial abdominal X-rays, the decision was made to take the patient to the operating room for laparoscopic exploration and removal of the

needle before complications occur. No trial of endoscopy removal was considered because the needle was found to be distally placed in the small intestine.

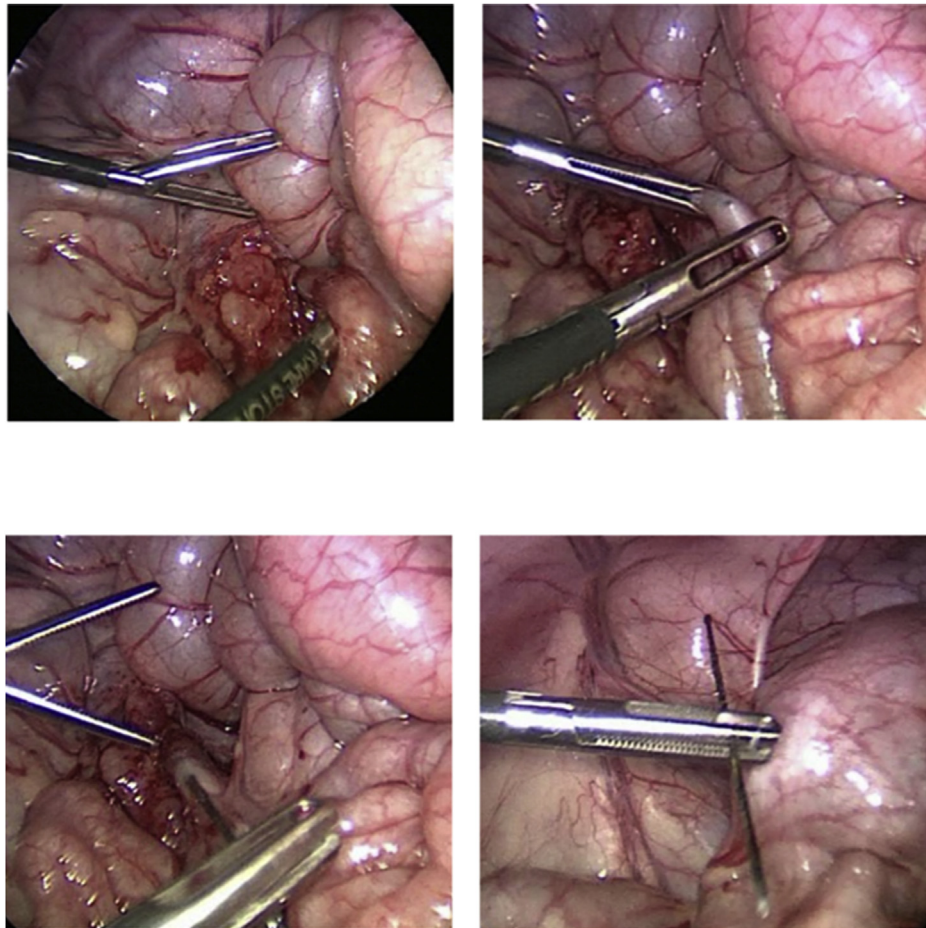
Laparoscopic exploration was started from the ileocecal valve, then the small intestines were checked segment by segment, but the needle was not visible. C-arm fluoroscopy was used, and the needle was identified at the root of the mesentery. The needle was taken out uneventfully without the evidence of perforation. The postoperative period was uneventful, and the patient was discharged in a stable condition on the same day.

## 2. Discussion

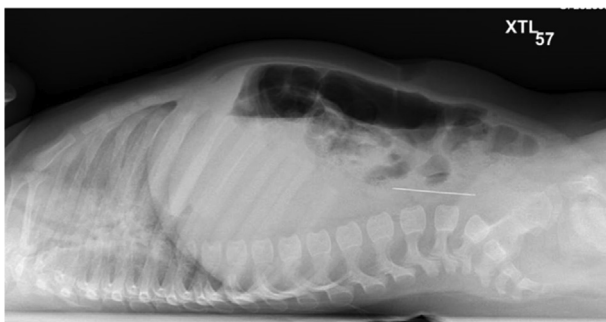
FB ingestion is a way that infants and children use to interact and explore the surroundings, especially in children aged between six months and five years. Although FB commonly passes without any harmful effects and impaction in the intestines is seen in less than 10% children, serious precautions should be taken and children with ingested FB should be closely observed [3]. Children with preexisting anatomical abnormalities might be at a higher risk for complications and impaction at the site of the abnormality. Once the FB passes the esophagus and reaches the stomach, it is less likely to cause any symptoms because the esophagus is a common site for impaction due to the 3 narrowing points. However, this is depending on the type, size, and shape of the FB.

As in reported cases in the literature, an FB that passes beyond the gastroesophageal junction usually passes through the gastrointestinal tract without any damage [4]. Complications like mucosal abrasions, bleeding, GI perforation, secondary mediastinitis, and peritonitis are usually seen with impaction in the intestines in less than 10% of children [2]. The literature also reported cases of ingested FB that migrate outside the intestinal tract, which are more dangerous and usually cause injury most frequently at the duodenum and sigmoid, which are the areas of angulation [5]. FBs, as incidental findings found in the literature are generally due to direct skin penetration and not migration beyond the gastrointestinal tract [6].

In our rare presentation, the needle migrated all the way to the root of the mesentery without causing any damage, as it remained fixed in place until it was found incidentally. No perforation, mucosal abrasion, intestinal necrosis, and no peritoneal inflammation was found, which is unusual. Most cases that were reported in the literature presented with significant complications such as abdominal pain, vomiting, and respiratory symptoms [2]. However, our patient was completely asymptomatic, the needle might be



**Fig. 4.** Pic 1: Erythema at the site of the needle.  
Pic 2: Tip of needle in the root of Mesent ery.  
Pic 3: Needle during removal.  
Pic 4: Needle out.



**Fig. 5.** Lateral decubitus X-ray showing the needle at mesentery.

silently there for weeks or months, as the parents could not tell as to when the child swallowed the needle. Although the needle was in place as seen in the initial x-ray and after daily radiographs, it was surgically removed. Based on the North American Society for Pediatric Gastroenterology, Hepatology and Nutrition (NASPGHN) guidelines for the management of ingested sharp FBs; sharp objects that have passed the ligament of Treitz should be monitored by daily x-ray, and if the sharp object has not progressed on imaging in 3 days or the patient becomes symptomatic, surgical removal may be considered [1].

Children may be severely affected or completely asymptomatic depending on the shape of the ingested object, time of referral, and patient's age [7]. The site plays an important role in the prognosis, and whether the object is reachable through endoscopy or not. When it comes to the migration through the gastrointestinal tract reaching the root of the mesentery, it is very rare without complications.

Regardless of the type, shape, and size of the FB, awareness should be raised on the serious complications that can result from FB ingestion in children, as they should be closely observed and taken immediately to the nearest hospital within the first hours of a witnessed FB ingestion.

## Disclosure

The authors report no conflicts of interest relevant to this article.

## References

- [1] Kramer RE, Lerner DG, Lin T, Manfredi M, Shah M, Stephen TC, et al. Management of ingested foreign bodies in children: a clinical report of the NASPGHAN Endoscopy Committee. *J Pediatr Gastroenterol Nutr* 2015;60(4):562–74. Apr 1.
- [2] Liu S, Li Q, Li Y, Lv Y, Niu J, Xu Q, et al. Ileocecal junction perforation caused by a sewing needle in incarcerated inguinal hernia: an unusual case report. *Medicine* 2018;97(22). Jun.
- [3] Karthikeyan VS, Ansari MG, Suresh R, Easwaran B. Spontaneous passage of long, sharp gastrointestinal foreign body in a child. *BMJ Case Rep* 2015:

- bcr2014206542. Jan 19;2015.
- [4] Diaconescu S, Gimiga N, Sarbu I, Stefanescu G, Olaru C, Ioniuc I, et al. Foreign bodies ingestion in children: experience of 61 cases in a pediatric gastroenterology unit from Romania. *Gastroenterol Res Pract* 2016;2016.
- [5] Dereci S, Koca T, Serdaroglu F, Akcam M. Foreign body ingestion in children. *Türk Pediatri Arşivi* 2015;50(4):234–40.
- [6] Ragazzi M, Delcò F, Rodoni-Cassis P, Brenna M, Lavanchy L, Bianchetti MG. Toothpick ingestion causing duodenal perforation. *Pediatr Emerg Care* 2010;26(7):506–7. Jul 1.
- [7] Nishimoto Y, Suita S, Taguchi T, Noguchi SI, Ieiri S. Hepatic foreign body—a sewing needle—in a child. *Asian J Surg* 2003;26(4):231–3. Oct 1.