

CASE REPORT

# Foreign body in the liver: Case report and review of literature

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## ABSTRACT

Foreign bodies in the liver, although rare, have been described previously in the literature. While more common in children, adults may also swallow foreign bodies that can reach the liver by penetrating the stomach, duodenum or colon. We describe the case of a young lady who accidentally swallowed a needle, which was later found in the liver by abdominal X-ray and computed tomography (CT). It was removed intact by laparoscopy. A foreign body in the liver is a rare occurrence. Radiology is important in diagnosis through modalities including plain X-ray, ultrasonography and abdominal CT. Removal can be achieved by laparotomy or laparoscopy.

Keywords: foreign body, liver, GIT, CT abdomen, ultrasound

## INTRODUCTION

Ingestion of foreign bodies (FBs) occurs in all age groups, especially in children.<sup>1</sup> The majority of FBs pass through the gut without any serious complications,<sup>2,3</sup> but a sharp FB can penetrate the wall of the gut and make its way to the liver, which is extremely rare as the liver is an intraperitoneal organ,<sup>4,5</sup> not in continuity with the gastrointestinal lumen. Our case report and review focuses on this rare condition as the symptoms are vague and diagnosis can be made only with a high degree of suspicion.

## CASE

A 20-year-old lady, without any known psychiatric history, presented to the accident and emergency department, three weeks after ingesting a FB (metallic pin). She accidentally ingested the pin as it is

common practice to hold it between teeth while fixing the head scarf. She had recurrent, mild to moderate, non-radiating, upper abdominal pain without nausea, vomiting, fever, jaundice or altered bowel habits. Her physical examination and blood investigations, including liver function tests, were within normal limits. X-ray of the abdomen showed a horizontal metallic foreign body in the right upper abdomen with no evidence of pneumoperitoneum (Fig. 1). Abdominal CT revealed a 3 cm radio-opaque pin in segment three of the liver in close proximity to the falciform ligament with no evidence of surrounding soft tissue edema, hematoma, abscess or pneumoperitoneum (Figs. 2, 3). Her upper gastrointestinal endoscopy was normal. Due to her persistent abdominal pain, she underwent diagnostic laparoscopy and no inflammatory signs were appreciated on the liver surface as it was completely embedded. The pin was localized with laparoscopic ultrasound (US) and removed in intact condition. Confirmation of the removal was obtained by US and fluoroscopy. She recovered unremarkably and was sent home the second day after surgery. At follow-up, she was progressing well without complication two years after surgery.

## DISCUSSION

The majority of ingested FBs pass through the gut within a week, without any significant complications.<sup>2-4</sup> The population of patients may vary from children<sup>6</sup> to psychiatric patients<sup>7</sup> or normal adults.<sup>8</sup> Perforation of the gastrointestinal tract (GI) by FBs is rare, occurring in less than 1 percent of patients, the most common sites being the ileocecal and recto-sigmoid regions. In such circumstances, patients may present with localized abscess, peritonitis,<sup>2</sup> inflammatory mass, hemorrhage or fistula.<sup>1,2</sup> Hepatic FBs are rare and are consequent to penetration from the lumen of the gut, penetration of the abdominal wall or through the blood stream.<sup>1,6-11</sup> Fish bones, chicken bones and needles are the most commonly swallowed FBs.<sup>12</sup> However, most hepatic FBs result from perforation and transmigration from the lumen of the gut (stomach, duodenum and transverse colon).<sup>1</sup> Most patients with hepatic FB are asymptomatic, but a small number may develop abdominal pain, fever, liver dysfunction and jaundice. Our patient had abdominal pain and no other associated symptoms. FBs in the stomach and duodenum are treated conservatively. In case the FB has not passed in the



Figure 1. Plain X-ray of the abdomen showing needle close to left twelfth rib.

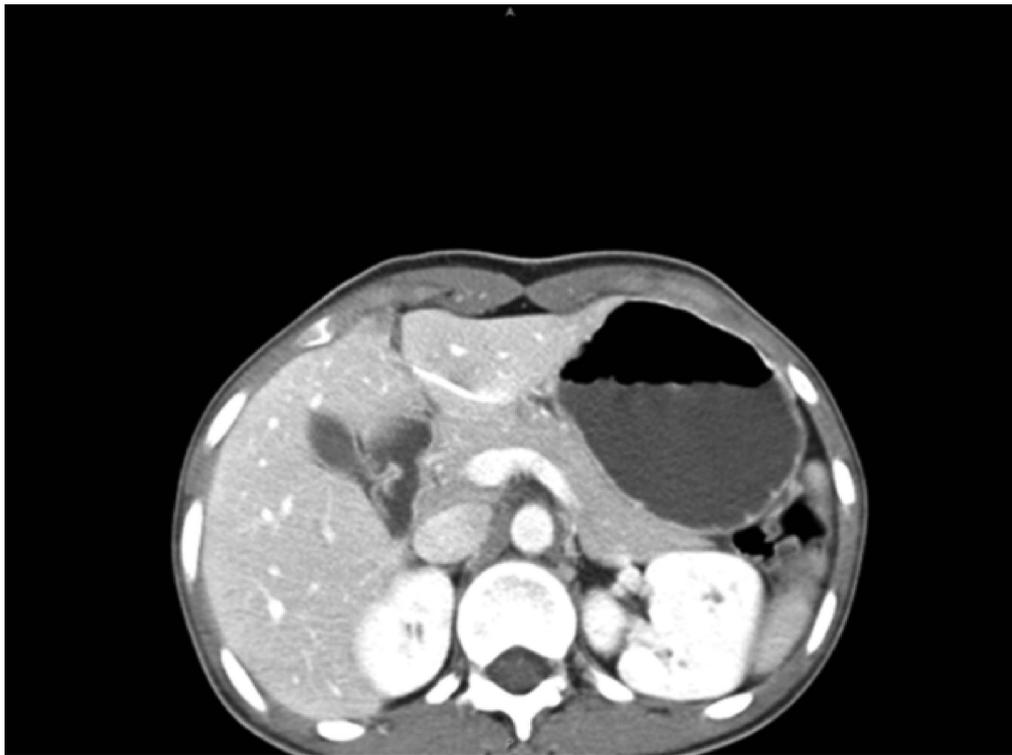


Figure 2. CT abdomen with contrast showing the radio-opaque linear foreign body in the left lobe of the liver.



Figure 3. CT abdomen without contrast showing the needle in the left lobe of the liver.

stool, careful evaluation of the liver should be carried out. In some cases, FB in the liver is discovered incidentally by X-ray during examination.<sup>10</sup>

Early recognition and treatment are needed to avoid morbidity and mortality.<sup>3</sup> Plain X-ray of the abdomen, US, and CT are the main investigations that detect the presence of a FB, its location and possible complications. Upper GI series, esophago-gastroduodenoscopy, colonoscopy, laparotomy and laparoscopy may be employed to diagnose and remove the FB.<sup>1,3</sup>

Plain X-ray is performed to diagnose the FB. If the object is not passed in the stool, a plain radiograph may be taken weekly to see the progress.<sup>1,13</sup> In the earlier stages, it is helpful to allow endoscopic removal of the FB before it migrates from the stomach or duodenum. Ultrasound and CT may show the unusual pathway taken by the FB. CT is the investigation of choice because of its high resolution.<sup>4,14</sup>

Management depends upon the location, progression and presence of any complications. Removal is accomplished by laparotomy<sup>8</sup> or laparoscopy.<sup>15,16</sup> However, a complicated hepatic FB may necessitate abscess drainage or even hepatic segmentectomy.<sup>1</sup> We used laparoscopic US to locate

the pin in the liver and confirmed its complete removal by fluoroscopy.

In conditions of non-complicated hepatic FB, follow up is recommended without surgical intervention with no sequelae.<sup>1,2</sup> In one case of reported death, the cause discovered at autopsy was a migratory portion of chicken bone and a prolonged course of illness.<sup>17</sup> We reviewed the literature and could only find two case reports in the indexed literature where the ingested foreign body perforated the gut wall and eventually found its way to the kidney.<sup>18</sup>

## CONCLUSION

Careful follow-up is needed for patients having a history of ingestion of a FB like a sewing needle or a pin, which has not passed within one week. The possibility of migration to the liver must be kept in mind if the patient develops abdominal pain, fever or jaundice and prompt radiological investigations should be carried out to plan for management. The patient may require laparotomy or laparoscopy for the FB retrieval. Some patients with uncomplicated hepatic FB may be observed without surgical intervention.<sup>18</sup>

## REFERENCES

- Mesut B, Ayaz A, Fatih Y, Rasul S, Korhan T, Adem U. Final destination of an ingested needle: The liver. *Diagn Interv Radiol*. 2011;17:64–66.
- Crankson SJ. Hepatic foreign body in a child. *Pediatr Surg Int*. 1997;12:426–427.
- Lee KF, Chu W, Wong SW, Lai PB. Hepatic abscess secondary to foreign body perforation of stomach. *Asian J Surg*. 2005;28:297–300.
- Mohammadi A, Khodabakhsh M. Foreign body: A sewing needle migrating from gastrointestinal tract to the liver. *Iran J Radiol*. 2009;6(4):199–201.
- Lotfi M. Foreign body in the liver. *Int Surg*. 1976;61:228.
- Azili MN, Karaman A, Karaman I, Erdogan D, Cavusoglu YH, Aslan MK, Cakmak O. A sewing needle migrating into the liver in a child: Case report and review of the literature. *Paediatr Surg Intl*. 2007;23:1135–1137.
- Roca B. A sewing needle in the liver. *South Med J*. 2003;96:616–617.
- Chintamani, Singhal V, Lubhana P, Durkhere R, Bhandari S. Liver abscess secondary to a broken needle migration—a case report. *BMC Surg*. 2003;3:8.
- Serhat A, Ozkan U, Ozkan O, Aydin B, Ahmet CD. A swallowed sewing needle migrating to the liver. *North Am J Med Sci*. 2009;1:193–195.
- Feng QZ, Wang J, Sun H. A sewing needle in liver: A case report and review of the literature. *Cases Journal*. 2009;2:6520.
- Rahalkar MD, Pai B, Kukade G, Al-Busaidi SS. Sewing needles as foreign bodies in the liver and pancreas. *Clin Radiol*. 2003;58:84–86.
- Abel RM, Fischer JE, Hendren WH. Penetration of the alimentary tract by a foreign body with migration to the liver. *Arch Surg*. 1971; 102(3):227–228.
- Spina P, Minniti S, Bragheri R. Usefulness of ultrasonography in gastric foreign body retention. *Paediatr Radiol*. 2000;30:840–841.

14. Santos SA, Alberto SCF, Cruz E, Pires E, Figueira T, Coimbra É, Estevez J, Oliveira M, Novais L, Deus JR. Hepatic abscess induced by foreign body: Case report and literature review. *World J Gastroenterol*. 2007;13:1466 – 1470.
15. Saviano M, Melita V, Tazzioli G, Farenetti A, Drei B. Videolaparoscopic removal of a foreign body from the liver. *Eur J Surg*. 2000;166:744 – 746.
16. Le Mandat-Schultz A, Bonnard A, Belarbi N, Aigrain Y, De Lagausie P. Intrahepatic foreign body laparoscopic extraction. *Surg Endosc*. 2003;17:1849.
17. De la Vega M, Rivero JC, Ruiz L, Suarez S. A fish bone in the liver. *Lancet*. 2001;358:982.
18. Singh DV, Swami YK, Rana YPS, Wani SM. Foreign body in kidney: An unusual case and its management. *Cent Eur J Urol*. 2013;66:497 – 500.