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Laparoscopic retrieval of a sewing needle from the liver: A case report

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ABSTRACT

INTRODUCTION: Less than 1% of ingested foreign bodies will require surgical management. An uncommon complication of ingested foreign body is migration to the liver. We present a case of laparoscopic removal of an intrahepatic foreign body.
PRESENTATION OF CASE: 32-year-old female presented with a four month history of epigastric abdominal pain following suspected foreign body ingestion. CT scan demonstrated a metallic object lying in the left lateral segment of the liver. The patient was brought to the operating room where the object was removed laparoscopically and was found to be a sewing needle.
DISCUSSION: Hepatic foreign bodies are an uncommon entity and typically result from a transcutaneous or ingested (e.g., gastrointestinal) source. Symptoms are often vague and can develop remote from the time of ingestion. Surgical management is warranted for symptomatic intrahepatic foreign bodies.
CONCLUSION: Laparoscopy is an effective surgical method for removal of intrahepatic foreign bodies in some cases.

1. Introduction

Ingested foreign bodies are a common presentation for emergency medicine specialists, gastroenterologists, and surgeons alike. Although ingested foreign bodies are more common in children, they can also present management challenges in adults. Most ingested foreign bodies are managed expectantly, however, 10–20% can be removed endoscopically and less than 1% will require surgery [1].

For those that require operative management, the approach depends on the location of the foreign body and any associated complications such as obstruction and perforation. An uncommon complication of an ingested foreign body is migration to the liver. To date, twenty-four cases have been reported in the literature [2]. Six of these twenty-four have been removed laparoscopically. We present an additional case of laparoscopic retrieval of a symptomatic intrahepatic ingested foreign body including an intraoperative video demonstration of the technique used. This case report was written in line with SCARE criteria for surgical case reports [8].

2. Case report

A 32 year-old female presented from a remote community in northern Canada for evaluation of an intrahepatic foreign body. Four months earlier, the patient reported the sensation of swallowing a sharp foreign object while drinking a can of soda. This resulted in dysphagia and a sensation of a sharp object “stuck in the throat”. This was followed by persistent epigastric abdominal pain. The patient was adamant that there were no other episodes where she could have swallowed a foreign body. She was investigated in a community hospital and underwent a CT scan of the abdomen that reported a foreign body in the liver. Upper endoscopy was performed and was unremarkable. At the time of evaluation in the tertiary care center, she was found to be in no acute distress. She complained of constant epigastric and right upper quadrant abdominal pain. She denied any history of fevers or chills. Past medical and surgical history was significant only for remote laparoscopic cholecystectomy for biliary colic. On examination there were no signs of peritonitis. There were no abdominal scars to suggest possible transcutaneous entry of a foreign body, nor did the patient describe a history of this. Blood work investigations demonstrated normal complete blood count, normal electrolytes, and normal liver function tests. A repeat CT scan of the abdomen re-demonstrated a longitudinal metallic foreign object (3.5 cm) lying vertically in the left lateral segment of the liver (Fig. 1).

The patient was brought to the operating room for a diagnostic laparoscopy. On the undersurface of the left lateral segment a small area of capsular retraction was visible. The stomach was normal.

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Fig. 1. CT scan demonstrating a longitudinal metallic foreign object lying vertically in the left lateral segment of the liver.

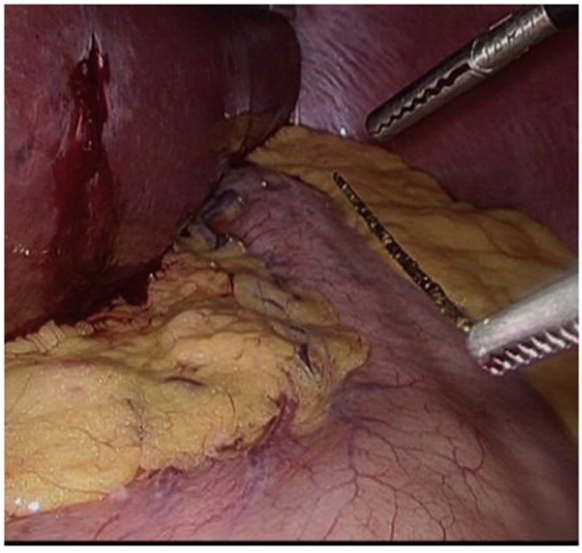

Fig. 2. Extraction of the foreign body through a laparoscopic hepatotomy.

Despite this, the proximity of the location of the foreign body to the stomach suggested that this was the site of migration. A small hepatotomy was created at this site, and the foreign body was extracted (Fig. 2). Gross examination proved this to be a sewing needle (Fig. 3). Her post-operative course was uneventful and she was discharged home on the first post-operative day. Clinic follow-up confirmed resolution of symptoms.

3. Discussion

Hepatic foreign bodies are an uncommon entity and typically result from a transcutaneous or ingested (e.g., gastrointestinal) source. A review of the literature suggests that the majority of ingested hepatic foreign bodies are in fact needles or other similarly long and sharp objects such as animal bones or toothpicks [2,3,8]. This phenomenon can be attributed to the fact that most other objects leading to perforation of the gastrointestinal tract are more likely to lead to acute symptoms of perforation and immediate surgery.

Fig. 3. The extracted foreign body which on gross examination proved to be a sewing needle.

Our patient had a reported history of ingestion, although of what she was unsure. She went on to develop symptoms consistent with a foreign body. Not all patients develop symptoms and indeed a substantial number of hepatic foreign bodies are found incidentally [2]. Management of incidental hepatic foreign bodies can be expectant [4]. A hepatic foreign body may lead to the development of symptoms after an extended period of time that is remote from the time of ingestion, and only be diagnosed if secondary inflammation/infection develops [5]. As in the case presented in this report, symptoms can be vague and nonspecific including nausea and mild epigastric pain lasting for one to several months [4,9,10]. This can lead to a delay in diagnosis. There have been several case reports of hepatic abscess developing from migration of an ingested foreign body. These patients present with fevers, chills, and abdominal pain. In these cases the patient's presented within a couple of weeks of the onset of symptoms, however it is difficult to determine the amount of time between ingestion and abscess formation. In these cases the abscess can first be drained percutaneously or treated with antibiotics followed by removal of the foreign body [2,6,11–13]. One case report describes a ruptured abscess requiring laparotomy with peritoneal lavage [14]. In symptomatic patients the surgical approach depends on the location of the lesion, the surrounding anatomy, and patient factors. In this case report, the needle had migrated completely into the liver and left no visible residual abnormality of the stomach. The point of entry of the foreign body into the liver was easily identified at the time of laparoscopy due to its subcapsular location. This was anticipated and guided by the pre-operative CT scan. In some cases the foreign body is identified in transit between the GI tract and the liver where part of the foreign body is visible via endoscopy. In these cases the foreign body can be removed endoscopically [9,12,13].

Intra-operative ultrasound is a useful adjunct in identifying the location of a deeper intra-parenchymal foreign body [7]. Laparoscopic liver resection of the affected liver segment has been described for deeper objects [10,15]. Laparotomy is performed for patients presenting with an acute decompensation, as in the case of acute perforation of the GI tract [14,8]. This can occur if the foreign body penetrates the outer wall of the GI tract which is not abutting another organ.

4. Conclusion

Hepatic foreign bodies from an ingested source are an uncommon occurrence. They can present with vague symptoms lasting months or sub-acutely as a hepatic abscess. If symptomatic, removal of the foreign body is warranted. This case report demonstrates that in the right circumstances, this can safely be done laparoscopically.

Conflicts of interest

There are no conflicts of interest for any of the authors.

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Ethical approval

No ethics approval is required for case reports as per discussion with the Research Ethics Board of The Ottawa Hospital.

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.

Author contributions

Dave Carver – Clinical contribution, manuscript preparation.
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Fady Balaa – Clinical contribution, manuscript preparation.

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Appendix A. Supplementary data

Supplementary material related to this article can be found, in the online version, at doi:https://doi.org/10.1016/j.ijscr.2018.09.012.

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