



Case report

An uncommon liver abscess secondary to an ingested foreign body: A case report

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ABSTRACT

Introduction: This article discusses a case study involving a unique occurrence of a hepatic abscess caused by the presence of an ingested foreign body. Hepatic abscesses, characterized by pus accumulation within liver tissue, often result from various infections, with some cases having unidentified origins.

Case presentation: This study focuses on a 75-year-old man who presented at an emergency department with persistent pain in the right upper abdomen and fever for ten days. Diagnostic tests revealed a low-density, multiloculated mass in the liver and a hyperdense linear structure near the duodenum, indicating a hepatic abscess originating from duodenal perforation due to a foreign body that had migrated from ingestion. The patient underwent antibiotic treatment and a surgical procedure involving laparotomy to extract the foreign object and drain the abscess.

Conclusion: this case study underscores the rare occurrence of hepatic abscesses caused by ingested foreign bodies. Swift and accurate diagnosis, along with appropriate treatment involving foreign body removal and abscess drainage, are pivotal for favorable patient outcomes. The choice of treatment strategy impacts hospital stay duration, and understanding potential complications from foreign body ingestion enhances patient management and care.

Introduction

A pyogenic hepatic abscess refers to a collection of pus within the liver tissue. It is a severe condition and a therapeutic challenge. Common causes of these abscesses include infections from bile ducts, blood, abdomen, or other areas outside the abdomen. However, in over 20% of cases, the underlying cause remains unidentified. Only a small portion, around 5%, of these abscesses are linked to ingesting foreign objects [1]. It was first described by Lambert in 1898 [2]. Since then, migrated foreign body has been increasingly recognized as a cause of liver abscess treatment failure [3]. Still, despite complete history taking, physical examination, and the extensive use of modern radio imaging by computed tomography and ultrasound imaging most cases of migrated foreign body liver abscesses are initially misdiagnosed as cryptogenic liver abscesses [4]. This case study aims to present an uncommon instance of a hepatic abscess caused by the presence of a foreign body.

Case presentation

A 75-year-old man with no prior medical history arrived at our emergency department, complaining of persistent pain in the right upper abdomen and fever for the past ten days. He reported no nausea, vomiting, or jaundice. Physical examination revealed stable vital signs, a body temperature of 40 °C, and tenderness in the right upper abdomen. Laboratory tests indicated a white blood cell count of 29600/mm³, a C-reactive protein level of 182 mg/dL, and functional kidney insufficiency. An abdominal computed tomography (CT) scan revealed a low-density, multiloculated mass in the liver measuring over 15 cm at its largest point (Figs. 1 and 2). Notably, a hyperdense linear structure, 3 cm in length, was observed adjacent to the upper part of the duodenum. The diagnosis was a hepatic abscess arising from duodenal perforation due to a foreign body that had been ingested and migrated to the liver. The patient received antibiotic treatment and underwent a median laparotomy procedure. The surgical intervention involved draining the abscess,

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Fig. 1. An axial view of the abdominal CT scan showing the liver abscess and the foreign body.



Fig. 2. A coronal view of the abdominal CT scan showing the liver abscess and the foreign body.

extracting a foreign object resembling a fishbone, and suturing the perforation in the duodenum (Fig. 3), followed by extensive drainage in the affected area. The postoperative follow-up was uneventful. The patient was discharged from the hospital after eight days. He was seen at the postoperative clinic after three months and there was no recurrence. A post-operative CT scan was performed with no abnormalities.

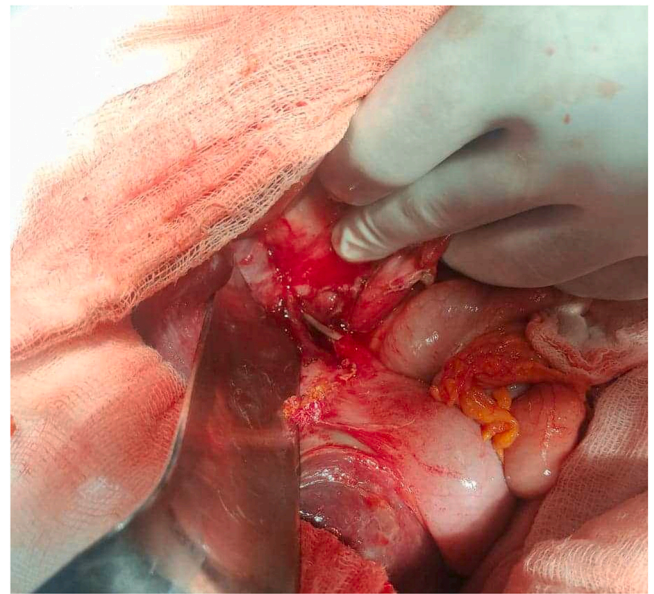


Fig. 3. An intraoperative view of the ingested foreign body perforating the duodenum.

Discussion

Around 80–90% of ingested foreign objects pass through the gastrointestinal tract without causing any issues within a week [5]. Complications, such as perforation or penetration of the gastrointestinal tract, occur in less than 1% of cases involving foreign object ingestion [6]. Most patients present with non-specific symptoms; abdominal pain (77.3%) and fever (58%) are the most prevalent, followed by vomiting (19.3%) and nausea (13.6%) [7]. Among reported foreign bodies, fish bones occurred most frequently (33%), followed by toothpicks (27.3%), chicken bones (12.5%), and needles (9.1%) [8]. Stomach perforations are more common, followed by duodenal perforations [7], which usually lead to abscesses affecting the left liver lobe. Abdominal ultrasound or CT scans are commonly used for diagnosis. CT scans are particularly effective in identifying foreign bodies due to their precision and high resolution [5,9,10]. However, endoscopy may aid in diagnosis when it is performed at an early stage, before complete migration of the foreign body and mucosal healing [11]. Concerning the identification of pathogens, a review of the relevant literature showed a single bacterial strain in the majority of cases (54.5%) with an incidence of two bacterial flora and multi-flora being 18.2% and 12.7%, respectively [12]. Of all the identified pathogens, the most commonly isolated was *Streptococcus* species (72.3%), followed by *Escherichia coli* (17%) and *Klebsiella pneumoniae* (10.6%) [12]. The recommended treatment involves removing the foreign object and draining the hepatic abscess [9]. The cure rate without foreign object removal is quite low (9.5%) [11]. Removal methods include laparotomy, laparoscopy, upper or lower gastrointestinal endoscopy, or percutaneous radiological intervention [13]. The choice of treatment impacts the length of hospital stay: patients undergoing laparotomy generally have shorter stays compared to those receiving abscess drainage, and image-guided drainage leads to longer hospitalization than antibiotic treatment alone [9]. Prognosis depends on a quick diagnosis, not only for morbidity but also for mortality [14,15]. The literature review suggests a limited number of reported cases of gastrointestinal complications due to foreign object ingestion. This rarity may be attributed to underreporting or selective reporting biases. The actual incidence of such complications might be higher than documented due to cases that are either asymptomatic, misdiagnosed, or not reported in medical literature. The infrequency of reported cases in the literature might also reflect a publishing bias,

where only cases with severe complications or unusual presentations are documented. This bias can skew the understanding of the true nature of such ingestions and their outcomes. A more systematic approach to reporting could provide a more accurate depiction of the incidence and risk factors associated with foreign body ingestion and its complications.

Conclusion

this case highlights a rare occurrence of a hepatic abscess resulting from the ingestion of a foreign body. Prompt diagnosis, followed by appropriate treatment involving foreign body removal and abscess drainage, is crucial for favorable outcomes. The choice of treatment strategy plays a role in determining the duration of hospitalization. Understanding the potential complications arising from foreign body ingestion can aid in better managing such cases and improving patient care.

Ethical approval

Not applicable.

Consent

Written informed consent was obtained from the patient for the 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

All the authors participate in the treatment of the patients, writing, and approving the manuscript.

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CRediT authorship contribution statement

Mohamed Zayati: Conceptualization, Data curation, Funding acquisition, Writing – original draft. **Sadok Ben Jabra:** Investigation, Methodology, Resources, Supervision, Validation. **Mohamed Ali Chaouch:** Conceptualization, Data curation, Formal analysis, Funding acquisition, Validation, Visualization, Writing – original draft. **Ahmed Hadj Taieb:** Conceptualization, Data curation, Formal analysis,

Validation. **Faouzi Noomen:** Funding acquisition, Validation, Writing – review & editing. **Aymen Kaouach:** Conceptualization, Data curation, Formal analysis, Funding acquisition, Supervision, Writing – original draft. **Emna Mili:** Conceptualization, Data curation, Funding acquisition, Software, Writing – original draft. **Besma Gafsi:** Writing – original draft, Writing – review & editing.

Conflict of interest

No conflict of interest to disclose.

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