CLINICAL CASE

Liver abscess due to a fish bone injury: A case report and review of the literature

Absceso hepático debido a la ingestión de una espina de pescado: caso clínico y revisión de la literatura

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Abstract

There are several cases of liver abscesses caused by the ingestion of a foreign body, especially in the elderly. Fish bones or chicken bones are sharp foreign bodies that can migrate through the digestive tract to the liver parenchyma. We reported a 71-year-old man who presented to the emergency department with fever and epigastric pain. Computed tomography scan showed a liver abscess related to a long and sharp foreign body which is protruding from the left lobe of the liver. Systemic antibiotic treatment was initiated and later the foreign body was removed by laparoscopic surgery.

Key words: *Liver abscess. Foreign body. Spine bone.*

Resumen

Existen numerosos casos publicados en la literatura que muestran abscesos hepáticos producidos por la ingestión de un cuerpo extraño, especialmente en ancianos. Los huesos de pollo, y con mayor frecuencia las espinas de pescado, pueden perforar el tubo digestivo y migrar hasta el parénquima hepático y originar un absceso. Reportamos el caso de un paciente de 71 años que acude a urgencias por dolor epigástrico y fiebre. Se realizó tomografía computarizada abdominal, que identificó un absceso hepático junto con un cuerpo extraño puntiforme que penetraba en el hígado. El paciente fue intervenido quirúrgicamente, realizando drenaje del absceso y retirada del cuerpo extraño mediante abordaje laparoscópico.

Palabras clave: *Absceso hepático. Cuerpo extraño. Espina de pescado.*

Introduction

The liver is the most frequent location of intra-abdominal visceral abscesses.

Pyogenic liver abscess is a rare and severe disease with an annual incidence of 2.3 cases per 100,000 people[1] and a mortality rate of 7-16%[2,3].

In Western countries, pyogenic liver abscesses are usually polymicrobial, while in East Asian countries,

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these abscesses are monomicrobial (mainly produced by *Klebsiella pneumoniae*) and could be related to colorectal cancer[4].

There are different mechanisms of infection of the liver parenchyma. Nowadays, the most frequent is the ascending infection from the biliary tract, associated with biliary diseases (biliary lithiasis, stenosis of extra- and intrahepatic bile duct, or bilioenteric anastomosis)[5].

Currently, less frequent routes are portal vein pyemia (due to an intraabdominal infectious process) or systemic bacteremia as a result of hematogenous seeding from a distant infectious focus (such as infectious endocarditis)[6]. Another less frequent route is the systemic circulation (bacteremia) as a result of hematogenous seeding from a distant infectious focus, such as infectious endocarditis[6].

Liver abscesses secondary to a foreign body are an exceptional situation. The most frequent pathogenesis in these circumstances is gastric perforation by a fish bone that migrating to the liver and generating an abscess. In this context, the abscess will most often be located in the left hepatic lobe, while the most frequent location of liver abscess is usually the right hepatic lobe[7].

Case presentation

A 73-year-old woman with no medical history of relevance presented to the emergency department with a 2-week history of fever, asthenia, nausea, and intermittent diffuse abdominal pain. The abdominal examination did not show signs of peritoneal irritation. Elevation of acute-phase reactants and spontaneous coagulopathy was observed.

An exploratory abdominal ultrasound was performed showing a hypoechoic liver collection in the left hepatic lob. The study was completed with a computed tomography (CT) scan that revealed a liver abscess with a hyperdense image into the parenchyma of the left hepatic lobe (Fig. 1). With the diagnosis of pyogenic liver abscess associated with foreign body, antibiotic treatment was initiated with piperacillin-tazobactam (4/0.5) every 8 h, during 5 days. Although the patient had a good response to the antibiotic treatment, with disappearance of the fever, normalization of coagulation, and decrease of the acute phase reactants, a residual collection with a foreign body persisted in the liver. After evaluating this clinical case in a multidisciplinary committee, a surgical approach to the liver abscess was indicated to remove the foreign body. We have ruled out the possibility of percutaneous drainage because this procedure would not allow the removal of the foreign body. Based on previous published experiences, we decided to perform a minimally invasive approach.

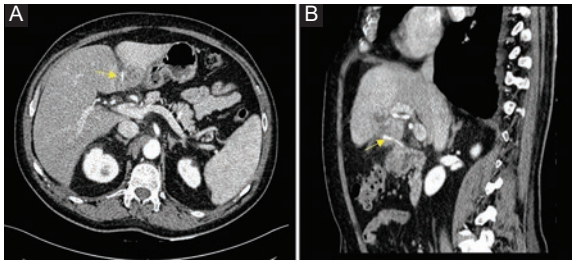

Figure 1. A-B: *abdominopelvic CT, axial and sagittal section respectively. Marked with a yellow arrow an image of hyperdense foreign body.*

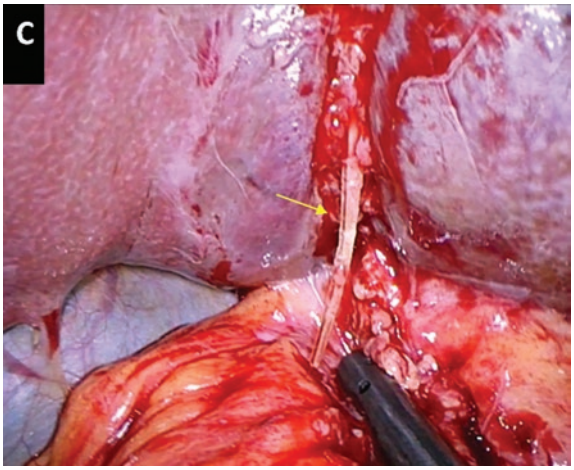

Figure 2. *Intraoperative image of the fish bone in contact with the first duodenal portion and embedded in the liver parenchyma.*

Exploratory laparoscopy showed an important inflammatory plastron between the duodenum and the left hepatic lobe. After dissection of adhesions, a pearly and hard filamentous foreign body was found into the liver parenchyma. The foreign body was extracted and it impressing as a fish bone (Figs. 2 and 3).

The post-operative period evolves favorably without adverse events. The patient was being discharged on the 5th post-operative day with resolution of the abscess. On follow-up, the patient remains asymptomatic, without any sequelae.

Discussion

Perforation and migration from the digestive tract of a foreign body are the origin of some liver abscesses

Figure 3. *Full image of 3 cm long fishbone.*

of unknown origin with a poor medical response. In these types of abscesses, the removal of the foreign body is essential for a complete resolution. Fish bone[8-10] is the most prevalent of this foreign body described in the medical literature, although other types of foreign bodies have been reported, such as chicken bones[11-13] and toothpicks[14,15].

The most frequent symptoms in these patients were fever and epigastric pain, without underlying medical conditions[10].

The migration of the foreign body usually involves a perforation the gastric antrum, pylorus, or first and second part of the duodenum. For this reason, the most frequent location of this type of abscess is the left hepatic lobe.

Liver abscesses have also been described in the right hepatic lobe by foreign bodies that have migrated from the right colon or duodenum[10].

In most patients, the foreign body can be identified by CT, although sometimes there is no extraluminal migration and foreign body could be removed by endoscopy[16].

In patients with cryptogenic liver abscesses with no detectable foreign body, this condition should be suspected if the abscess shows the following features:

- Left hepatic lobe location
- Unique location
- Treatment failure
- Absence of underlying medical conditions
- Indirect signs of foreign body migration: the existence of adhesions or fistulas between the digestive tract and the liver.

Frequently, there is no extraluminal migration and foreign body could be removed endoscopically, when this foreign body has migrated out of the digestive tract, surgical extraction by a minimally invasive approach is safe and feasible[8,17,18].

Key Points:

- There are several cases of liver abscesses caused by the ingestion of a foreign body, especially in the elderly.
- The most frequent mechanism of origin is a gastric perforation by a fish bone that can migrate through the digestive tract to the liver parenchyma.
- In this context, the abscess is most often located in the left hepatic lobe.
- Definitive treatment includes drainage of the abscess and removal of the foreign body. If the foreign body is not removed, treatment failure is common.
- Minimally invasive surgery is the first alternative. An endoscopic approach is also possible in foreign bodies with intraluminal location.

Conflicts of interest

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Ethical disclosures

Protection of human and animal subjects. The authors declare that no experiments were performed on humans or animals for this study.

Confidentiality of data. The authors declare that they have followed the protocols of their work center on the publication of patient data.

Right to privacy and informed consent. The authors have obtained the written informed consent of the patients or subjects mentioned in the article. The corresponding author is in possession of this document.

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