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Case Report

# Incarcerated primary anterior liver hernia: A case report☆

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ABSTRACT

The anterior liver hernia is a very rare entity that mainly occurs within an incisional hernia. Primary anterior liver hernia, in the absence of a previous abdominal incision, is extremely rare. The diagnosis is suspected in patients with epigastric bulging. The confirmation requires imaging studies such as computed tomography scan (CT scan). We report the case of an incarcerated primary ventral liver hernia, in an 83-year-old man who presented with a sudden epigastric swelling. A contrast-enhanced CT scan confirmed the diagnosis of incarcerated epigastric hernia with liver and epiploic content. Risk factors were thought to be the increased intra-abdominal pressure related to benign prostate hyperplasia, as well as the old age of the patient. The surgical conservative management was successful.



## Introduction

Herniation of the liver through the anterior abdominal wall is a rare phenomenon. Most cases of liver herniation are due to diaphragmatic hernias. In a minority of cases of childhood, the congenital anomaly is an abdominal wall defect with omphalocele [1]. In adults, the anterior liver hernia is a very rare entity. Most occurred within an incisional hernia [2,3]. Primary anterior liver hernia, in the absence of a previous abdominal incision, is extremely rare with only 3 cases reported in the literature [4–6].

This case history outlines the presentation of an 83-year-old man with an incarcerated primary anterior hernia, containing the left liver lobe, confirmed by an enhanced abdominal CT scan.

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**Fig. 1 – A clinical image of the anterior abdominal wall, showing epigastric swelling (arrow).**

## Case presentation

An 83-year-old man was brought to the emergency service for evaluation of a sudden epigastric swelling and pain, associated with nausea and vomiting, for less than 3 hours. He denied any history of heavy lifting, traumatism, or abdominal surgery. On the other hand, he complains of chronic lower urinary tract symptoms.

Clinical examination revealed a nonreducible epigastric swelling without any surgical scar (Fig. 1). The biological report, including liver enzymes, was normal.

The abdominal ultrasound showed an epigastric hernia containing the left liver lobe with a small amount of ascites and epiploic content within the hernia sac (Fig. 2). No Doppler signal was detectable within the left liver lobe vessels. It was associated with cholelithiasis, and enlarged prostate measuring 151 ml of volume, in keeping with benign prostatic hyperplasia.

The abdominal contast-enhanced CT scan showed a slightly decreased enhancement of the left liver lobe within the hernia sac (Fig. 3), suggesting low perfusion of the incarcerated liver parenchyma. The defect measured 55 mm in diameter.

A supra-umbilical laparotomy was performed. The hernia sac was dissected and opened revealing liver and epiploic content (Fig. 4). The left liver lobe totally recovered after liberation, and therefore, it was totally conserved. The associated cholelithiasis was treated by cholecystectomy.

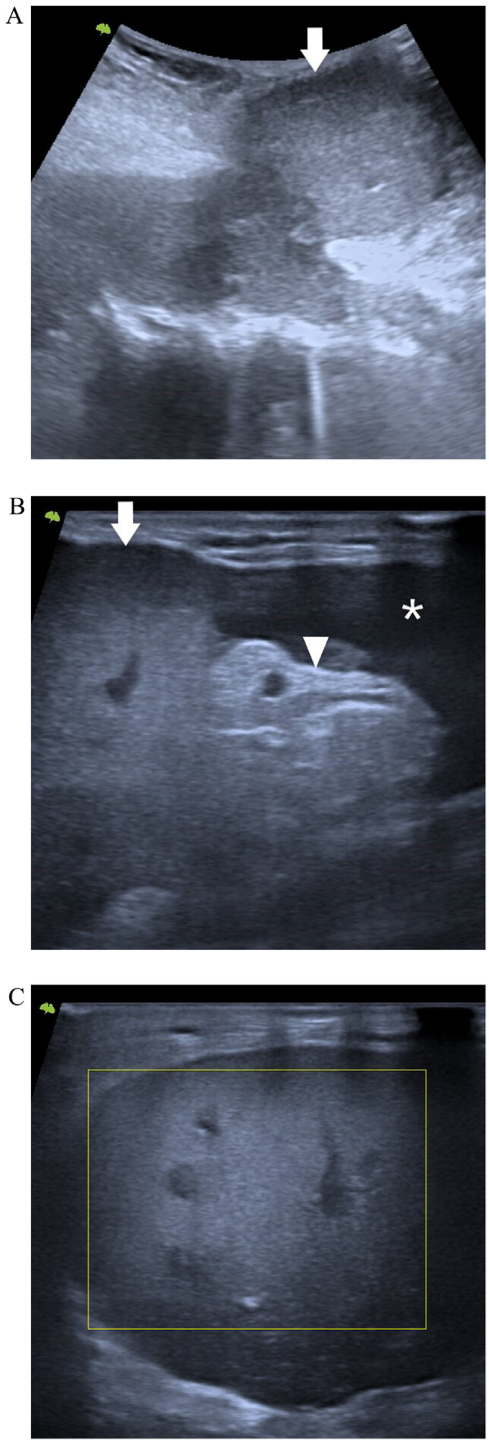


**Fig. 2 – Transabdominal ultrasound with a low-frequency transducer in the sagittal plane (A) and a high-frequency transducer in the axial plane (B) showing an epigastric hernia through the linea alba, containing the left liver lobe (arrow), a small amount of ascites (asterisk), and a part of the greater omentum (arrowhead). On Doppler ultrasound with a high-frequency transducer (C), no Doppler signal was detectable within vessels of the incarcerated liver parenchyma (yellow rectangle). (Color version of figure is available online.).**


**Fig. 3 – Abdominal contrast-enhanced CT scan at the portal phase in the axial (A) and the sagittal (B) planes, showing an epigastric hernia through the linea alba, containing the left liver lobe with a decreased enhancement of the incarcerated parenchyma (arrow).**

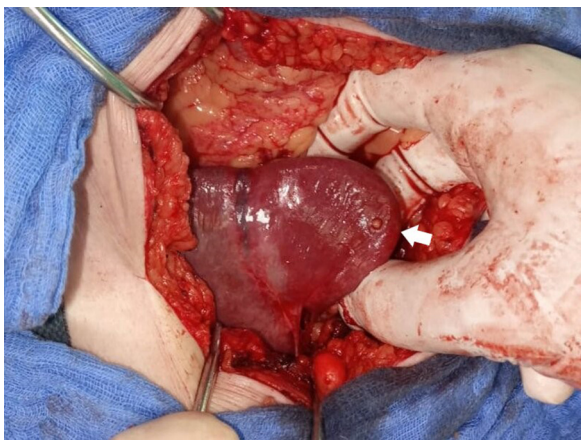

**Fig. 4 – Intraoperative view of the incarcerated left liver lobe that recovered after its liberation (arrow).**

The abdominal reconstruction procedure used for the cure of the hernia was the Mayo (Paletot) technique. The postoperative period was unremarkable.

## Discussion

The primary anterior liver hernia occurs in the absence of a previous abdominal incision and is extremely rare. An extensive literature review revealed only 3 other [4–6].

Multiples risk factors of hepatic herniation through the abdominal wall had been described, including obesity, increased intra-abdominal pressure, weak abdominal wall, old age, poor nutrition, smoking, and postsurgical site infection [7]. Congenital absence of the left or right triangular ligaments of the liver has been described as a possible risk factor of anterior herniation of segments of the liver when coupled with the aforementioned risk factors [8]. In our case, the hernia was thought to be caused by the increased intra-abdominal pressure related to benign prostate hyperplasia, as well as the old age of the patient.

Symptoms of abdominal hepatic herniation include abdominal pain, nausea, vomiting, epigastric swelling, jaundice, dyspnea, and confusion [9]. The complications of hepatic herniation can be severe and vary according to which lobe of the liver is herniated. Herniation of the left hepatic lobe has been associated with incarceration of the liver within the hernial sac that can lead to hepatic encephalopathy and liver failure [10]. While herniation of the right hepatic lobe has been associated with Budd-Chiari syndrome [11].

Hepatic hernias should be suspected when a patient presents with epigastric bulging, but adequate diagnosis requires imaging studies such as a CT scan [12].

Elements that may suggest acute liver low perfusion in case of incarceration are hypodensity of the liver parenchyma on enhanced CT scan, as in our case, important inflammatory response with high WBC, and cytolysis [6].

Treatment of hepatic hernias can be a challenge. Currently, there are no guidelines that dictate treatment, and most cases can be managed conservatively, as in our case. If any of the aforementioned complications occur, surgical correction should be pursued given the favorable outcomes [12].

One caveat to surgical treatment, however, is the presence of cirrhosis. In these patients, studies have shown that surgical correction of abdominal hernias results in increased morbidity and mortality [13].

## Patient consent statement

Written and informed consent for publication of the case was obtained from the patient.

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