



RUPTURED LIVER ABSCESS PRESENTING AS ANTERIOR ABDOMINAL WALL ABSCESS

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ABSTRACT

Liver abscesses are a common occurrence in India and therefore one of the most important diseases which should be studied in detail by any clinician. There are two types of liver abscesses prevalent in India, i.e., amoebic liver abscess and pyogenic liver abscess. Amoebic liver abscess is much more common than pyogenic liver abscess, whereas the later presents as more acute illness than the former. Among other complications such as septic metastatic complications to eye and brain, hepatic vein thrombosis and portal vein thrombosis, one of the most dreaded complications of liver abscess is rupture of the abscess in the adjoining cavity, which can be peritoneal, pleural, pericardial, bowel and skin. It is not uncommon to see patients who present to the hospital with ruptured liver abscess, with or without sepsis, which necessitates emergent measures to be taken to drain the abscess and prevent and control sepsis. The following article presents one such case which was seen at a tertiary care hospital in India.

KEYWORDS : Pyogenic Liver Abscess, Amoebic Liver Abscess, Ruptured Liver Abscess

INTRODUCTION

The first liver abscesses were described by Hippocrates about 400 BCE, but their etiology, methods of diagnosis and treatment were first described in the 20th century. (8)

Liver abscess is an inflammatory space-occupying lesion of the liver caused by infectious agents. Amoebic liver abscess (ALA) and pyogenic liver abscess (PLA) are its two predominant causes. Other causes of liver abscess are fungi, mycobacteria, and other atypical organisms. ALA is the commonest cause of liver abscess in India, and it is seen in more than 60% of cases. (1)

Compared with other LA etiologies, there is a higher incidence of abscess rupture in patients with *Klebsiella pneumoniae* PLA, notwithstanding the rarity of spontaneous LA ruptures. Persistent hyperglycemic dysregulation in patients with diabetes, large abscess size >5 cm, thinned wall, and gas-forming abscesses (pain limited to the right upper quadrant and hepatic tenderness) are suggested risk factors for spontaneous rupture in *K. pneumoniae* PLA. (9)

The sites of rupture are subphrenic and perihepatic regions, peritoneum, pleura, skin, mediastinum and pericardium. A rupture in the bowel, pericardium or in the mediastinum is rare. (2)

We present an exceptional case of an old lady with an abscess over the anterior abdominal wall, secondary to spontaneous rupture of pyogenic liver abscess tracking via the falciform ligament.

Case

Figure 1: Swelling Over The Right Upper Abdomen Showing Signs Of Inflammation.

A 60 year old female patient came with chief complaints of pain in abdomen and swelling over her right upper abdomen, progressively increasing since 10 days associated with high grade fever. On examination, there was a single swelling in the supraumbilical region extending into right hypochondrium measuring 8x6 cm which was erythematous, firm, tender and warm on touch. An uncomplicated umbilical hernia was also noticed.

Routine blood investigations revealed raised white blood cell count (27000cells/cubic mm). USG abdomen was suggestive of an ill defined lesion of 5x4x4 cm in supraumbilical region with few hypoechoic areas within, reaching upto the preperitoneal layer. CECT abdomen and pelvis was suggestive of a collection in anterior abdominal wall above the level of umbilicus measuring 5.1x4.4x2.4 cm (27 cc), extending anteriorly into the subcutaneous plane and extending along the obliterated umbilical vein and falciform ligament upto the left portal vein with resultant thrombosis of left portal vein. Liver was enlarged with multiple (atleast 20) variable sized lesions in both lobes of liver, largest measuring 2x1.5 cm in segment IVB, suggestive of multiple pyogenic liver abscess.

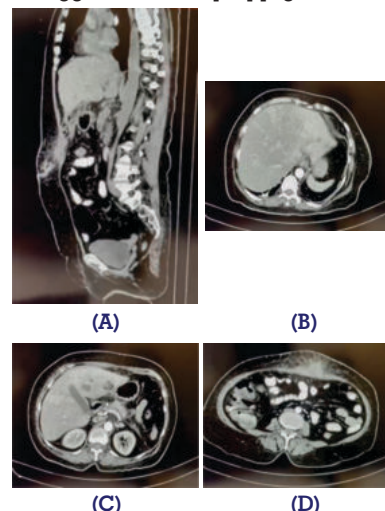


Figure 2: (A) Sagittal Section Of The CECT (A+P) Scan Showing Liver Abscess Tracking Along The Falciform Ligament Upto The Abdominal Wall; (B) And (C) Axial Section

Of The Scan Showing Multiple Hepatic Abscesses Scattered Throughout The Liver; (D) Axial Section Of The Scan Showing Abdominal Wall Fat Stranding.

Patient was started on Inj Ceftriaxone 1 g 12 hourly and Inj Metronidazole 500 mg 8 hourly for pyogenic liver abscess, but there was no decrease in the size and number of abscesses in the liver, as well as increase in the size of abscess over the abdominal wall. Hence decision was taken to do incision and drainage of the abdominal wall abscess. Abscess cavity was drained and closed with a drain placed inside the cavity. Pus culture was suggestive of *Enterococcus* species which was sensitive to Linezolid. Hence, patient was started on inj linezolid 600 mg iv 8 hourly after which patient's WBC counts gradually decreased over a period of 1 month. Hence patient was discharged on tablet Linezolid for 14 days and advised daily cleaning and dressing. Review USG abdomen after 1 month revealed few (4 to 5) hypoechoic lesions in liver, largest measuring 1.2 x 1.4 cm in segment IVB with minimal subcutaneous collection in right hypochondrium with no deeper extensions.



Figure 3: Incision and drainage of the abdominal wall abscess

DISCUSSION

Bacterial abscess of the liver is relatively rare. It has been described since the time of Hippocrates (400 BC), with the first published review by Bright appearing in 1936. In 1938, Ochsner's classic review heralded surgical drainage as the definitive therapy, despite the more aggressive approach to treatment, the mortality rate of treatment remained at 60–80%. (3)

In most cases of liver abscesses, it is possible to identify one of five ways of spreading the infection within the liver: 1) hematogenic: through the hepatic artery in severe septic processes as a metastatic-pyemic liver abscess or through the portal vein as a liver abscess with portal vascular thrombosis and occasionally through the umbilical vein as omphalophlebitis, 2) biliary: through the biliary tract as a result of inflammation of the gall bladder or bile ducts, as well as from invasion of parasites or foreign bodies, 3) by continuation: the spread of inflammatory processes to the liver from adjacent areas, 4) post-traumatically: after liver injuries or as a result of an intrahepatic hematoma, 5) postoperatively. (8)

Pyogenic liver abscess (PLA) is presumed to be secondary to biliary tract disease in patients with cholecystitis, cholangitis, or documented biliary duct abnormalities. However, up to 55% of patients present with "cryptogenic" PLA, meaning that there is no obvious source of infection. (4)

In patients with chronic cholecystitis, there may be contiguous spread of sepsis from lower segment IV and/or segment V to the liver parenchyma if the infected gallbladder is perforated. (5)

In a study conducted by V. Sahu et. Al., 100 patients of hepatic abscess were studied in a single tertiary care centre in India, out of which *E. coli* was the most common presenting organism in 43.75% patients followed by *Klebsiella* in 37.50% patients. (6)

The development of new radiologic techniques, improvement in microbiologic identification, and the advancement of drainage techniques, as well as improved supportive care, have decreased mortality rates to 5–30%, yet, the prevalence of the condition has remained relatively unchanged. (3)

Laparoscopy can be used for surgical drainage for unruptured and ruptured intraperitoneal liver abscess, at the same time can also treat associated diseases (e.g. cholecystectomy or common bile duct exploration for biliary lithiasis). A meta analysis done by A. Ndong et. Al. concluded that the main indication for laparoscopy was failure of first-line treatment (antibiotic treatment and/or percutaneous drainage and/or needle aspiration). (7)

CONCLUSION

Pyogenic hepatic abscess rupture into the abdominal wall is a rare presentation and requires prompt diagnosis and treatment. Medical management can suffice in some cases, but surgical drainage of the abdominal wall abscess is a viable option which can decrease the septic burden of the patient and hasten recovery.

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