

**SPONTANEOUS HEMORRHAGE AS A RARE COMPLICATION IN LIVER ABSCESS:
A REPORT OF 2 CASES****Pranav Pandoh¹, Nitin Yadav*¹, Shubham Sulania², Roomi Yadav³, Rahul¹ and Jyotsna Sen⁴**¹Senior Resident, Department of Radiodiagnosis, Pt. B D Sharma PGIMS, Rohtak.²Junior Resident, Department of Radiodiagnosis, Pt. B D Sharma PGIMS, Rohtak.³Junior Resident, Department of Pathology, Pt. B D Sharma PGIMS, Rohtak.⁴Senior Professor, Department of Radiodiagnosis, Pt. B D Sharma PGIMS, Rohtak.***Corresponding Author: Nitin Yadav**

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ABSTRACT

Imaging plays an important role in detection, characterization and treatment of liver abscess. Both pyogenic and amebic liver abscess are a common pathology in patients presenting with right upper quadrant pain. Prompt and correct diagnosis is the key to initiate effective treatment. It is not uncommon for these patients to first present with complications. Hemorrhage within a liver abscess can be because of a varied no. of causes. However, spontaneous hemorrhage without a history of interventional procedures is very rare. We are reporting 2 cases of hepatic pyogenic abscesses who developed spontaneous hemorrhage and were managed with aspiration and antibiotics.

KEYWORDS: Liver abscess, hemorrhagic liver lesions.**INTRODUCTION**

Liver abscesses are quite a common pathology in India in patients presenting with pain in right hypochondrium and/or fever. There are mainly two types of abscesses: amoebic and pyogenic. With wider availability of imaging, esp. ultrasonography, hepatic abscesses are commonly detected first by the radiologist and imaging guided interventions now form an essential part of treatment of these patients. It is not uncommon for patients with liver abscess to present with complications. These include right pleural effusion and atelectasis, subphrenic abscess, jaundice, ascites and subhepatic collections. The abscess can also perforate into pleuro-pulmonary cavity, subphrenic space, peritoneal cavity or pericardial space. Rarer complications like hemorrhage may also occur.^[1]

CASE REPORT

A 32 year old male patient presented with history of pain in right hypochondrium and fever since 7 days. Initial ultrasound done at a primary care centre revealed a hypoechoic lesion with diffuse internal echoes in left lobe of liver consistent with the diagnosis of hepatic abscess. The patient was started on antibiotics. However, he complained of increasing pain since last 2 days and was referred to our institute. Ultrasound abdomen done at presentation depicted a heteroechoic, predominantly hyperechoic, lesion in segment IV of liver (Figure 1). The patient was advised further evaluation and contrast enhanced computed tomography (CT) of abdomen was performed. CT showed a lesion with ill-defined walls,

surrounding hypodense edema and internal hyperdense contents on plain scan in segment IV of liver (Figure 3). Subtle rim enhancement was noted on post-contrast images. A differential diagnosis of hepatic lesions with hemorrhage was considered, including liver abscess, hemangioma and adenoma. Contrast enhanced MRI abdomen was performed and it revealed a ring-enhancing lesion with heterogenous signal intensity showing central blooming on GRE images suggestive of hemorrhage (Figures 4, 5). Central diffusion restriction was also seen (Figure 6). On follow up scans, the peripheral part of the lesion became hypoechoic while the central part continued to be echogenic suggesting resolving hematoma. (Figure 2). On aspiration, blood mixed with pus was found. On cytological analysis, leucocytes mixed with red blood cells were noted and patient was diagnosed with pyogenic liver abscess with hemorrhage. USG guided therapeutic aspiration was done. The patient improved and was discharged on day 10.

Another patient presented to our institute with history of fever and right upper quadrant pain since 4 days. On ultrasound, a predominantly echogenic lesion was noted in segment IV/V of liver (Figure 7). On CT, the lesion was hyperdense on plain scan with few air foci within (Figure 8). USG guided aspiration of lesion revealed hemorrhagic pus and diagnosis of liver abscess with hemorrhage was suggested. On culture of the aspirated contents, Staphylococcus aureus was detected to be the pathogen. Appropriate antibiotics were started. The

patient had uneventful recovery and was discharged on 9th day.

DISCUSSION

Hemorrhage within a liver abscess is an uncommon phenomenon. Radin *et al.* evaluated CT of liver abscesses in 23 patients and reported only one patient with intra-abscess hemorrhage. The patient experienced acute onset of right upper quadrant pain and a precipitous drop in hematocrit. CT showed high-density material within a large amoebic abscess. The impression of hemorrhage was confirmed by percutaneous needle aspiration.^[2]

There are many causes of hemorrhage within a hepatic lesion. It can be spontaneous as in the case of improper use of anti-coagulant drugs. Liver tumors that are subject to hemorrhage can be malignant (hepatocellular carcinoma, liver metastases) or benign (adenoma, angioma, focal nodular hyperplasia). Rarer causes include liver abscesses, parasitic and nonparasitic cysts, peliosis hepatis, amyloidosis, and the pre-eclamptic HELLP syndrome.^[3]

Management of these lesions varies according to diagnosis. Transplantation remains the best treatment for hepatocellular carcinoma. Other treatments, including resection, radiofrequency ablation (RFA) and potentially, systemic therapy with sorafenib should be used to bridge patients to transplant or to delay recurrence if possible.^[4] Benign lesions like symptomatic hepatic adenomas should be resected regardless of size. Large incidental adenomas found during pregnancy may be considered for resection during the second trimester, when the risk is lowest. Asymptomatic adenomas smaller than 5 centimeters may be managed with close monitoring. Hepatic hemangiomas have been treated with a wide array of therapies. Traditionally, surgical resection and surgical enucleation are the treatments of choice. Minimally invasive therapies for hepatic hemangioma include arterial embolization, radiofrequency ablation and hepatic irradiation. Orthotopic liver transplantation has been performed in rare circumstances. Hepatic abscesses are usually drained or aspirated. Antibiotics play an adjunctive role.

It is very important to detect hemorrhage within a liver abscess so as to prevent ominous drop in hemoglobin and hematocrit levels and to guide proper management. On ultrasonography, abscess with hemorrhage presents as a hyperechoic lesion. However, since the differential diagnosis of hyperechoic liver lesions include a variety of lesions and hemorrhage is a rare complication in liver abscess, diagnosis of hemorrhage within a liver abscess on ultrasonography requires high degree of suspicion and a close correlation with history and prior imaging. In case 1, prior USG suggestive of liver abscess was a helpful pointer towards correct diagnosis. Hemorrhage is usually better detected on CT/MRI.

Once the diagnosis of hemorrhage within a liver abscess is made, further management depends upon the cause of hemorrhage. Spontaneous liver hemorrhage caused by improper use of anticoagulant agents (e.g., coumarin derivatives or heparin) can be treated by stopping the defaulter drug. Hepatic artery pseudoaneurysm has been rarely reported as a complication of liver abscess. Few cases have been reported of pseudoaneurysm being a complication of indirect haemagglutination proven amoebic liver abscess and only one radiologic report has been described concerning nontraumatic intrahepatic artery pseudoaneurysm being a complication of pyogenic liver abscess.^[6,7] Ruptured pseudoaneurysm can be a cause of intra-abscess bleeding. In adults, imaging-guided percutaneous aspiration and insertion of a pigtail catheter in liver abscess is a well-accepted treatment modality. Studies have proved that complications such as bleeding into abscess cavity can occur due to these procedures and interventions.^[8,9,10]

FIGURES



Figure 1: USG abdomen showing a predominantly hyperechoic lesion in segment IV of liver (case 1).



Figure 2: USG abdomen done after 7 days shows that the peripheral part of the lesion has become hypoechoic, while the central part is still hyperechoic (case 1).

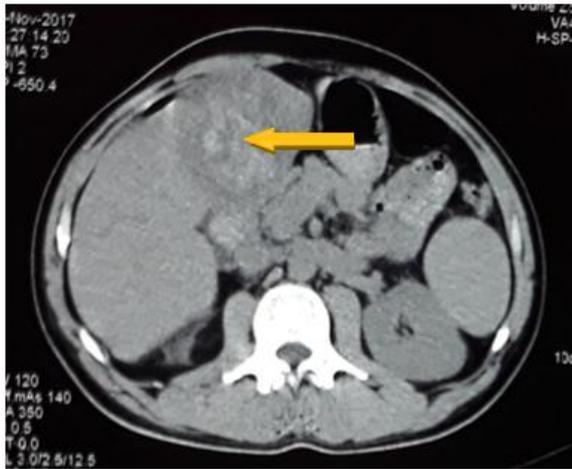


Figure 3: NCCT abdomen image showing hyperdense contents (arrow) within the lesion in left lobe of liver (case 1).

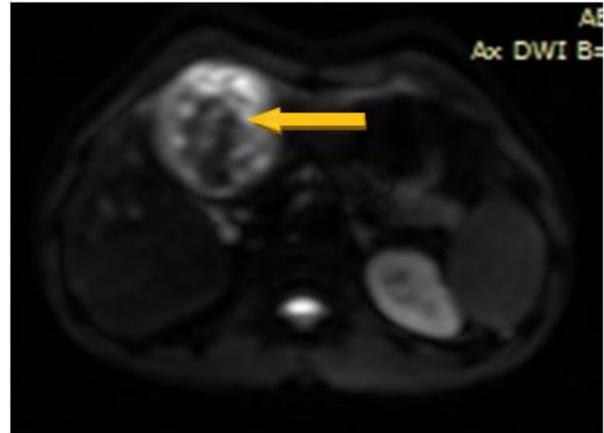


Figure 6: DWI image showing diffusion restriction (arrow) within the lesion (case 1).

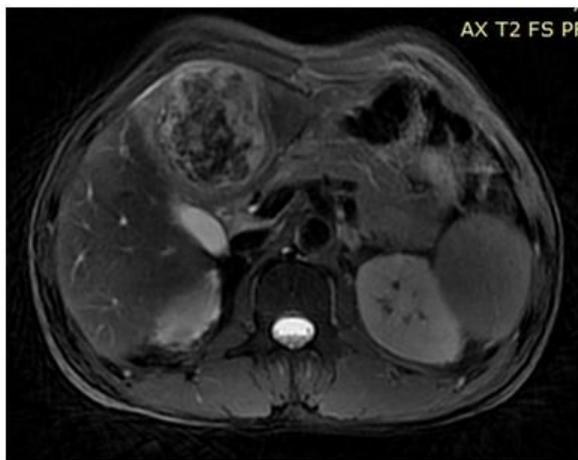


Figure 4: T2W axial MRI image showing heterogenous intensity lesion in left lobe of liver (case 1).

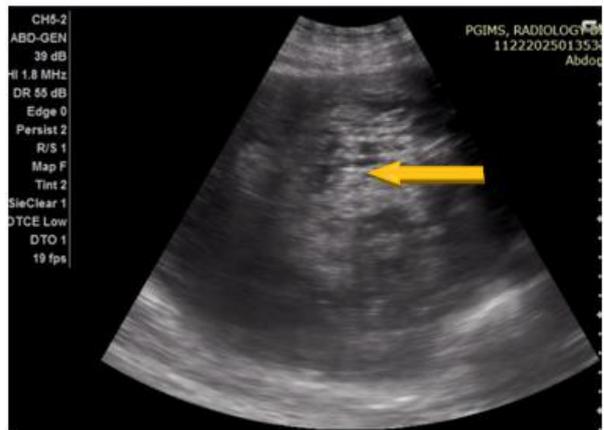


Figure 7: USG abdomen image in case 2 showing echogenic lesion (arrow) in segment V of liver.

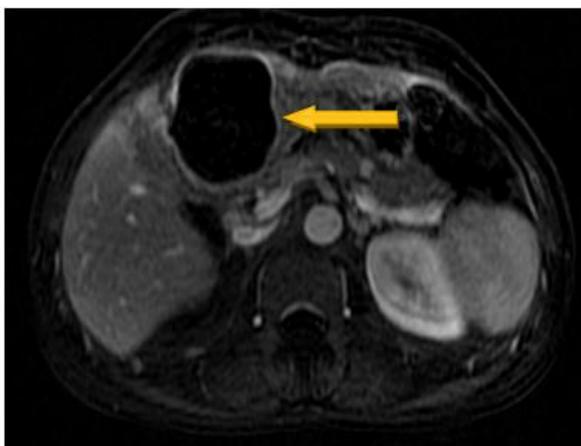


Figure 5: Post contrast T1W image showing rim enhancement (arrow) of the lesion (case 1).

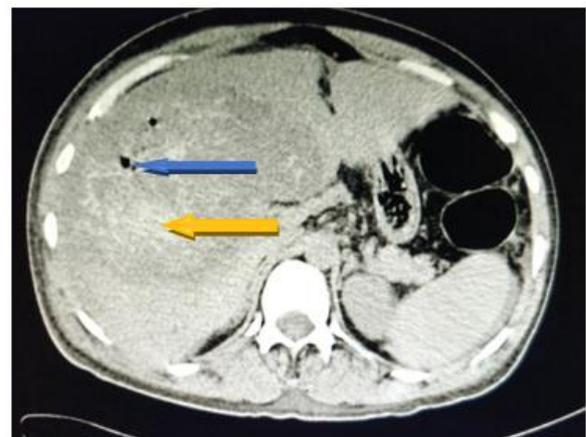


Figure 8: NCCT abdomen image in case 2 showing hyperdense contents (yellow arrow) within the lesion with few air foci (blue arrow).

CONCLUSION

It can be concluded that spontaneous hemorrhage can occur in a liver abscess and though it is a rare complication, it is important to differentiate an abscess with hemorrhage from other benign and malignant liver lesions and to diagnose it at an early stage for appropriate management.

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