Amoebic Liver Abscess with Hepatic Artery Pseudoaneurysm: Successful Treatment by Interventional Radiology

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Amoebic liver abscess is most common extra-intestinal presentation of amoebiasis. It is rarely complicated with vascular involvement including thrombosis of hepatic vein or IVC and pseudo-aneurysm of hepatic artery. We describe a case of hepatic artery pseudo-aneurysm as a complication of amoebic liver abscess treated with percutaneous embolization. (J CLIN EXP HEPATOL 2015;5:86–88)

Amoebiasis is the infection of the human gastrointestinal tract by *Entamoeba histolytica* and its incidence is less than 10% in the world population.¹ The incidence of amoebic liver abscess (ALA) has been reported to vary between 3% and 9% of all cases of amoebiasis.² In tropical countries like India, ALA is endemic. Usual complication of ALA is leakage of the abscess into the pleural cavity, with formation of empyema thoracis. Intra-abdominal extension following perforation into the peritoneal cavity is usually associated with shock and generalized peritonitis and may occur in up to 7% of cases. Very rarely vascular complications can occur in ALA.³ We present a case of amoebic liver abscess with hepatic artery pseudoaneurysm. The patient was successfully managed by percutaneous transarterial embolization.

CASE REPORT

A 45-year-old male was admitted with 10-day history of abdominal pain and fever with chills and rigor. On examination he was febrile and tenderness was noted in right upper quadrant. Hematological investigation showed hemoglobin level 14.1 g/dl and total leukocyte count 12.7 (thousand/mm³) with increased polymorphs. Liver and kidney functions were within normal range and normal coagulation profile. Abdominal ultrasound

examination showed hepatomegaly with a large abscess measuring 8.5 × 7.1 cm in right lobe of liver. Patient was treated with intravenous metronidazole for next 7 days. On the 8th day of treatment, patient developed hematemesis and melena. Hemoglobin drop was noted from 14.1 g/dl to 8.1 g/dl. Upper gastrointestinal endoscopy was done, revealed blood clot in stomach and duodenum. Blood was seen coming from papilla. Four unit packed red cell were infused. The patient underwent computed tomographic angiography which revealed a small hepatic artery pseudoaneurysm measuring 2 mm × 2 mm adjacent to the liver abscess (Figures 1 and 2). Patient was referred to the Department of Interventional Radiology for percutaneous embolization of the pseudoaneurysm and abscess drainage.

In angiographic suite, under all sterile conditions and through transfemoral route celiac artery angiogram was performed which revealed a pseudoaneurysm arising from segment 7 branch of the right hepatic artery (Figure 3). The microcatheter was advanced into the right posterior hepatic artery and we tried to cannulate the distal circulation of pseudoaneurysm but we were not able to cross the neck of pseudoaneurysm. Catheter was placed in proximal part of segment 7 branch of right hepatic artery and N-butyl cyano acrylate (0.1 ml) and lipiodol (0.4 ml) mixture was injected.

Post embolization celiac and superior mesenteric artery angiogram showed complete occlusion of aneurysm with maintained liver perfusion through right anterior and left hepatic artery (Figure 4). Patient tolerated the procedure well with maintained hemoglobin levels. After 2 days 14-F pigtail was inserted into the liver abscess as patient complaint of fever and increased leukocyte count despite intravenous medications. Patient was discharged from hospital in stable condition. The patient made an uneventful recovery.

Keywords: amoebiasis, pseudoaneurysm, percutaneous, embolization

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Abbreviations: ALA: amoebic liver abscess; CT: computed tomography; IVC: inferior vena cava; NBCA: N-butyl cyanoacrylate; PVA: poly vinyl alcohol particles

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Figure 1 Axial Computed Tomographic angiography image in Maximum intensity projection showing a pseudoaneurysm arising from segment 7 branch right hepatic artery seen along the wall of liver abscess.

DISCUSSION

Amebiasis is one of the common diseases in the tropical and subtropical countries like India. Less than 10% of patients with amebiasis present with liver abscess.⁴ Patients with liver abscess usually present with complaints of fever, right hypochondriac pain and with feeling of non-wellbeing. They usually are not able to recall any episode of dysentery. In subtropical countries these symptomology leads clinician to evaluate for any underlying liver pathology like an abscess. Ultrasound of abdomen is the screening modality of choice. Ultrasound reveals a single

Figure 2 Axial Computed Tomographic angiography image in volume rendered projection showing a pseudoaneurysm from segment 7 branch of right hepatic artery.

Figure 3 Coeliac artery angiogram showing a pseudoaneurysm arising from the branch of right posterior hepatic artery.

large hypoechoic lesion seen predominantly in right lobe of liver with ill-defined margins. On colour flow imaging no internal vascularity is seen. In contrast to this, pyogenic abscesses are usually multiple and small in size and usually are thick walled. Computed tomography is needed in patients in whom we suspect complications like rupture and vascular involvement. Complications associated with amoebic liver abscess include rupture into the pleural, peritoneal and pericardial cavity which are seen in less than 10% of cases.⁵ Peritoneal rupture of the abscess can lead to peritonitis which requires active intervention. Rupture into pericardium is a life threatening complication. Rarely they can rupture into bile duct or can cause vascular complications.

Vascular complications that can be seen with amoebic abscess include hepatic vein or inferior vena cava

Figure 4 Post embolization coeliac artery angiogram showing glue cast in segment 7 branch of right hepatic artery and rest of liver showing normal perfusion.

thrombosis, rupture into portal vein, leading to its thrombosis or rare complication like hepatic artery pseudo aneurysm formation. Hepatic vein and IVC thrombosis is one of the most common vascular complication that can be picked up by contrast enhanced CT.⁶ The exact mechanism of vascular complication is not known. Hepatic artery pseudo aneurysm is one of the rarer complications which could be due to inflammatory process of the arterial wall caused by *Entamoeba histolytica*. Patients with these types of rare complications present with hemobilia. Patients with pseudo-aneurysm formation usually are picked up late. Accurate clinical suspicion is required for its early detection. As seen in our case patient with a known amebic liver abscess present with hematemesis and melena. CT angiography should be performed to rule out any arterial cause of bleeding. Hepatic artery pseudo-aneurysm when seen adjacent to liver abscess confirms the diagnosis. Early detection of vascular complication reduces the mortality and morbidity. Percutaneous embolisation of hepatic artery pseudoaneurysm with liver abscess drainage is the first line of treatment in these cases. Percutaneous embolisation is a minimally invasive technique to treat splanchnic artery pseudoaneurysms with success rate of approximately 90%. Type of embolic agents used are usually metallic coils, non-absorbable poly vinyl alcohol particles (PVA) or liquid embolic agents like N-butyl cyanoacrylate (NBCA).⁷ The choice of embolic agent used depends upon arterial anatomy, size of the pseudoaneurysm and collateral supply. When the arterial anatomy is favorable, coils are the most commonly used embolic agent in pseudoaneurysms. They are placed across the neck of the pseudoaneurysm. PVA particles and NBCA are used when there is absence of distal circulation or there is unfavorable arterial anat-

omy.⁸ In failed cases, re-intervention or exploratory laparotomy is done.

To conclude, hepatic artery pseudoaneurysm can be a fatal complication of ALA which requires urgent intervention. Percutaneous trans-arterial embolization is now considered an initial and definitive modality to treat pseudo aneurysm. It is safe, less invasive and effective procedure in these type of life threatening complications.

CONFLICTS OF INTEREST

All authors have none to declare.

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