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Students' Corner

Case Report

Hepatic artery pseudoaneurysm; a rare complication of Amoebic liver abscess

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Abstract

Hepatic artery pseudoaneurysm (HAP) is an infrequently encountered entity, usually seen secondary to blunt or penetrating trauma. The clinical presentation is often due to complications such as intrahepatic or intraperitoneal bleeding as a result of rupture of the pseudoaneurysm. Diagnosis is frequently delayed and made by splanchnic angiography. HAP associated with a liver abscess, has very rarely been described in the literature. We report the case of a 50-year-old man with amoebic liver abscess and right hepatic artery pseudoaneurysm which was suspected on high resolution contrast-enhanced abdominal computer tomography (CT). The lesion was confirmed by arteriography and treated prophylactically with transcatheter embolization.

Keywords: Hepatic artery pseudoaneurysm, Amoebic liver abscess, transcatheter embolization.

Introduction

Hepatic artery pseudoaneurysm (HAP) is an infrequently encountered entity that is usually seen secondary to blunt or penetrating trauma. The clinical presentation is often due to complications such as intrahepatic or intraperitoneal bleeding resulting from rupture of the pseudoaneurysm. Diagnosis is frequently delayed and made by splanchnic angiography. HAP associated with a liver abscess, has very rarely been described in the literature.

Case Report

A 50 year-old man presented to the Emergency Room with fever, abdominal pain, anorexia and vomiting of ten days' duration. Clinical examination revealed that the patient was icteric and febrile with a temperature of thirty-eight degrees Celsius. On abdominal examination, there was tenderness in the right upper quadrant. Examination of cardiovascular, respiratory and central nervous system was normal. Laboratory data showed leukocytosis with white blood cell count of 31,000/mm³ and deranged liver function tests with total bilirubin level of 15.2 mg/dL, aspartate aminotransferase level of 174 IU/L, alanine aminotransferase level of 155 IU/L and alkaline phosphatase level of 432 IU/L. Ultrasonography showed



Figure-1: Hepatic artery pseudoaneurysm (CT Scan).



Figure-2: Pre and post embolization arteriogram. The right hepatic artery pseudoaneurysm has disappeared.

two heterogeneous areas without appreciable internal vascularity in the right lobe of the liver measuring 10 x 10 x 8 cm and 8 x 7 x 7 cm respectively; suggestive of liver abscess. Due to its size the larger cavity was drained percutaneously under ultrasound guidance. Broad spectrum antibiotics covering gram negative bacteria and Metronidazole was started empirically. Over the next 36 hours the patient's condition did not improve; to evaluate further a contrast enhanced abdominal CT scan was performed. This confirmed the presence of 2 large abscesses with the drain lying in the smaller cavity. The larger cavity in addition demonstrated an aneurysmal dilatation of an artery. No other abdominal pathology was noted. Selective angiography confirmed the diagnosis of pseudoaneurysm in the right lobe of the liver arising from the segmental branch of the right hepatic artery (Figure-1). The aneurysm was successfully occluded by transcatheter embolization (Figure-2). The Indirect Haemagglutination (IHA) levels were positive (1:8192) confirming the amoebic etiology of the abscess. The patient's condition gradually improved and he was discharged on the ninth day after admission on oral Metronidazole.

Discussion

The HAP is the second most commonly encountered splanchnic artery pseudoaneurysm, with splenic artery aneurysm being the first.^{1,2} The most common cause of HAP is trauma, which can be blunt, penetrating, or iatrogenic, even if caused by liver biopsy or percutaneous transhepatic cholangiography. HAP has been rarely reported as a complication of liver abscess.³ Few cases have been reported of pseudoaneurysm being a complication of IHA-proven amoebic liver abscess and only one radiologic report has been described concerning nontraumatic intrahepatic artery pseudoaneurysm being a complication of pyogenic liver abscess.^{3,4} In our setting the estimated population prevalence of *Entamoeba Histolytica* is greater than 5-10% hence most liver abscesses are presumed to be amoebic in etiology and appropriate empirical treatment is started before serologic findings confirm the etiology.⁵ In our patient, Metronidazole was started empirically and the IHA

levels confirmed amoebic etiology. The pathogenic mechanism of the HAP has been described as being a direct result of the amoebic enzymatic action in the liver abscess eroding the vessel wall.⁵ Most pseudoaneurysms are extrahepatic, and the right hepatic artery is involved more frequently than the left one. Aneurysms of the hepatic artery can rupture into the free peritoneal cavity or the common bile duct, gallbladder, duodenum, or portal vein. Communication with the bile ducts leads to haemobilia. Perforation into the peritoneal cavity with subsequent shock is relatively common.⁶ Another complication of HAP is enteric fistulization.^{7,8} Surgical techniques such as ligation of the hepatic artery or hepatic resection have been used to treat HAP, but the current treatment of choice is endovascular embolization of the feeding artery. With improvements in radiological imaging more uncommon conditions will be identified at an earlier phase of their natural history. In these situations there is a growing role of prophylactic angiographic embolization which if undertaken in a timely manner can prevent the development of these potentially fatal complications.

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