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Successful emergency endovascular treatment of iatrogenic giant hepatic artery pseudoaneurysm

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Visceral artery aneurysms and visceral artery pseudoaneurysms frequently present as life-threatening emergencies. Hepatic artery pseudoaneurysm (HAP) is a very rare disease but in cases of complication, there is a very high mortality. The most common cause of HAP is iatrogenic trauma such as liver biopsy, transhepatic biliary drainage and cholecystectomy. We present a case of hepatic artery pseudoaneurysm presenting as hemobilia managed with cover stent of the aneurysm.

KEY WORDS: Hepatic artery, Visceral aneurysm, Visceral pseudo-aneurism

Introduction

Hepatic artery aneurysms represent approximately 20% of all visceral artery aneurysms, and 80% of these aneurysms are extrahepatic. The majority of these aneurysms are solitary and involve the common or right hepatic artery [1,2]. Hepatic artery pseudoaneurysm (HAP) is an uncommon complication following laparascopic cholecystectomy. Endovascular treatment seems to be the best approach. We present the case and successful endovascular stent greft treatment of a patient who developed a right hepatic artery pseudoaneurysm following laparoscopic cholecystectomy.

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Case Report

A 49-year-old female patient, approximately 5 weeks after the laparascopic cholecystectomy, presented with acute upper abdominal pain, gastrointestinal bleeding, nausea and vomiting. On initial presentation, his haemoglobin level was 8.2 g/dl (normal range 13-17 g/dl). Elaveted liver function tests and bilirubin level (AST: 379, ALT:1002, T. Bil:3.1, D.bil: 2). Emergency B-mod and doppler ultrasound showed a well defined pseudoaneurysm in the portal hilus. Contrast enhanced Abdominal CT confirmed the findings described in the ultrasound examination. And also there is about 5 cm diameter subcapsular hematoma in the liver (Fig. 1). Endoscopy showed active bleeding from ampulla of vater. The patient was transferred to the interventional radiology department and and celiac angiography was performed immediately. After catheterization of the main hepatic artery, selective angiography showed a narrow-necked 91x82 mm sized pseudoaneurysm originate from the right hepatic artery (Fig. 2a). Pseudoaneurysm treathed with 19x5 mm covered stent, there was no complication during procedures. Control angiography showed that there is no leakage after the procedure (Fig. 2b).

Fig. 1: Abdominal CT showed 5 cm diameter subcapsular hematoma (asteriks).

Fig. 2: Hepatic artery pseudoaneurysm visualized with selective arteriography. (A) Showed 9x8 cm sized HAP (asteriks) and hepatic arter injury (arrow); (B) Successful endovascular treatment of pseudoaneurysm with covered stent. Control angiography showed that there is no leakage.

After the procedure the patient clinic was very well and laboratory findings gradually improved. Contrast-enhanced CT scan was performed after five days to treatment and showed that there is no leakage in the aneurysm.

Discussion

Visceral artery aneurysms are rare with a reported incidence of 0.01 to 0.2% on routine autopsies [3]. Hepatic artery aneurysm is the second most common type of visceral artery aneurysm behind the splenic artery and followed by superior mesenteric and celiac [4]. Visceral artery aneurysms and visceral artery pseudoaneurysms frequently present as life-threatening emergencies. However, visceral artery aneurysms are clinically significant and potentially lethal; 22% of all visceral artery aneurysms present as clinical emergencies; 8.5% result in death [5]. Hepatic artery pseudoaneurysms present in a number of ways, including hemobilia (64%), hematemesis (30%), hematochezia (14%), abdominal pain (20%), and asymptomatic (10%) [6].

Pseudoaneurysm evolution is towards growth and eventual rupture (21-80%) with a significant morbidity and mortality rate (0-40%) and, so, its diagnosis implies an active treatment [7]. HAP with hemobilia is a rare but serious complication associated with Laparoscopic cholecystectomy. Definitive diagnosis of HAP with hemobilia requires either endoscopy or radiological imaging [8].

In the treatment of pseudoaneurysm for a long time surgery has been accepted as the only therapeutic option with a high rate of failure, morbidity and mortality. Recently, endovascular treatment with embolization or stent-graft placement seems to be the best approach, and the main complications include gallbladder or hepatic

necrosis, pseudoaneurysm rupture, delayed common bile duct stricture due to ischemia, etc [9]. Our patients were hemodynamically unstable at the time of placement of the stent-grafts would likely not have survived an open procedure. The endovascular approach was evidently the best choice.

As new technologies for endovascular procedures emerge, stenting for arterial pseudoaneurysms may prove to be a safety and efficacy alternative to coil embolization and surgical intervention. Use of a covered stent-graft to repair visceral artery pseudoaneurysm has proven a successful procedure and lifesaving when deployed for exsanguinating hemorrhage. This case demonstrate the potential efficacy of stent-graft placement for the successful treatment of HAP.

Riassunto

Gli aneurismi, ed anche gli pseudo-aneurismi delle arterie viscerali si manifestano molto spesso come emergenze rischiose per la vita del paziente. Lo pseudo-aneurisma dell'arteria epatica (HAP) rappresenta una patologia molto rara, che in caso di complicazioni è caratterizzata da una elevata mortalità.

La causa più frequente di HAP è traumatica e di natura iatrogena, come la biopsia epatica, il drenaggio biliare trans-epatico e la stessa colecistectomia.

Viene presentato un caso di pseudo-aneurisma dell'arfteria epatica manifestatosi come emobilia e trattato con uno stent di protezione dell'aneurisma.

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