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Giant Aneurysm of the Hepatic Artery Occurring In a Cholangitis: A Rare Incidental Finding

I.Chaouche-N.ELBouardi-M.Ennmer-M.Haloua-B.Alami-Y.Lamrani-M.Boubbou-M.Maaroufi.

Diagnostic and Interventional Radiology Service –UH Hassan II-FES-Morocco.
Faculty of medicine and pharmacy-Fez

Abstract: *Hepatic artery aneurysms are uncommon, accounting for 20% of digestive artery aneurysms and ranking second behind splenic artery aneurysms (1), with a grim prognosis and mortality rate of 30-45% (2) (3). They can be asymptomatic or revealed by a ruptures symptoms including haemobilia,jaundice and pain in the right hypochondrium. Here in we report a case of a 59-year-old man who presented with an acute cholangitis diagnosed in an enhanced abdominal CT, whichsubsequently revealed a giant false aneurysm of the proper hepatic artery.We managed it using endovascular procedure. The outcome was satisfying.*

Keywords: *Cholangitis-Aneurysm - proper hepatic artery -CT angiography-embolization.*

INTRODUCTION

Hepatic artery aneurysm (HAA) is the common visceral aneurysms with the highest reported rate of rupture . The clinical manifestations depending on the size of the aneurysm include epigastric pain, obstruction of biliary tract, rupture and death. Imaging modalities like computed tomography (CT) scan and CT-angiography have a valuable role in the early detection of Hepatic artery aneurysm. Complications and selecting appropriate treatments depending on the size and location of the aneurysms (1).

Case Presentation:

A 59-year-old man with no particular medical history, was admitted to the emergency department for an acuteonset of right hypochondrium pain, jaundice and fever.

The patient was alerted in time and space. Arterial pression (130/75mmHg) and respiratory rate (12 c/min) were normal. Temperature was remarkably high (39°C). The jaundice was cholestatic with adark urine and light-colored stools. Deep palpation of the abdomen showed a defense of the right hypochondrium, the rest of abdominal examination was normal otherwise.

Laboratory tests showed an increased level of white blood cells(30×103 cells/mm3) and C reactive protein (CRP) 57mg/dL. Liver enzymes was slightly high (SGOT240 U/Lans SGPT 462 U/L). Cholestasis markers were also high total bilirubin (110 µmol/L), direct bilirubin(98 µmol/L) and indirect bilirubin (31 µmol/L), gamma-glutamyl transferase (1742 U/L).

The patient underwent an enhanced abdominal CT scan. It showed a partially thrombosed saccular aneurysm arising from the anterior wall of the proper hepatic artery measuring 8.5 x 4.5 cm in size. It was fistulized at the common hepatic bile duct, responsible for upstream bile ducts dilatation and haemobilias shown in figure 3,4.

Figure 1: Aneurysm of the hepatic artery proper (coronal section).

Figure 2: Hepatic artery aneurysm (sagittal section)

The gallbladder was distended,measuring 47 mm in transverse diameter, with a parietal defect at the level of the bladder fundus with a large intraperitoneal effusion.He was therefore diagnosed with acute cholangitis from a giant aneurysm arising from the proper hepatic artery and complicated with haemobilia.

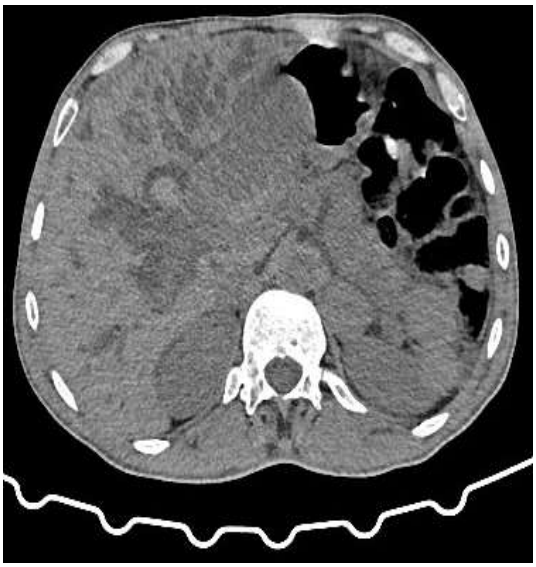

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Figure 3: haemobilia in the proximal VBIH

Given the above findings, we decided to treat this aneurysm using endovascular procedure.

The aneurysmal sac was embolized using glue (oxynx*) and both proper hepatic artery and gastro duodenal artery were embolized using coils to ensure total exclusion of inflow and outflow branches of the aneurysmal sac and prevent recurrence.

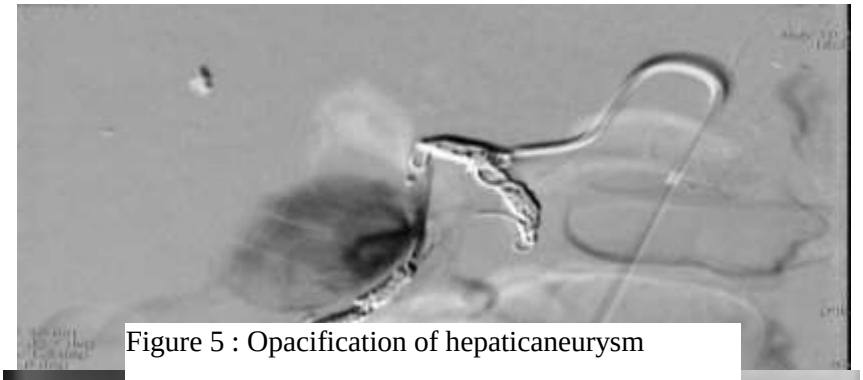

Figure 5 : Opacification of hepaticaneurysm

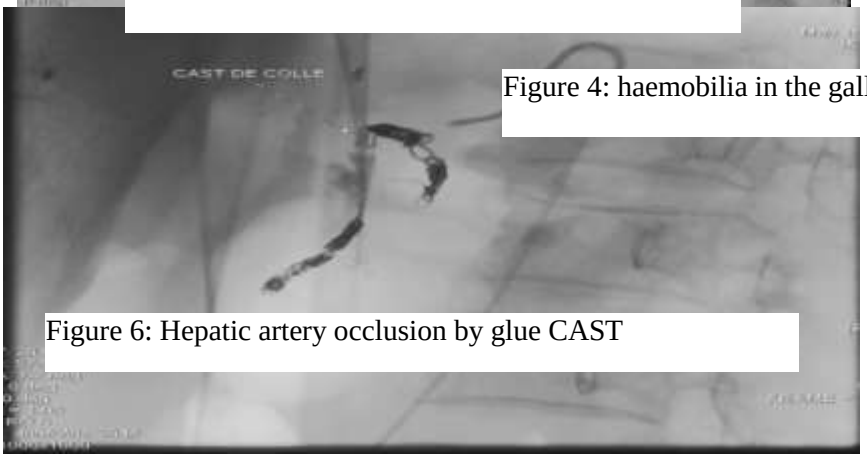

Figure 4: haemobilia in the gallbladder VBIH

Figure 6: Hepatic artery occlusion by glue CAST

Final control was satisfactory showing a total exclusion of the aneurysmal sac (figure 7).

Figure 7: Final control; exclusion of aneurysm

An enhanced abdominal CT scan seven days following the procedure showed a total exclusion of the aneurysmal sac and no abnormalities in both biliary duct and gallbladder.

DISCUSSION:

The hepatic artery is the second most common location of splanchnic aneurysm formation and is believed to represent approximately 20% of these lesions. The true incidence is not known, but it is estimated to be less than 0.4% in the general population. Approximately 75% to 80% of these aneurysms are located along the extrahepatic vasculature, with the remainder involving the intraparenchymal and/or extraparenchymal liver space (20%); in rare cases (<5%) they may be located exclusively within the liver. Along the extrahepatic vasculature, 63% are found in the common hepatic artery, 28% in the right hepatic artery, 5% in the left hepatic artery, and 4% in both the left and right hepatic arteries. The male-to-female ratio is 3 to 2, with reported rates of rupture ranging from 20% to 80%. Atherosclerosis is the leading cause of HAA formation, accounting for approximately 30% of cases. In a Mayo Clinic, the most commonly associated comorbidity was hypertension, occurring in 72% of patients. Arterial dysplasia, medial degeneration, trauma, polyarteritis nodosa, and biliary diseases have also been implicated in the formation of HAAs. Percutaneous and endoscopic procedures will undoubtedly contribute an ever-increasing source of HAA formation (1) (2) (3) (4) (5).

They are often asymptomatic with a range of % of incidental finding. They can however fistulate in the biliary duct causing hemobilia and biliary truct dilatation, which clinically manifest as a jaundice, painful right hypochondrium and fever. Its rupture in the abdominal cavity is not rare and can manifest as a sudden abdominal pain, with hemodynamic shock. It is a life-threatening condition (6) (7).

Following the development of abdominal imaging methods, particularly hepato-biliary ultrasound, and abdominal CT, the diagnostic of hepatic aneurysms has become easier, with an increase in the number of cases of accidental discovery. In addition, it allows a complete and precise lesion assessment of the aneurysm (3).
Sonography demonstrates a rounded area with swirling flow on color. The spectral tracing is usually quite distorted due to turbulence. A clot may eventually develop within the aneurysm or pseudoaneurysm,the CT remains the gold standard especially in arterial time allowing the precise analysis of the aneurysm and to program the operative gesture (8) (6)

Angiography is not only a diagnostic tool, but also a therapeutic modality of choice in splanchnic aneurysms by embolization. It can also provide evidence of collateral circulation, determine aneurysm size and shape, discover arterioportal fistulas, and provide accurate anatomical information needed for embolization or surgery (9; 9).

The etiologies of hepatic aneurysms remain poorly defined, however, we can retain atheromatous, dysplastic, infectious, systemic and traumatic origin (3).

In our case, there was no traumatic, infectious or dysplastic context, which makes the atheromatous origin the most likely because of the age of the patient and the parietal thrombosis.

Therapeutically,operative intervention for hepatic artery aneurysms should be considered in all but very high-risk patients. Treatment should be individualized depending on size and location of the aneurysm. Endovascular or open surgical treatment is recommended for all symptomatic aneurysms and all asymptomatic saccular hepatic aneurysms exceedingly 2 cm in diameter. Expanding intrahepatic aneurysms and pseudoaneurysms of the extrahepatic arteries warrant operative intervention (7).

Percutaneous transcatheter obliteration of hepatic artery aneurysms with balloons, coils (metallic coils, microcoils),liquid embolic agents

such as n-butyl cyanoacrylate glue and onyx, or various types of particulate matter, including thrombin, is preferred over an open surgical intervention. However, transcatheter embolization may be only transiently successful, and repeated embolization or eventual open surgical therapy may be required to adequately treat certain patients. Endovascular stent graft exclusion of select

aneurysms avoids some of the limitations accompanying embolization alone but often results in occlusion of the stented artery (7) (3).

In our case, surgical treatment was not possible due to the high risk of intraoperative rupture of this aneurysm, so the decision was made to take the patient for embolization in our interventional radiology department at Hassan II University Hospital in Fez.

The procedure was uneventfulwith good clinical, biological and radiological development, a control abdominal CT scan showing the aneurysm stopped feeding and the beginning of its thrombosis, without hepatic perfusional sequelae.

CONCLUSION:

Hepatic artery **aneurysm** is a rare condition, often discovered accidently, a clinical suspicion should prompt confirmation with angiography.

Therapeutic management is difficult and not codified. However,transarterial embolization improves the prognosis of patients and is an excellent alternative to surgical treatment (5).

Key words :
Cholangitis-Aneurysm - proper hepatic artery -CT angiography-embolization.

Bibliographie

1. *Multiple Hepatic Artery Aneurysms: Use of Transcatheter Embolization for Rupture.* **Riesenman, Paul J., et al.** 2006, journal of vascular surgery, pp. 399-404.
2. *Rupture spontanée d'un anévrisme intra-hépatique: Traitement radiologique et chirurgical.* **Cotte, Eddy, et al.** 2006, sciencedirect, pp. 149-151.
3. *VISCERAL ARTERY ANEURYSMS.* **Ulka Sachdev-Ost.** 2010, MOUNT SINAI JOURNAL OF MEDICINE, pp. 296-303.
4. *Endovascular Treatment of Visceral Artery Aneurysms and Pseudoaneurysms in 100 Patients: Covered Stenting vs Transcatheter Embolization.* **Venturini, Massimo, et al.** 2017, journal of endovascular therapy, pp. 709-717.
5. *The endovascular management of visceral artery aneurysms and pseudoaneurysms.* **Tulsyan, Nirman, et al.** 2007, journal of vascular surgery, pp. 83-276.
6. *Long-term outcomes of coil packing for visceral aneurysms: correlation between packing density and incidence of coil compaction or recanalization.* **Yasumoto, Taku, et al.** 2013, vascular and interventional radiology, pp. 807-1798.
7. *Endovascular management of visceral artery pseudoaneurysms: transcatheter coil embolization using the isolation technique.* **Ikeda, Osamu, et al.** 2010, cardiovascular and internationl radiology, pp. 34-1128.
8. *Visceral artery aneurysms: review on indications and current treatment strategies.* **Sousa, Joel, Costa, Diogo et Mansilha, Armando.** 2019, international angiology, pp. 381-394.
9. *Right hepatic artery aneurysm.* **BERNAL, ASTRID DEL PILAR ARDILA, et al.** 2016, RJ Brazi, pp. 401-403.