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Acute hemobilia from a pseudoaneurysm of the cystic artery arising from the left hepatic artery: Case report and literature review



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ABSTRACT

INTRODUCTION: Hemobilia represents only 6% of all causes of upper gastrointestinal bleeding.

PRESENTATION OF CASE: We report a rare case of a bleeding pseudoaneurysm of the cystic artery, due to a re-activation of a chronic cholecystitis, which arose with a mixed symptomatology: jaundices and hematemesis.

DISCUSSION: The rarity of our patient is increased for some vascular anatomic variations detected by Computed Tomography that influenced the management of the disease.

Our patient was treated by endovascular embolization of the pseudoaneurysm and subsequent cholecystectomy.

CONCLUSION: About pseudoaneurysm of the cystic artery only few cases have been already reported and to date there are no guidelines for its management.

We describe both diagnostic features and therapeutic strategies in comparison to the most recent literature.

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1. Introduction

In surgical practice jaundice and hematemesis are two symptoms apparently with little in common. When they occur in the same patient diagnosis is challenging.

Hemobilia triggered by non-iatrogenic injuries of the cystic artery is an extreme rare but possible etiology and therefore it should be considered.

We report the case of a bleeding pseudoaneurysm of the cystic artery due to a re-activation of a chronic cholecystitis treated by endovascular embolization and subsequent cholecystectomy.

Management of pseudoaneurysm of the cystic artery is controversial for the lack of guidelines. We explain our experience in comparison to the most recent literature.

Our work is in line with the SCARE criteria [1] and the PROCESS criteria [2].

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2. Presentation of case

A 64-years-old male came to our attention with acute pain in right upper quadrant of abdomen and vomit. Clinical examination showed oral mucosa and conjunctiva jaundiced.

His laboratory data demonstrates mild anemia (Hemoglobin: 12 mg/dl), elevated transaminases (GPT: 277 U/l; GOT: 190 U/l) and obstructive jaundice (total bilirubin: 5,7 mg/dl; direct bilirubin: 4,7 mg/dl).

Ultrasound examination of the abdomen revealed several gallstones, each smaller than one centimeter, in the gallbladder.

Our diagnosis was *biliary colic* and the patient was hospitalized.

After one day in stable conditions, he had curiously an attack of haematemesis and melaena. His laboratory data showed a worsening anemia (Hemoglobin: 9,3 mg/dl) requiring an urgent blood transfusion.

He underwent a gastroscopy that surprisingly showed a normal appearance of both stomach and duodenum. Instead, at the exploration of the ampulla of Vater, it was recognized a secretion made up of bright red blood mixed with bile.

Therefore we diagnosed a *haemobilia*.

A Computed Tomography (CT) examination was performed and showed large gallstones [Fig. 1A]. After e.v. administration of the contrast medium a round hypervascular small mass, arising from the cystic artery, appeared inside the gallbladder: it consisted of

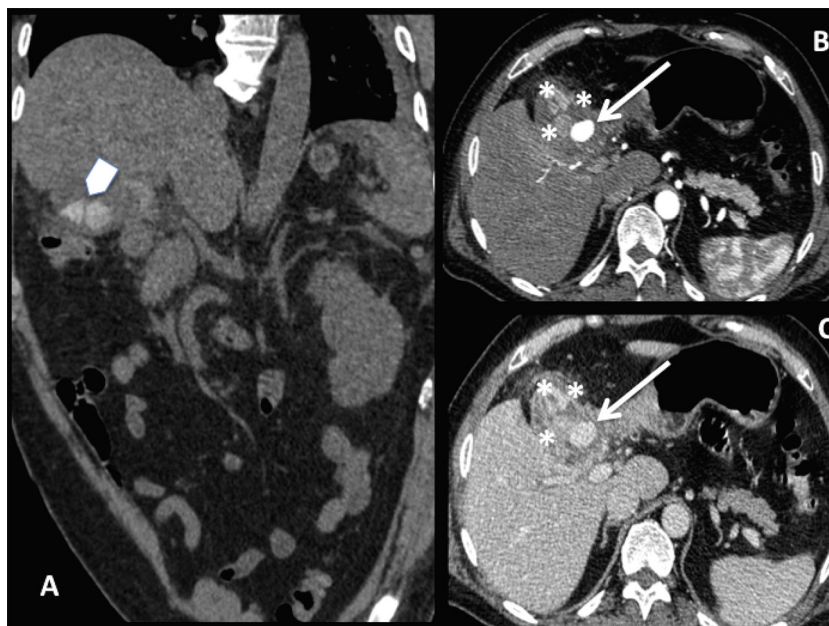


Fig. 1. CT examination: coronal pre-contrast image (A); axial arterial (B) and portal (C) phase images. Arrowhead in A shows some large gallstones. After administration of the contrast medium the pseudoaneurysm appeared inside the gallbladder as a round mass with the same density of the arteries (arrows in B e C). Thick and irregular cholecystic walls with inhomogeneous perivisceral fat (asterisks in B e C) suggested us the hypothesis of cholecystitis.

a *pseudoaneurysm* [Fig. 1B]. Hypothesis of cholecystitis was suggested by thick and irregular cholecystic walls and inhomogeneous perivisceral fat [Fig. 1C].

CT images showed also some anomalies of the splanchnic arterial district [Fig. 2] characterized by:

- the right hepatic artery (rHa) arising from the superior mesenteric artery (SMa);
- the left hepatic artery (lHa) arising from the common hepatic one, after the gastroduodenal artery;
- the cystic artery (CA) arising from the lHa.

We concluded that the pseudoaneurysm, probably caused by a re-activation of chronic cholecystitis, was responsible for the hemobilia.

To avoid the risk of a new hemorrhage, we performed immediately the percutaneous embolization of the pseudoaneurysm.

Thanks to the multiple vascular anatomic variations of our patients, we easily catheterized the CA through the lHa, rather than through the rHa arising from the SMA. Embolization was achieved positioning two micro-coils (VortX-18 Fibered Platinum Coil, Boston Scientific) at the origin of the pseudoaneurysm by a micro-catheter (Terumo Progreat microcatheter) [Fig. 3].

Then the patient was taken to the operating room for cholecystectomy. Laparoscopic approach was attempted but it was necessary conversion to laparotomy because strong adhesions hindered the mobilization of the gallbladder [Fig. 4].

No complication occurred in postoperative and the patient was discharged in sixth day.

3. Discussion

The term “hemobilia” refers to a bleeding into the biliary tree. It is traditionally characterized by the triad of symptoms: jaundice, abdominal pain and acute upper gastrointestinal bleeding (melena and hematemesis) [3].

Diagnosis is often challenging because manifestations may not be typical and can vary widely depending on site, entity and

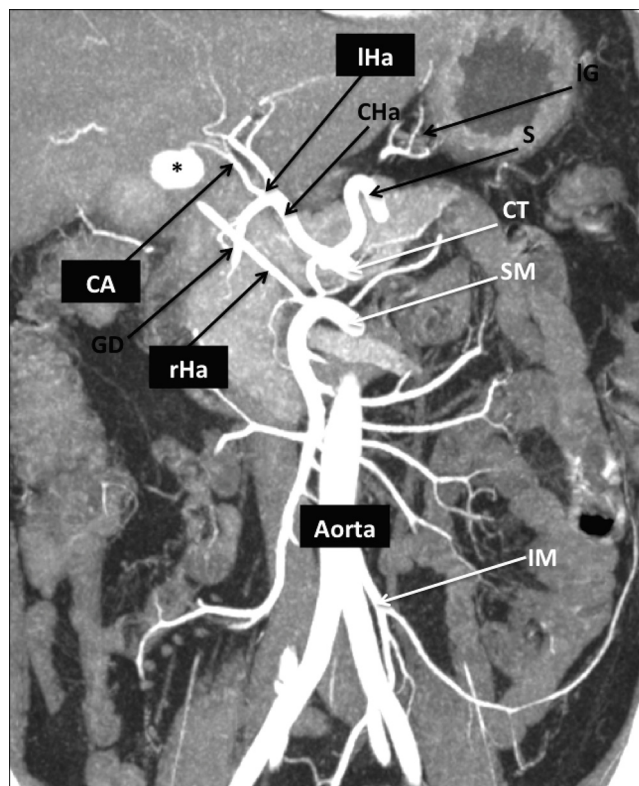


Fig. 2. This coronal MIP post-processed computed tomography image clearly summarizes the particular vascular anatomy of our patient.

Asterisk shows the pseudoaneurysm of the CA that origin from the lHa; the rHa independently arise from the SM.

CT = celiac trunk; SM = superior mesenteric; IM = inferior mesenteric; S = splenic; IG = left gastric; CHa = common hepatic artery; GD = gastroduodenal; rHa = right hepatic artery; lHa = left hepatic artery; CA = cystic artery.

duration of the bleeding: consequently there are *massive form*, characterized by hemorrhagic shock representing a medical emergency, and *mild form*, in which exiguous but prolonged bleedings can cause

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