CASE REPORT

Haemobilia due to iatrogenic portobiliary fistula after cholecystectomy

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SUMMARY

Haemobilia, defined as bleeding into the biliary tree is a rare condition. We describe a case report of a patient who presented it as a complication of iatrogenic portobiliary fistula, followed after an open cholecystectomy. The patient presented to the emergency department with late onset symptoms of haematemesis and melena a month after surgery. Findings were confirmed by Doppler ultrasound that showed the appearance of intragallbladder mass with high echogenicity representing a blood clot. Also, next to the portal vein and the biliary duct a lesion with mixed blood flow was detected confirming a portobiliary fistula. This case was successfully managed by angiography and selective embolisation.

BACKGROUND

The case highlights the importance of essential related suspicion of haemobilia in patients after cholecystectomy with gastrointestinal bleeding symptoms.¹ Even though, upper endoscopy is the initial procedure of choice for the evaluation of any acute upper gastrointestinal bleeding, accurate diagnosis by Doppler ultrasound could play and assist in the role to detect fistulas and other hidden lesions. Effective management by angiography and embolisation can be useful in the detection and treatment of this unique entity that should not go overlooked.

CASE PRESENTATION

A 31-year-old man was admitted to the emergency department with a history of active haematemesis and melena for last 2 days. He was referred from a regional hospital a month after an elective cholecystectomy for coledithiasis. Upper endoscopy was performed showing plenty of fresh blood coming out from bulb and descending duodenum, despite many efforts the bleeding site could not be identified. In emergencies a physical examination showed blood pressure: 100/60 mm Hg, heart rate: 104 bpm, with generalised jaundice tint, scar on right upper quadrant of previous cholecystectomy. Digital rectal examination showed positive for dark blood. Rest of physical examination was normal.

INVESTIGATIONS

Tests carried out in the emergency department were as follows: white cell count: $19\,270 \times 10^9/l$, Hgb: 7.51 g/dl, Hct: 21.68%, platelets and bleeding times were normal. Total bilirubin: 4.4 mg/dl, liver function tests: aspartate aminotransferase: 82 IU/l, alanine transaminase: 97 IU/l, γ -glutamyl

transferase: 850 IU/l, alkaline phosphatase: 1141 IU/l, total protein: 5.1 g/dl, albumin: 2.7 mg/dl. Other tests: cholesterol 116 mg/dl and glucose: 84 mg/dl.

Ultrasonography was carried out showing a significant dilation of the biliary tree (intrahepatic and extrahepatic), with evidence of a rounded hyperechogenic image, yielding no acoustic shadowing in the distal common bile duct. This supports the evidence of a potential clot due to the previous history of surgical removal of gallbladder (figure 1).

The largest diameter of the bile duct was of 8.25 mm where the clot was found, also the portal vein revealed an increased diameter of 10.6 mm. When applying colour Doppler signal, blood flow was detected in the medial segment of left liver lobe next to the portal vein, consistent with the findings of a portobiliary fistula. An abdominal CT scan was also performed without showing any other significant results (figure 2).

DIFFERENTIAL DIAGNOSIS

- Gastrointestinal bleeding
- Obstructive jaundice

TREATMENT

Seventy-two hours after confirming the results, the patient was referred to angiography and selective embolisation was performed, obliterating the fistula and as a result a complete stop of the gastrointestinal bleeding. The patient was discharged 2 days after the procedure without any recurrent symptoms.

Figure 1 Intragallbladder suggesting a blood clot.

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Figure 2 Mixed blood flow evidencing a portobiliary fistula.

OUTCOME AND FOLLOW-UP

The patient was re-evaluated 1 month after the procedure by Doppler ultrasound, without evidencing any signs of the existing fistula and haemobilia had resolved successfully.

DISCUSSION

It is believed that this type of gastrointestinal bleeding has been misinterpreted and led to improper treatment and even in some cases to catastrophic results.²⁻³ This pathology is currently diagnosed with more frequency, due to greater awareness of the condition and the improvement of the radiological diagnostic procedures.²⁻⁶

In developed countries the most common cause of haemobilia is blunt trauma of the liver,⁷ representing 55% of the cases, followed by cholecystitis in 28%, vascular malformations by 11% and tumours for only 6%. There is a growing trend in the first group conditioned by the increase in blunt trauma, more aggressive hepatobiliary surgery⁸⁻¹¹ and invasive radiological procedures such as percutaneous cholangiography.⁶ In this particular case we attribute the cause of the fistula to the previous cholecystectomy, 1 month before the onset of symptoms. Sandblom and colleagues¹²⁻¹³ have shown that there is a silent interval before the bleeding installs whose average is 2 weeks but can be as long as a year.

Classic symptoms consist of jaundice and colicky pain in the right upper quadrant, followed by gastrointestinal bleeding. The pain usually improves after blood loss. Jaundice varies depending on the degree of bile duct obstruction by clots.¹⁴ Sometimes, hepatomegaly can be seen or a right upper quadrant palpable mass.¹⁵

The crisis of pain and gastrointestinal bleeding might persist until aetiological therapy is instituted. The patient presented in this case revealed jaundice, epigastric pain, signs of anaemia and melaena, without clinical evidence of hepatomegaly. When gastrointestinal bleeding is associated with biliary pathologies haemobilia should be considered as a potential diagnosis.¹³ We have to consider that morbidity and mortality are proportional to restraint of bleeding.⁴

Haemobilia has been described as a rare complication of percutaneous liver biopsy, and exceptionally, after performing transjugular liver biopsy.⁷ In this case it was due to an unnoticed

iatrogenic portobiliary fistula after performing a cholecystectomy, which is unusual. In addition, complications may arise as cholecystitis, cholangitis and pancreatitis.¹⁰

Despite the advent of ultrasound and CT, the most accepted standard method that confirms clinical suspicion of haemobilia is selective hepatic arteriography, especially in central lesions of the liver, when even exploratory laparotomy is overlooked.⁸⁻⁹

In recent years, there has been introduced a vasoconstrictor infusion and a transcatheter embolisation therapy to treat definitely major gastrointestinal bleeding; haemobilia in some cases is accompanied by selective angiographic embolisation with Gelfoam and a sclerosing agent. This could be an effective diagnostic and therapeutic method to treat this condition completely, thus, avoiding complicated surgery.⁹⁻¹¹

Learning points

- ▶ Even though, haemobilia is an infrequent condition should always be ruled out as a potential iatrogenic cause after surgery, especially, in patients with gastrointestinal bleeding symptoms.
- ▶ Doppler ultrasound can be used as a routine method to identify hidden clots and fistulas in the biliary tree.
- ▶ Angiography is minimally invasive and allows localising and treating precisely upper gastrointestinal bleeding.

Competing interests None

Patient consent Obtained

Provenance and peer review Not commissioned; externally peer reviewed

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