Hemobilia due to liver abscess

A rare cause of massive upper gastrointestinal bleeding

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ABSTRACT

Massive hemobilia is a rare complication of liver abscess. A 48-year-old male patient, presented to the emergency department (ED) with a history of right upper quadrant abdominal pain, fever, and progressive yellowish discoloration of the sclera for 10 days. Twelve hours prior to presentation to the ED, he had a few episodes of hematemesis and melena. He had no history of obstructive jaundice or cholangitis. On physical examination, he was drowsy, pale, jaundiced, with blood pressure of 85/50 mm Hg, pulse rate of 120 beat/min, temperature of 38.5°C, and moderate tenderness in the right upper quadrant of the abdomen. Digital and proctoscopic examination revealed a large amount of fresh and clotted blood coming from above the level of the rectum. Immediate resuscitation in the ED was started with infusion of crystalloid fluids through 2 large bore intravenous cannulae. A nasogastric tube was inserted, which showed fresh and old blood, followed by gastric lavage. A Foley catheter was inserted with drainage of a minimal amount of concentrated urine. Laboratory values revealed a

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white blood cell count of $17.4 \times 10^9/L$ (normal range [NR]=4.3-10.8), hemoglobin 5g/dl (NR=14-18), aspartate aminotransferase 194U/l (NR=14-20), alanine aminotransferase 232U/l (NR=10-40), alkaline phosphatase 321U/l (NR=25-100), and total bilirubin 7.3mg/dl (NR=0.3-1.0) with a direct fraction of 5.6mg/dl (NR=0.1-0.3). Coagulation profiles were within normal limits. He received 4 units of packed red cells during resuscitation. Once stabilized, he underwent upper gastrointestinal endoscopy, which showed normal esophagus, stomach, and proximal duodenum, with fresh blood oozing from the ampulla of Vater. Endoscopic retrograde cholangiopancreatography (ERCP) showed fresh blood and clots coming from the orifice of the ampulla of Vater, and dilated biliary tree with multiple filling defects. All of these findings were compatible with a diagnosis of hemobilia. Abdominal sonography and CT were performed, which revealed multiple liver abscesses, the largest one in the right lobe. No gallstone or other pathology was noted (Figure 1). Selective angiography showed bleeding from a branch of the right hepatic artery into the biliary radicles. The bleeding was controlled by coil embolization (Figure 2). Aspiration and drainage of the large liver abscesses was achieved under ultrasound guidance. He was admitted to the intensive care unit (ICU) and was started on cefuroxime and metronidazole. The day after admission to the ICU, he developed high fever followed by progressive hemodynamic instability. There was no evidence of further bleeding, and the hemoglobin remained stable around 11g/dl. He died due to irreversible septic shock despite maximum intensive care support. Culture of the blood grew *Escherichia coli*, which was sensitive to cefuroxime, while the culture from the liver abscess was negative.

**Discussion.** Hemobilia occurs when a communication between the blood vessels and biliary radicles is induced by diseases, injury, or hepatobiliary interventions. Hemobilia can occur due to non-iatrogenic causes such as cholelithiasis, inflammatory diseases (acalculous cholecystitis and cholangitis), vascular disorders (aneurysms), and neoplasms. However, in most cases the underlying causes are trauma and iatrogenic due to invasive diagnostic and therapeutic procedures involving the hepatobiliary tract. Although liver abscess is a common surgical condition, its presentation with hemobilia and upper gastrointestinal bleeding is very rare. On English literature, only 7 reported cases of hemobilia due to liver abscess were found. The clinical presentation of patients with hemobilia varies and may be intermittent. Right upper quadrant colicky abdominal pain, obstructive jaundice, hematemesis and/or melena are the classical presentation of hemobilia. However, most patients do not manifest all these findings and a clinically silent hemobilia has been reported. Our patient presented with all these findings and hypovolemic shock. Although blood may clot anywhere along the biliary tract, hematemesi...
or melena may occur if the bleeding is massive or the blood does not clot. Clotting of blood within the biliary tract may cause obstructive jaundice. This patient was severely jaundiced with high liver function tests and multiple filling defects on ERCP, which were due to clots. All these improved dramatically after ERCP clearance of the biliary tract.

The availability of new imaging techniques has facilitated the diagnosis and evaluation of hemobilia. Ultrasound can assess the presence of echogenic, non-shadowing materials within dilated bile ducts. Upper gastrointestinal endoscopy and ERCP may also help in the diagnosis of hemobilia in some patients. However, angiography is the most useful tool for diagnosis and therapeutic intervention in hemobilia. After angiographic control of the bleeding, endoscopic biliary clearance, and drainage is recommended to decompress the biliary obstruction. Spontaneous cessation of hemobilia can occur, especially in mild forms; however, angiographic or surgical intervention is required with evidence of persistent bleeding. Angiography with transcatheter selective hepatic artery embolization, as a less invasive option compared with surgery, is the treatment of choice for hemobilia. Its effectiveness and safety have been proved, and it offers a long-term definitive and curative treatment. Operative intervention is obviously indicated as curative treatment of hemorrhagic cholecystitis; however, it is rarely required in other causes of hemobilia.

In conclusion, hemobilia should be included in the differential diagnosis as the source of upper gastrointestinal bleeding when the esophagogastroduodenoscopy is normal. Although hemobilia is a rare complication of liver abscess, all surgeons need to be aware of its clinical presentation, and of the available therapeutic options. Angiographic transcatheter arterial embolization is simple, safe, and effective technique for treatment of hemobilia.

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References


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