Hemobilia due to liver abscess

A rare cause of massive upper gastrointestinal bleeding

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ABSTRACT

إن تدمي الصفراء الغزير هو اختلاط نادر للخراجة الكبدية. حضر مريض ذكر عمره 48 سنة بتدمي صفراء غزير عائد لخراجة كبدية. كان يشكو من ألم في الربع العلوي الأيمن للبطن وحمى ويرقان منذ 10 أيام. تلا ذلك وقبل حضوره إلى الاسعاف قياء دموي وبراز مدمى. المنظار الهضمي العلوي الذي أجري له أظهر دماً طازجاً وخثرات آتية من فتحة حليمة فاتر. التصوير المقطعي أظهر خراجات كبدية متعددة. كانت الكبرى في الفص الأيمن. أظهر التصوير الوعائي الانتقائي نزيفاً من فرع من الشريان الكبدي الأيمن إلى القنوات الصفراوية. تمت السيطرة على النزف بصمات ملتفة. وأجري رشف وتصريف للخراجة الكبدية الكبيرة بدلالة الأشعة الصوتية. تمت مناقشة النماذج التشخيصية والتدبير للتدمي الصفراوي مع مراجعة للأدب الطبي. إن مؤشر عالي للحدس واستعمال الأدوات التشخيصية المناسبة يمكن أن يساعد في تشخيص ومعالجة هذه الحالة النادرة من أسباب النزف الهضمي العلوي.

Massive hemobilia is a rare complication of liver abscess. A 48-year-old male presented with massive hemobilia due to liver abscess. He had been complaining of right upper quadrant abdominal pain, fever, and jaundice for 10 days. This was followed by hematemesis and melena prior to emergency presentation. Upper gastrointestinal endoscopy showed fresh blood and clots coming from the orifice of the ampulla of Vater. The CT showed multiple liver abscesses, the largest one in the right lobe. Selective angiography revealed bleeding from a branch of the right hepatic artery into the biliary radicles. The bleeding was controlled by coil embolization. Drainage of the large liver abscesses was achieved under ultrasound guidance. Diagnostic modalities and management of hemobilia are discussed along with a review of the literature. A high index of suspicion, and the use of appropriate diagnostic tools can help diagnose and treat this rare cause of upper gastrointestinal bleeding.

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Hemobilia is defined as bleeding into the biliary system due to intra or extra-hepatic communication between the biliary radicles and blood vessels. It is an uncommon cause of upper gastrointestinal bleeding. In most cases, the underlying cause of hemobilia is iatrogenic due to biliary tract instrumentation.[1] Herein, a rare case of massive hemobilia due to liver abscess is presented in which the treatment was angiographic embolization of the bleeding vessel. A brief review of the literature pertaining to this condition is also presented. Our objective in presenting this particular case is to highlight the presentation and effective management of this rare complication of liver abscess.

Case Report. 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 x 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.

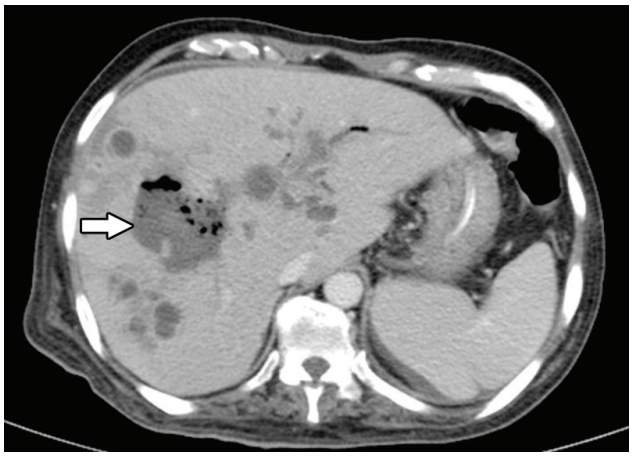

Figure 1 - Computed tomography of the abdomen showed multiple liver abscesses with the largest one in the right lobe.

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.[2] However, in most cases the underlying causes are trauma and iatrogenic due to invasive diagnostic and therapeutic procedures involving the hepatobiliary tract.[1] 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.[3-6] 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.[7] Our patient presented with all these 4 findings and hypovolemic shock. Although blood may clot anywhere along the biliary tract, hematemesis

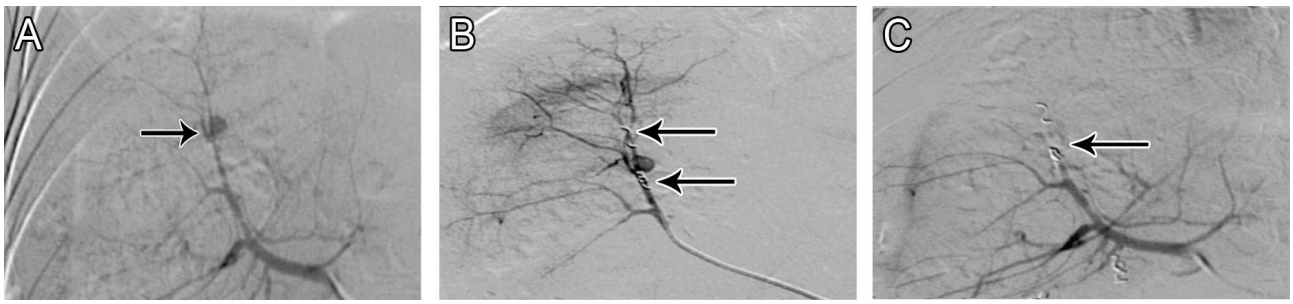

Figure 2 - Selective hepatic artery angiography showed: **A)** Bleeding from a branch of the right hepatic artery into the biliary radicles. **B) & C)** Control of bleeding after embolization.

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.[2] 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.[8] 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.[6] After angiographic control of the bleeding, endoscopic biliary clearance, and drainage is recommended to decompress the biliary obstruction.[2] 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.[9] Operative intervention is obviously indicated as curative treatment of hemorrhagic cholecystitis; however, it is rarely required in other causes of hemobilia.[10]

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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