

## Clinical Images

## Hemobilia with acute pancreatitis secondary to biliary tract infection

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Hemobilia is a rare medical condition with variety of etiologies. Among them, two in thirds are iatrogenic. Hemobilia combined with acute pancreatitis is unusual. Herein we reported a case of hemobilia with acute pancreatitis secondary to biliary tract infection.

A 76-year-old male patient had intermittent abdominal pain for 2 days, which was aggravated for 1 day. He was admitted to the Emergency Department on August 29, 2017. The patient developed paroxysmal abdominal pain after consuming greasy foods, accompanied by nausea. The physical examination revealed the following: temperature 37.0 °C, pulse 76 bpm, respiratory rate 19 per minute, blood pressure 164/77 mmHg; no jaundice; abdominal distention; and mild total abdominal tenderness, mainly located in the left upper abdomen. Murphy's sign was positive. Urgent abdominal ultrasound showed postprandial gallbladder emptying, gallbladder stones, unclear gallbladder cavity, and focal hepatic lesions. Hemangioma was suggested. The intrahepatic bile duct was mildly dilated, and the abdominal and pelvic cavity showed no obvious accumulation of fluid. The laboratory findings were as follows: serum amylase 922.1 U/L, white blood cell count  $18.2 \times 10^9/L$  (neutrophils, 83.4%), and hemoglobin 13.8 g/dL.

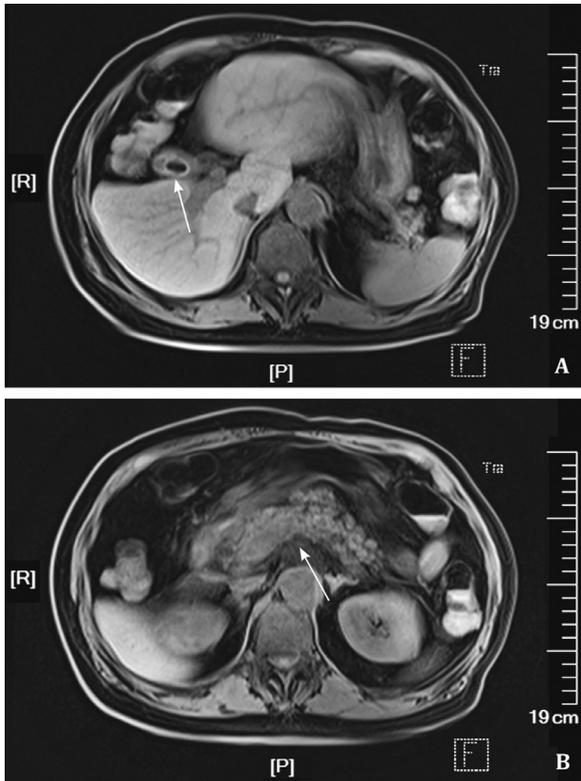
The admitting diagnosis was acute biliary pancreatitis and cholecystolithiasis. The treatment included the following: (1) nil per os; (2) omeprazole sodium injection for acid suppression; (3) somatostatin injection (3 mg); (4) antispasmodics; (5) anti-infection drugs including sulperazone, cefoperazone sodium, and sulbactam sodium injection; and (6) fluid resuscitation. The treatment was followed by remission. MRI and MRCP (August 31, 2017; Fig. 1) showed pancreatic and peripancreatic changes. Acute pancreatitis and gallstones were suggested. Some peritoneal effusion, bilateral pleural effusion, and choledochal dilatation were observed. Computed tomography (CT) showed bilateral pleural effusion, gallstones, pancreatitis, and hemangioma in the right lobe of the liver. The patient passed black stool (about 300 mL), and the fecal occult blood test was positive (day 6; September 4, 2017). Gastroscopy revealed chronic superficial gastritis (active phase) with erosion. Colonoscopy showed no obvious bleeding but a large number of blood clots in the colon.

The patient had melena repeatedly, and hemoglobin continued to decline. CT (day 18; September 16, 2017; Fig. 2) revealed high-density filling in the liver, which was considered gallbladder bleeding, accompanied by common bile duct hematoma. Digital subtraction angiography (DSA) (day 28; September 26, 2017; Fig. 3) showed that the cystic artery and the right and left hepatic arteries were normal, and no bleeding vessels were found. Also, neither contrast agent spillover nor concentrated contrast was noted. The patient was transferred to the Department of Hepatobiliary Surgery for surgical treatment. After active preoperative preparation, the abdominal cavity was probed on day 29 (September 27, 2017). Accumulation of blood (about 150 mL) right under the diaphragm and on the right side beside the colon, moderate adhesions on the cystohepatic triangle, and visible gallbladder enlargement after separation were observed. The right liver (S6) had a nodule (dark red color with a soft texture). Also, the gallbladder had chronic hemorrhage. The preoperative history and imaging examination and intraoperative diagnosis revealed suppurative cholecystitis, secondary liver abscess, and biliary tract bleeding. The surgical plan was to perform cholecystectomy, common bile duct incision, T-tube drainage, and partial liver resection (Fig. 4). The postoperative pathological examination showed chronic inflammation in the gallbladder accompanied by necrosis. After surgery, the patient received anti-infection drugs, hemostasis, liver protection, and nutritional support. The patient gradually recovered and was discharged from the hospital with the T-tube on October 7, 2017 (day 10 after the surgery). On November 27, 2017 (day 61 after the surgery), the outpatient review using T-tube imaging (Fig. 5) showed no obvious abnormalities in the bile duct. The T-tube was removed after the 2-month follow-up, and the patient recovered.

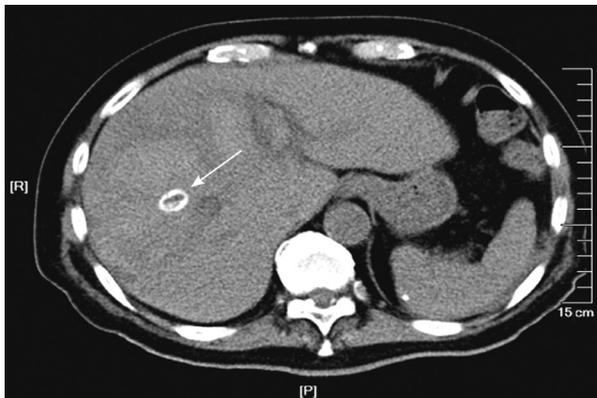
The main causes of upper gastrointestinal bleeding are peptic ulcer and gastroesophageal varices. Hemobilia is relatively rare and often manifests as epigastric pain, upper gastrointestinal bleeding, and jaundice (Quincke's triad) [1]. Clinically, hemobilia is categorized into surgical, infectious, iatrogenic, and biliary bleeding due to other causes [2–4]. Hemobilia caused by biliary tract infection may occur due to recurrent inflammatory stimulation, leading to the formation of liver abscess and bile duct fistula. The formation and dissolution of blood clots lead to recurrent episodes of biliary tract hemorrhage. The commonly used diagnostic methods are imaging examinations, including ultrasound, CT, MRCP, DSA, and

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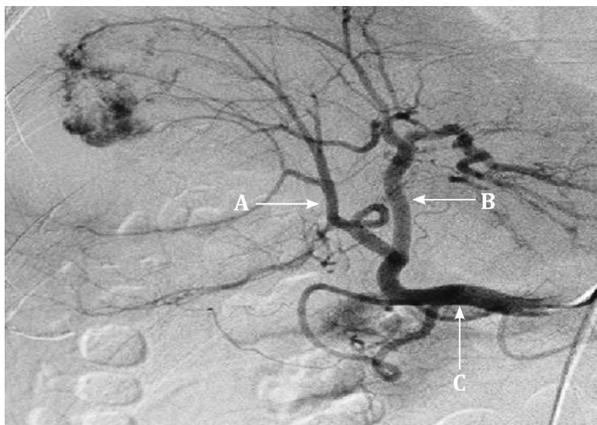
E-mail address: [hzhaomd@163.com](mailto:hzhaomd@163.com) (H. Zhao).



**Fig. 1.** MRI showed gallstone (A, arrow) and pancreatic and peripancreatic changes (B, arrow), suggesting acute pancreatitis.



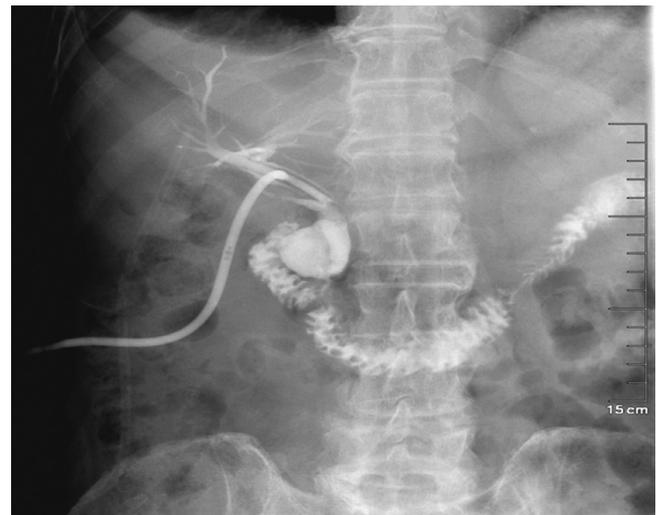
**Fig. 2.** CT showed high-density filling (arrow) in the liver, suggesting gallbladder bleeding.



**Fig. 3.** No bleeding vessels were found in DSA. (A) Right hepatic artery; (B) Left hepatic artery; (C) Hepatic artery.



**Fig. 4.** After cholecystectomy, the liver abscess in the fossa of the gallbladder was seen (arrow: liver abscess).



**Fig. 5.** T-tube imaging showed no obvious abnormalities in the bile duct.

endoscopy. The treatments include nonsurgical and surgical strategies. Conservative management may be pursued in clinically stable patients with a small amount of bleeding. If massive bleeding or a progressive decline in hemoglobin occurs, interventional treatment or surgery should be actively adopted. If DSA reveals bleeding vessels, embolization should be performed. If embolization fails, surgical exploration should be performed. The surgery should be based on the premise of ensuring safety for patients. Further, reasonable timing and mode of surgery should be chosen, such as liver lobe/segmental resection, to thoroughly cure primary lesions and biliary tract bleeding [5].

**Contributors**

ZH proposed the study. LDB wrote the first draft. All authors contributed to the design and interpretation of the study and to further drafts and approved the final version. ZH is the guarantor.

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### Ethical approval

This study was approved by the Ethics Committee of The First Affiliated Hospital of Soochow University. The consent for publication was obtained from the reported patient.

### Competing interest

No benefits in any form have been received or will be received from a commercial party related directly or indirectly to the subject of this article.

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