Deadly Air

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Introduction

A 57-year-old man presented with decreased consciousness, diffuse abdominal pain and anorexia for 1 week. He had an acute cholecystitis 6 months before and bleeding gastric ulcers 4 months before. The patient was icteric, tachycard (104 bpm), hypertensive (230/120 mmHg), had fever (38.1°C) and diffuse muscular abdominal défense.

Laboratory results revealed AST of 2666 IU/L (N < 38), ALT of 1479 IU/L (N < 50), alkaline phosphatase of 789 IU/L (N < 119), bilirubin of 14.2 mg/dl (N < 1.2) and LDH of 8520 IU/L (N < 480). Prothrombin time was 81 % (> 70%). The WBC count was 23,300/mm^3 (3,900-9,900) with 93% neutrophils and CRP of 197 mg/L (N < 5.0). Contrast-enhanced abdominal CT (CECT) scan was performed (Fig. 1).

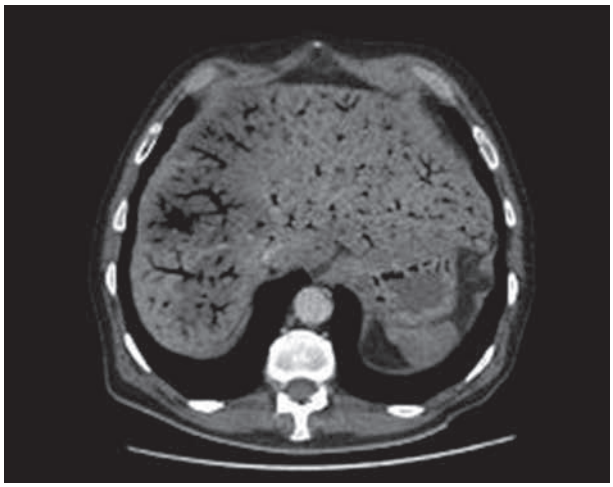

Fig. 1. — Contrast-enhanced abdominal CT images showing hepatic portal venous gas with possible massive hepatic necrosis.

Discussion

Six months before (October 2012), the patient developed a cholecystoduodenal fistula complicating an acute cholecystitis. Conservative treatment with antibiotics showed good clinical evolution.

Three months later (January 2013), melena occurred, caused by NSAID induced multiple gastric ulcers. Proton pump inhibitors were installed and the patient recovered well. Gastroscopy, 2 months later (March 2013) showed healed gastric ulcers and still the presence of the cholecystoduodenal fistula. On control CT scan, liver and abdomen seemed to be normal aside from the fistula.

Two weeks after follow-up endoscopy and 6 months after initial presentation, the patient had encephalopathy, jaundice and sepsis (abdominal pain, tachycardia, tachypnea, fever). Laboratory tests suggested hepatic failure and infection.

The CECT images revealed hepatic necrosis and massive portal venous gas (Fig. 1).

Portal venous gas should be distinguished from aerobilia. In portal venous gas, air is found more peripherally in the liver, extending within 2 cm of the liver capsule. Aerobilia tends to be more central around the portal hilum.

Portal venous gas is most commonly associated with mesenteric ischemia, inflammatory bowel disease, intra-abdominal infections and bowel lumen distention (e.g. paralytic ileus, mechanical obstruction, iatrogenic) (1,2), all leading to subsequent mucosal damage (3), predisposing to the translocation of gas-forming pathogens into the portal venous system.

Finally, the massive hepatic necrosis and portal vein air were induced by sepsis due to acute cholangitis following iatrogenic bowel lumen distention in a patient with cholecystoduodenal fistula and resulting in ischemic hepatitis. The patient died of septic shock and fulminant hepatic failure 3 hours later.

What is your diagnose ?

References

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