Massive Intraperitoneal Hemorrhage due to Rupture of Gallbladder; A Case Report

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Hemoperitoneum is a rare complication of acute cholecystitis. Early recognition and prompt intervention are the most crucial steps in the management of gall stone-induced complication. Presented here is a rare case report of a patient who developed a life-threatening hemoperitoneum due to erosion of the cystic artery by cholecystitis and cholelithiasis. Up to the knowledge of authors 45 similar cases have been reported between 1858 and 2000.

Key words: Acute cholecystitis, hemoperitoneum, perforation of gallbladder, gangrenous cholecystitis

Case report
A 38-year-old white woman was admitted at emergency department because of abdominal pain and vomiting on September 13, 1999. Her abdomen was non-distended and soft with moderate right upper quadrant tenderness and voluntary guarding. On admission the laboratory studies showed a hematocrite of 40% and hemoglobin of 13.3 g/dl. White blood cell count was 14.4x10³/mm³. Liver function tests were normal. Abdominal sonography revealed a distended gallbladder with an echogenic density due to a solitary large stone measuring 24mm (Figure 1).

In spite of adequate medical treatment after 24 hours, diffuse abdominal pain developed. The abdomen was markedly distended and diffusely tender. Her hemoglobin level dropped to 8.03g/dl and white blood cells raised to 19,000/mm³. Next ultrasonography of the abdomen showed some free fluid collection in the peripancreatic region (Figure 2). The sonographic diagnosis was acute cholecystitis with gallbladder perforation. Emergency laparotomy was performed using a subcostal incision.

Figure 1. Abdominal ultrasonography showing a solitary gallstone(A) within the gallbladder (B).

After exploring the peritoneum, a massive hemorrhage was encountered. The gallbladder was distended and perforated near its neck. The source of bleeding was erosion of the cystic artery caused by a necrotic zone of the gallbladder wall. About 2.5 liters of blood was aspirated from the abdomen. Classic cholecystectomy and

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abdominal irrigation were performed. She recovered uneventfully and was discharged on the sixth postoperative day.

Discussion
Perforation of the gallbladder occurs in 3% to 12% of cases of cholecystitis and is more prevalent in the elderly individuals and men. Immunosuppressed and diabetic patients are also more likely to develop perforation. Most perforations are subacute, causing a pericholecystic abscess. Acute free perforation with bile peritonitis and chronic perforation with an internal biliary fistula are rare. Gallbladder perforation may develop as early as 2 days after the onset to several weeks. The mortality of acute gallbladder perforation may be as high as 60%.1

The total nature of this complication is mainly due to a delay in diagnosis, which is often explained by the similarity in clinical presentation of uncomplicated forms of acute cholecystitis. The predisposing factors for gallbladder perforation include cholecystitis, infection, trauma, diabetes, malignancy, atherosclerosis and drugs.2 The mechanism for perforation is impaction of a calculus to a cystic duct, followed by gallbladder distension due to secretion into its lumen, which leads to vascular impairment, necrosis and perforation. Patients with emphysematous and gangrenous acute cholecystitis are probably at increased risk for perforation and thus at higher risk for developing major complications. Risk factors for gallbladder gangrene include male gender, age older than 50 years, history of cardiovascular disease and leukocytosis greater than 17,000 white blood cells/ml.3 Perforation of gallbladder wall is usually suspected from indirect nonspecific sonographic findings such as pericholecystic fluid collection, free peritoneal fluid, irregular gallbladder wall thickening, gallstones course introcholecystic echogenic debris and complex mass in the gallbladder fossa.1,5

Hemoperitoneum is a rare complication of acute cholecystitis that may arise either from a perforated hemorrhagic and necrotic gallbladder or from erosion of the cystic artery.4 A review of the literature confirmed that this condition is very rare complication of acute cholecystitis. Only 45 similar cases have been reported between 1858 to 2,000.1,4,5 We report a case who presented with a life-threatening hemoperitoneum due to erosion of the cystic artery by cholecystitis and cholecystitis. A case of hemoperitoneum in a patient taking warfarin sodium, originating in the wall of a perforated, inflamed gallbladder was reported.6 Early recognition and prompt intervention are the most crucial steps in the management of gallstone-induced complication.

Figure 2: Abdominal ultrasonography demonstrating distended gallbladder with blood clot (A) and free fluid collection (B).

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Reference