

In the name of God



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Emphysematous Cholecystitis after ERCP.

Mirsharifi R*, Pakaneh MA**, Aminian A*.

* Assistant Professor, ** Resident, Department of General Surgery, Imam Hospital Complex, Tehran University of Medical Sciences, Tehran, Iran.

Corresponding author: Dr. Ali Aminian, Department of General Surgery, Imam Hospital Complex, Tehran, Iran, Telefax: +98(21) 6693-7185, Email: aliaminian@doctor.com

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Abstract:

Emphysematous cholecystitis is an unusual but life-threatening form of acute cholecystitis caused by the presence of gas-forming bacteria in the gallbladder. Here we present a case of fulminant emphysematous cholecystitis developing after endoscopic retrograde cholangiopancreatogram (ERCP).

Key Words: ERCP, Emphysematous cholecystitis.

Case Report:

A 59-year-old diabetic lady was admitted because of right upper quadrant (RUQ) pain, fever, and jaundice since 4 days prior to admission. In physical examination she had low-grade fever, icter and RUQ tenderness. Initial laboratory studies showed a white blood cell (WBC) counts of 16200 cells/mm³ including 16% of band cells, total bilirubin of 13 mg/dl with direct component of 8 mg/dl, alkaline phosphatase of 591 units/liter, aspartate transaminase of 64 units/liter, alanine transaminase of 88 units/liter and normal amylase level. Emergency abdominal sonography revealed multiple gallstones with increased wall thickness of gallbladder. There was a suspicious stone in common bile duct (CBD). CBD diameter was 8.8 mm. Following initiation of medical management including antibiotic therapy, endoscopic sphinctero-

tomy (Fig. 1) was done with impression of acute cholangitis. There was sludge in CBD without stone. However, her general condition became worse during the next 36 hours. She developed drowsiness, high-grade fever and WBC count of 27000 cells/mm³. Patient was evaluated for possible common complications following ERCP including perforation, pancreatitis, and cholangitis. Plain abdominal film showed air in the right upper quadrant (Fig. 2). Computed tomography demonstrated air-fluid level in the lumen of gallbladder and gas within the gallbladder wall (Fig. 3). With diagnosis of emphysematous cholecystitis, emergency cholecystectomy was done. Klebsiella was isolated from bile culture. Post-operative course was complicated with sepsis and subsequent multiple organ failure. With aggressive supportive care in ICU, she was finally discharged after 2 months.

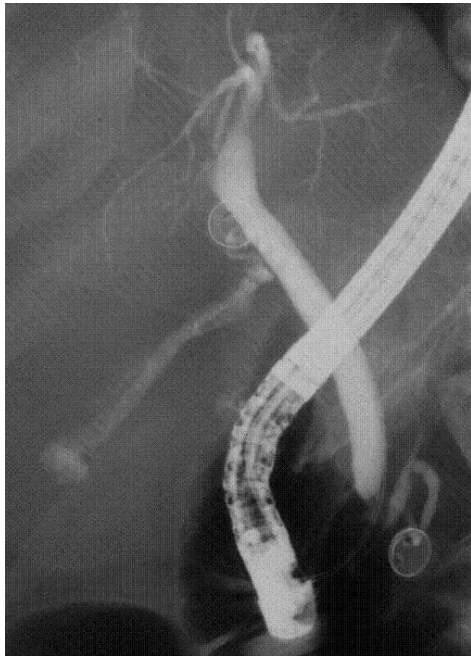


Figure 1. ERCP: no stone in CBD.



Figure 2. Plain abdominal film: air in the right upper quadrant.

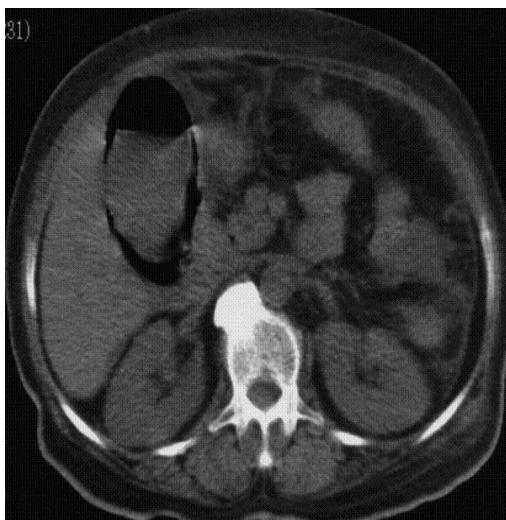


Figure 3. CT: air-fluid level in the lumen of gallbladder and gas within the gallbladder wall

Discussion:

Emphysematous cholecystitis is an uncommon but life-threatening form of acute cholecystitis caused by the presence of gas-forming organisms in the gallbladder, such as *Clostridia* species, *Escherichia coli*, *Klebsiella* species, and anaerobic *streptococci*. Emphysematous cholecystitis frequently affects elderly men, and it is usually associated with diabetes mellitus. The risk of gangrene and perforation of the gallbladder is relatively high for patients with emphysematous cholecystitis, and the mortality rate is 15%, as compared with 4% for acute cholecystitis. The etiology of emphysematous cholecystitis is controversial, but it is considered to be due to ischemia of the gallbladder from primary vascular compromise, with secondary proliferation of gas-producing bacteria ⁽¹⁾.

Since its introduction to clinical practice in 1968 by McCune et al ⁽²⁾, ERCP has revolutionized the diagnosis and treat-

ment of pancreatic and biliary diseases. This procedure nevertheless carries with it significant morbidity and mortality. The most common complications of ERCP are transient hyperamylasemia, pancreatitis, cholangitis and perforation ⁽³⁾. Emphysematous cholecystitis is actually very rare complication after ERCP; indeed, in the English literatures, only three case reports are mentioned about this complication ⁽⁴⁻⁶⁾. Two of these patients, like our patient, had diabetes mellitus. Two of them had undergone a failed attempt at stenting a malignant stricture of CBD. The diagnostic ERCP in the other patient was performed for evaluation of weight loss and elevations of the serum alkaline phosphatase and amylase. No obstruction was found.

The diagnosis of emphysematous cholecystitis based on the demonstration of varying amounts of gas in the gallbladder lumen and wall, and occasionally in the bile ducts or pericholecystic area, can be made from plain abdominal radiography, ultrasonography, or more accurately by computed tomography scan. Prompt diagnosis is essential, as early intervention can minimize the serious morbidity and mortality rates associated with emphysematous cholecystitis ⁽¹⁾.

Emergency cholecystectomy is needed in most cases due to the high incidence of complications, but percutaneous drainage of gallbladder is an alternative option for patients unfit for surgery ⁽⁷⁾. Based on clinical assessment, conservative surgical management is also possible in milder form of disease ^(1, 8).

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