

## A pathology requiring urgent cholecystectomy : emphysematous cholecystitis

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### To the Editor,

A 57-year-old male patient was admitted to the emergency service with right upper quadrant pain that started after dinner three days ago and getting worse in the last a few hours. There was no history of chronic disease. On physical examination, Murphy's sign was positive. Laboratory parameters except for leucocyte count (19450/mm<sup>3</sup>) and C-Reactive protein (4.8 mg/dL) were within normal limits. Abdominal ultrasonography (USG) showed cholelithiasis. Contrast enhanced computed tomography (CT) which was applied due to presence of Murphy's sign and leukocytosis revealed free air and gallstones in the gallbladder (Fig. 1). With a diagnosis of emphysematous cholecystitis (EC), urgent laparoscopic cholecystectomy was planned. Patient underwent cholecystectomy after conversion to open procedure due to advanced adhesions. In intraoperative examination, anatomy of cystic duct was unclear. Therefore, fundus of gallbladder was opened, purulent bile was drained and stones were extirpated to reveal anatomy of cystic duct (Fig. 2). Histopathological examination revealed gallbladder with fibrinopurulent exudate and hemorrhagic mucosa. Patient was discharged on post operative day 4 with healing. He had remained 5-months follow-up with no complication.

EC is a type of acute cholecystitis characterized by presence of gas on the gallbladder wall. The disease begins with acute cholecystitis, following by anaerobic bacterial infection caused by ischemia or gangrene of the gallbladder wall. It is a life-threatening condition and mortality rate is 1.4% (1) in uncomplicated cases while 25-50% in complicated cases (2). EC is more frequent in men comparing with in women (7:3), and 40% of patients have diabetes mellitus (DM) (3). EC occurs mostly in presence of ischemic pathologies and predisposing factors including DM, vasculitis and atherosclerosis. Previous abdominal surgery and trauma are also risk factors (4).

The most common symptoms are right upper quadrant pain, low grade fever, nausea and vomiting (2). Peritoneal irritation signs may be present and a mass in the right upper quadrant may be palpable in half of the patients. The symptoms vary depending on severity of the disease.

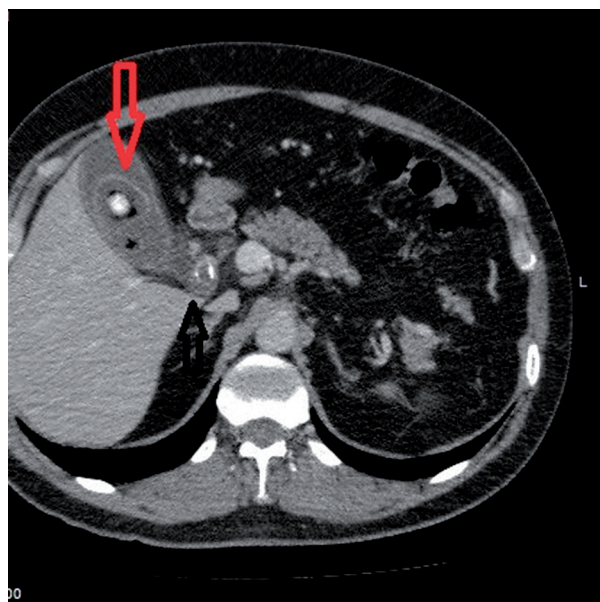


Fig. 1. — Axial tomography image. Black arrow: Impacted stone on the gallbladder neck. Red arrow: Gallbladder stones and free air.

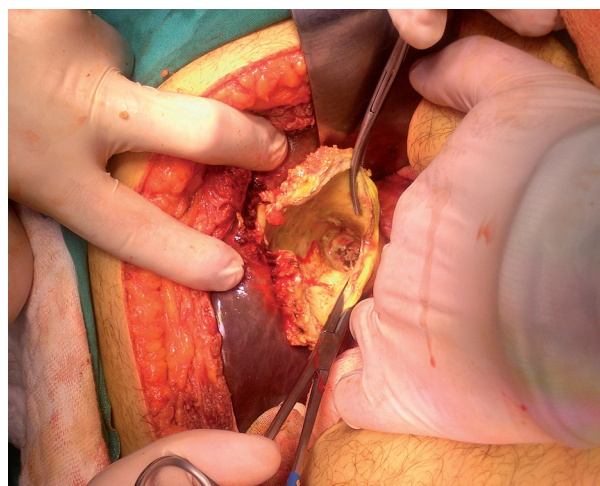


Fig. 2. — Gallbladder after purulent bile drainage from gallbladder. Wall thickening and wall ischemia is seen.

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Due to mimicking acute cholecystitis, liver abscesses and other acute pathologies in the right upper quadrant, diagnosis may delay. Clinically, various symptoms from non-specific pain to septic shock may be presented (3). In our patient, symptoms began three days before admission, probably as an acute cholecystitis, and got worse just hours before admission to emergency service. This condition may prove that EC developed after bacterial colonization in the acute cholecystitis.

Abdominal X-ray, USG and CT can be used for diagnosis. On abdominal X-ray, air fluid level in the gallbladder can be detected (4). USG is a technique depending on experience and knowledge of the radiologist and is less sensitive than other screening techniques in showing gallbladder air. CT is the most sensitive technic in showing air in the bile duct and biliary tract (1). In addition, CT can evaluate pericholecystic site and also can rule out other intra-abdominal pathologies. In the presented patient, USG was inadequate to diagnose and diagnosis was achieved by CT.

Laparoscopic cholecystectomy and antibiotic combination are recommended after diagnosis of EC as soon as possible (1). EC is a general surgical emergency and it can rapidly progress to an emphysematous gangrene in

the absence of treatment. Emphysematous gangrene may leads to septic shock and death (3).

EC is a rare variant of acute cholecystitis with higher morbidity and mortality. Prompt diagnosis and treatment are necessary. USG may be inadequate due to its dependence on the experience of the radiologist. For this reason, we believe that CT will decrease high mortality rate by providing early diagnosis in case of clinical suspicion.

#### Informed Consent

Written informed consent was obtained from patient who participated in this case.

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