

Acute gangrenous cholecystitis

Akut gangrenöz kolesistit

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Gönderilme tarihi: 18.11.2019

Kabul tarihi: 16.03.2020

Abstract

Acute gangrenous cholecystitis (AGC) is a rare cause of acute abdominal pain and defined as necrosis of the gallbladder wall because of ischemia. Clinical and laboratory findings of patients with AGC is usually nonspecific. To prevent peritonitis and sequelae, early diagnosis and surgical treatment should be performed. Herein, we aimed to demonstrate the clinical and imaging findings of AGC by presenting a 47-year-old male who attended the emergency department after upper gastrointestinal system endoscopy and diagnosed with AGC.

Key words: Cholecystitis, computed tomography, necrosis, diagnosis, gangrene.

Ufuk F, Aykota MR, Yılmaz S. Acute gangrenous cholecystitis. Pam Med J 2020;13:435-437.

Özet

Akut gangrenöz kolesistit (AGC), akut karın ağrısının nadir görülen bir nedenidir ve safra kesesi duvarının iskemisi nedeniyle nekrozu olarak tanımlanır. AGC'li hastaların klinik ve laboratuvar bulguları genellikle spesifik değildir. Peritonit ve sekel değişiklikleri önlemek için erken tanı ve cerrahi tedavi yapılmalıdır. Biz burada, üst gastrointestinal sistem endoskopisinden sonra acil servise başvuran ve AGC tanısı alan 47 yaşında bir erkek hasta sunarak AGC'nin klinik ve görüntüleme bulgularını vurgulamayı amaçladık.

Anahtar kelimeler: Kolesistit, bilgisayarlı tomografi, nekroz, tanı, gangren.

Ufuk F, Aykota MR, Yılmaz S. Akut gangrenöz kolesistit. Pam Tıp Derg 2020;13:435-437.

Introduction

Acute gangrenous cholecystitis (AGC) is a rare cause of acute abdominal pain and defined as necrosis of the gallbladder wall because of ischemia. AGC has high morbidity rates [1, 2]. Although the etiopathogenesis of acute gangrenous cholecystitis is not known, risk factors are male sex, increasing age, cardiovascular disease and diabetes mellitus [2]. Clinical and laboratory findings of patients with AGC is usually nonspecific, and it can be difficult to distinguish from acute cholecystitis. To prevent peritonitis and sequelae, early diagnosis and surgical treatment are necessary [3].

Case report

A 47-year-old male patient was admitted to the emergency department with the complaint of right upper quadrant pain and vomiting for

24-hours, which emerged a few hours after upper gastrointestinal endoscopy. Upper gastrointestinal endoscopy was reported as normal. His medical history included gastroesophageal reflux and hypertension. He had no previous surgery. Physical examination revealed tenderness in the right upper quadrant, and the abdomen was soft. Murphy's sign was negative. Laboratory investigations showed an elevated liver enzyme levels as follows: gamma-glutamyl transferase (GGT) (106 U/L, normal range 6–43 U/L), alanine transaminase (44 IU/L, normal range <33 IU/L), aspartate transaminase (53 IU/L, normal range <30 IU/L), C-reactive protein (CRP) (5 mg/dL, normal range <0.5 mg/dL) level and white blood cell count (16.5x10⁹/L, normal range 4–10x10⁹/L) were elevated. Other laboratory results were within normal limits. Abdominal ultrasonography (US) was obtained and showed peri-hepatic free fluid and gallbladder distension. Gallbladder lumen

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and wall thickness were found to be normal. For further evaluation, contrast-enhanced abdominal computed tomography (CT) was obtained. CT showed perihepatic free fluid, gallbladder distension, and pericholecystic fat-stranding. There was no contrast enhancement in the gallbladder wall (Figure 1). Based on the clinical and imaging findings, a diagnosis of gangrenous cholecystitis was suggested, and the patient underwent surgery. At laparotomy, the gallbladder was found to be distended, necrotic, and perforated with a small hole (Figure 2a, 2b). After surgery, wide spectrum antibiotherapy (piperacillin-tazobactam) was started. On the fourth day after surgery, the patient recovered clinically, and the laboratory results began to return to normal. Control abdominal US performed one-week after surgery, and it was normal.



Figure 1. Axial contrast-enhanced CT image shows gallbladder distension (*) and pericholecystic fat-stranding (dashed arrows). Also, there is no contrast enhancement in the bile duct wall (arrowheads).



Figure 2a. Intraoperative photograph of gangrenous cholecystitis.



Figure 2b. Post-operative photograph of the resected specimen demonstrates gallbladder with extensive areas of necrosis.

Discussion

Acute gangrenous cholecystitis (AGC) is a rare cause of acute abdominal pain and defined as necrosis of the gallbladder wall because of ischemia. Male gender, diabetes mellitus, older age, and cardiovascular diseases increase the risk of AGC. Compared with uncomplicated acute cholecystitis, AGC has high mortality and morbidity rates [1, 2]. Patients with AGC are usually present with clinically nonspecific abdominal pain, and it can be difficult to distinguish from acute cholecystitis. To prevent

peritonitis and sequelae, early diagnosis and surgical treatment are necessary [3].

Our case represents the clinical and CT imaging findings of a patient with AGC and perforation. AGC should be kept in mind in patients who presented with right upper quadrant pain when there is no evidence of cholecystitis (absence of gallbladder wall thickening or cholelithiasis) on the abdominal US. Doppler US and dynamic CT have been described as successful imaging methods for preoperative diagnosis of AGC [2, 3]. The disadvantage is that Doppler US is an operator-dependent tool and it may not be able to encode vascular flow in the gallbladder wall in healthy individuals [2]. Dynamic CT has the disadvantage of high radiation exposure. Chang et al. [1] showed that decreased gallbladder wall enhancement and luminal distention on single phase contrast-enhanced abdominal CT examination is highly specific for AGC, as in our case. Gallbladder distention, increased gallbladder wall thickness, and pericholecystic fat stranding are other imaging findings in patients with AGC [1, 3].

In conclusion, clinical and laboratory findings of patients with AGC are usually nonspecific, and contrast-enhanced abdominal CT examination is highly specific for the diagnosis of AGC. Therefore, CT examinations should be evaluated carefully.

Conflict of interest: No conflict of interest was declared by the authors.

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Informed Consent: Written informed consent was obtained from the patient who participated in this study.