
CASE REPORT

Gangrenous Cholecystitis – a case report

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SUMMARY

Gangrenous cholecystitis (GC) is a complicated variant of acute cholecystitis. It can present with varied signs and symptoms, from biliary colic to gallbladder perforation. A high index of suspicion is required to diagnose this condition in the high-risk group to avoid morbidity. Herein we report a case, a 33yrs old female Patient presented in emergency with pain abdomen which was colicky in nature and more on the right hypochondria radiating to back. It was moderate to severe in intensity didn't relived on taking oral analgesics. Open cholecystectomy showed gangrenous patches on the gallbladder wall, cholecystectomy was done and histopathology revealed gangrenous cholecystitis. So, in case of acute cholecystitis and in the presence of risk factors, gangrenous cholecystitis should be one of the differential diagnoses in order to avoid serious complications.

Keywords: Gangrenous cholecystitis, cholecystectomy

INTRODUCTION

Gangrenous cholecystitis (GC) represents a severe complicated variant of acute gallbladder disease with a high morbidity and significant risk for increased mortality; however, it has also been reported as silent finding during the course of elective cholecystectomy¹. There are various risk factors defined which increase the probability of GC. There are no specific criteria which make diagnosis of gangrenous cholecystitis easy, hence the purpose of presenting these case reports is to keep gangrenous cholecystitis (a complicated form of cholecystitis) in mind as one of the differential diagnoses, while dealing with cases of gallbladder perforation, acute cholecystitis or previous cholecystitis for elective cholecystectomy, with various risk factors involved.

CASE REPORT

A 33-year-old female, presented with history of one episode of pain in the right upper abdomen 10 days back. Her pulse rate was 90/min, his blood pressure 110/60mmHg. Liver function tests were raised alkaline phosphatase 718 U/L, AST 145U/L, ALT 154 U/L, gamma GT 535 U/L, the total leukocyte count was 163000/mm³. Ultrasonography showed a gallbladder containing multiple calculi with suspicious sludge or growth. The patient was managed symptomatically; elective laparoscopic cholecystectomy was planned. Intra-operatively, the entire fundus of the gallbladder was wrapped with omentum, Calot's triangle was frozen, the gallbladder wall was inflamed and friable (Fig.1). Laparoscopic cholecystectomy was converted to open

cholecystectomy. Gallbladder showed gangrenous patch (Fig.2,3). Postoperatively the patient was kept on intravenous antibiotics and analgesics. The histopathological report of the gallbladder showed gangrenous cholecystitis. The hospital stay was uneventful and the patient was discharged on the 7th postoperative day.

Fig. 1



Fig. 2



Fig. 3

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Patient's outcome: The patient's postoperative course was uneventful and she was discharged 7 days after surgery.

DISCUSSION

GC is the last stage of gall bladder inflammation⁴ and, in spite of its grave prognosis, its diagnosis can be elusive, both clinically and on laboratory investigation. The incidence of GC ranges from 2% to 29.6% in all patients with acute cholecystitis, in various surgical series, and generally occurs in older patients³. Many factors have been implicated in its formation. Fagan *et al*⁵ demonstrated that nine variables were associated with GC, but Contini *et al*⁴, showed that there is no single clinical or laboratory finding, apart from a high WCC, predictive of severe inflammation of the gallbladder.

Contini *et al*⁴ showed that the time of hospitalization delay plays a crucial role in the formation of GC. The time between the onset of symptoms and hospital admission was significantly longer in patients with GC. The patient's history (timely or delayed admission) and physician's attitude (general practitioner and/or surgeon) are likely to play a role in the progression towards a severe necrosis of the gallbladder wall⁴.

There are no specific criteria for definitive diagnosis of gangrenous cholecystitis. However, the following score has been proposed: The score comprises⁶:

Age>45 years	1 point
Male	2 points
Leucocytosis>13,000/mm ³	1.5 points
Ultrasonographic gallbladder wall thickness >4.5mm	1 point
Heart rate>90 beats/min	1 point

The prevalence of gangrenous cholecystitis was 13% in the low-probability (0-2 points), 33% in the

intermediate-probability (2-4.5 points), and 87% in the high probability category (>4.5 points)⁶.

Ultrasonography usually serves as the first-line imaging modality for the evaluation of patients with clinically suspected acute cholecystitis. However, CT can play an important role in evaluation of these patients if sonography is inconclusive³. The hallmark on sonography of GC is the presence of heterogeneous or striated thickening of the gallbladder wall, which is often irregular with projections into the lumen and pericholecystic fluid collections. The presence of intra-luminal membranes representing desquamative gallbladder mucosa is a specific finding but it is less common³. The accuracy of pre-operative ultrasound in diagnosing GC remains uncertain. Twenty-eight percent of patients with GC had ultrasound reports that failed to show any evidence of acute inflammation. This was mainly due to the absence of sonographic Murphy's sign and gallbladder walls of less than 3 mm, both important radiological signs of acute inflammation of the gallbladder⁶.

The CT findings most specific for acute GC are gas in the wall or lumen, intra-luminal membranes, an irregular wall and pericholecystic abscess. GC is associated with a lack of mural enhancement, pericholecystic fluid and a greater degree of gallbladder distension and wall thickening³.

There is a controversy regarding the best surgical approach to GC with some authors, such as Eldar *et al*¹ recommending open cholecystectomy for most men over 60 years of age who have significant co-morbidity, large bile stones and elevated bilirubin level. In contrast, Hunt and Chu¹ indicated that laparoscopic cholecystectomy can be used relatively safely and successfully in patients with gangrenous cholecystitis, reporting a success rate of 91% without increased morbidity and no mortality. Others suggested that a more reasonable approach would be an initial examination with the laparoscope, not wasting more than a few minutes to determine whether a dissection would be possible¹. In the hands of an experienced laparoscopic surgeon, an initial attempt at laparoscopic cholecystectomy is possible, converting to open procedure if necessary. A conversion rate higher than that for simple acute cholecystitis or symptomatic cholelithiasis is to be expected. However, when successful, laparoscopic cholecystectomy is associated with a significantly better outcome and a shorter hospital stay⁷ the conversion rates range from 8% to 75%³.

GC has a mortality rate of up to 22% and a complication rate of 16-25%. Complications associated with GC include perforation, which has been reported to occur in as many as 10% of cases of acute cholecystitis. Perforation of the gall bladder

can then lead to abscess formation or peritonitis. Hence, in contrast to acute cholecystitis, it is important both to diagnose and surgically treat GC prior to complication and/or perforation to avoid its high morbidity and mortality rate².

CONCLUSION

When dealing with patients with acute cholecystitis, a high index of suspicion is essential for the early diagnosis and treatment of GC. The possibility of a patient, especially an elderly patient with acute cholecystitis, progressing to GC should always be considered, even in an apparently improving patient and in spite of the absence of any firm clinical or laboratory findings. The radiological investigations may not be conclusive. There is a need for an early (if not urgent) surgical intervention in acute cholecystitis (whether laparoscopic or open surgery) in order to decrease the time elapsed from the start of symptoms to admission and treatment.

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