

CHOLELITHIASIS TO CATASTROPHE : A RARE CASE REPORT OF ACUTE GANGRENOUS CHOLECYSTITIS IN ELDERLY FEMALE PATIENT

Surgery

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ABSTRACT

Acute Gangrenous cholecystitis (GC) is a rare but serious complication of acute cholecystitis. Gangrenous cholecystitis is defined as necrosis and perforation of the gallbladder wall as a result of ischemia following progressive vascular insufficiency^{1,2}. We present a case of 60 year old female patient with acute gangrenous cholecystitis due to impacted stone at gall bladder neck presenting with complaint of right upper abdominal pain. Her diagnosis was made by Ultrasonography followed by contrast enhanced CT of whole abdomen. Patient was managed by Open Cholecystectomy.

KEYWORDS

INTRODUCTION

Gangrenous cholecystitis (GC) is a severe and potentially deadly progression of acute cholecystitis that occurs in up to 30% of cases^[3]. It occurs due to the gallbladder (GB) wall ischemia and necrosis secondary to GB inflammation and distention, with or without cystic artery thrombosis^[4]. Male gender, elevated white blood cell (WBC) count, age greater than 45 years, diabetes, and cardiovascular disease are risk factors for the development of GGB^[5]. Although clinical signs of peritonitis are sometimes absent, these patients typically present with at least one or more of the following symptoms: right upper quadrant abdominal pain, loss of appetite, jaundice, and/or fever. Once suspected, patients with GC generally undergo emergency cholecystectomy in order to avoid life-threatening complications.

Case Report

A 60 year old female presented to the OPD, Department of General Surgery, NMCH, Patna with right upper quadrant abdominal pain for past 1 month. She has no history of fever, vomiting or jaundice. On physical examination, our patient was afebrile and hemodynamically stable. Abdominal examination revealed soft abdomen with mild tenderness in right upper quadrant. Pre operative laboratory findings showed WBC- $11.6 \times 10^9/L$, Hb: 10.0 gm/dl, CRP: 47.7 mg/L, serum alkaline phosphatase: 195.9 IU/L, alanine aminotransferase: 37.8 IU/L, bilirubin: 0.4 mg/dl, blood glucose: 123mg/dl.

An ultrasonography of abdomen revealed distended gall bladder with irregularly thickened wall more pronounced in the fundus along with a calculus of size 26mm near the neck suspicious of gall bladder carcinoma with cholelithiasis. CT of abdomen showed overdistended GB showing large lamellated calculus impacted at the GB neck with moderate diffuse irregular GB wall thickening, mild intramural calcification at fundal region and stranding, features suggestive of cholelithiasis with Acute Gangrenous Cholecystitis (Fig. 1 & 2). To rule out carcinoma Tumor marker CA 19-9 was done which was <1.4 IU/ml.

Investigations

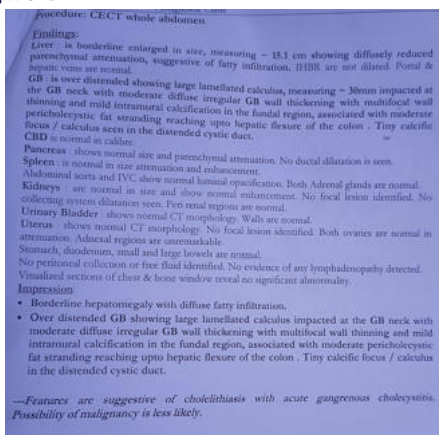


Fig. 1: CECT abdomen report suggestive of acute gangrenous cholecystitis



Fig. 2 : CT film showing enlarged Gall Bladder and calculus at the neck of the GB

Treatment

After all investigations, the patient was planned for laparoscopic cholecystectomy. During the procedure, dense pericholecystic adhesions with omentum and duodenum were found. These adhesions could not be negotiated laparoscopically, hence the decision for converting lap procedure to open method was taken on the table.

Abdomen was approached through right Kocher's incision. Pericholecystic omental adhesions were removed by blunt and sharp dissection. Duodenum adhered to Gall Bladder was dissected off meticulously by blunt dissection. A distended GB with fragile and patchy necrotic wall was found and a large calculus could be seen at its neck. Calot's triangle region could not be appreciated due to adhesions there. The distended GB was aspirated and about 20ml of purulent fluid aspirated and sent for pus culture sensitivity. GB was then dissected off liver bed by fundus first approach. Upon reaching the neck, GB was opened at fundus, a large calculus which was ovoid in shape and blackish in colour was extracted out. On milking at below the neck region, four more small size calculi, light brown in color came out of the opened GB. Cystic Artery was found to be thrombosed which was divided between the ligature. GB was excised out at neck region and stump was closed by vicryl 2-0 in running fashion. Abdomen was closed in layers after placing a ADK no. 28 in subhepatic space. Post operatively patient was given broad spectrum antibiotic including anaerobic coverage. Patient recovered well and was discharged in stable condition on 9th post operative day.

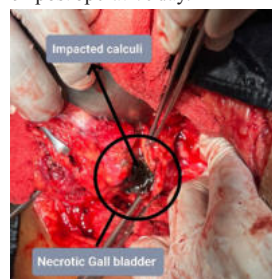


Fig. 3 : Identification of necrosed Gall Bladder with impacted calculi at the neck



Fig. 4: Large calculi extracted from the necrosed GB



Fig. 5: Aspirated Pus (around 20ml)

DISCUSSION

Gangrenous GB is a late complication of acute cholecystitis. It happens in the late stages of GB inflammation due to wall ischemia, necrosis, and perforation [7]. Distention of the GB leads to increased wall pressure and eventual necrosis of the GB wall, which can be associated with cystic artery thrombosis [8,9]. 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 patients.

Advanced age, cardiovascular disease, and diabetes have been identified as risk factors for GGB [2,6]. Furthermore, elevated WBC count, elevated C reactive protein, and male gender have been identified as other risk factors for developing GGB. Merrium et al. reported that WBC counts greater than $17,000/\text{mm}^3$ was a predictor for the development of GGB [10].

Although GGB can be a difficult diagnosis to make, CT with contrast has been found to have sensitivity up to 96% in the diagnosis of GGB with the highest specificity for gas in GB wall or lumen, intraluminal membranes, irregular or absent GB wall, and pericholecystic abscess [8]. The literature reports that between 8% and 75% of these patients require conversion of laparoscopic procedure to open cholecystectomy [8,10].

GGB has been associated with almost 22% mortality and a complication rate as high as 25%. Untreated GGB can lead to perforation, peritonitis, and abscess formation [11]. The clinical presentation of GGB can be varied and deceptive. It is imperative for clinicians to be cognizant of the clinical entity of GGB and the risk factors associated with its development.

There is a controversy regarding the best surgical approach to GC with some authors, such as Eldar et al. , 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 Chu [3] 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 possible [3]. 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. The conversion rates range from 8% to 75% [12].

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 rate [13].

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. 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. Failure to recognize physical findings and risk factors can lead to delayed diagnosis, which is associated with increased morbidity and mortality in patients with GGB. We hope that this case serves as a reminder or learning opportunity of the different GB disease processes and how the delay in the diagnosis in asymptomatic patients may lead to detrimental patient outcomes.

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