



ORIGINAL RESEARCH PAPER

General Surgery

A RARE CASE OF PNEUMOPERITONEUM WITHOUT VISCERAL PERFORATION IN A CASE OF EMPHYSEMATOUS CHOLECYSTITIS

KEY WORDS:
Pneumoperitoneum ,Emphysematous cholecystitis, Clostridium perfringens

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ABSTRACT

Pneumoperitoneum usually indicates perforation in gastro-intestinal tract and is considered a surgical emergency. However, there are cases of pneumoperitoneum without any evidence of intestinal perforation. We herein describe a case of 53 years/Male patient who presented to the emergency ward complaining of right hypochondriac and epigastric region pain and abdominal distension for 2-3 days. X-ray abdomen in a standing position demonstrated massive gas under the diaphragm (pneumoperitoneum). Hence, under the diagnosis of visceral perforation, we performed an emergency laparotomy. Beyond our expectations, there wasn't any perforation in the intestines but rather the pathology was present in the gallbladder. We diagnosed the patient with emphysematous cholecystitis and impending perforation & performed cholecystectomy. A pathological examination of the resected gallbladder showed necrosis in the mucosa and thinning of the GB wall. Cultures of the fluid were detected to be having Clostridium perfringens, a gas-producing microorganism.

INTRODUCTION

Emphysematous cholecystitis is a type of acute cholecystitis characterized by the presence of intramural and/or intraluminal gas that may develop into gangrene or perforation of the gallbladder. The morbidity and mortality rates of emphysematous cholecystitis are considerable.¹ The disease begins with acute cholecystitis followed by ischemia or gangrene of the gallbladder wall and an infection caused by gas-producing bacteria. Emphysematous cholecystitis is an uncommon variant of acute cholecystitis. Emphysematous cholecystitis occurring in association with a pneumoperitoneum is very rare. Modini et al² reported the 16th case of emphysematous cholecystitis with a pneumoperitoneum in the English-language literature in 2008. Thereafter, only one case was reported.² We herein report the 18th known case. What is of much note that, among these cases, the macroscopic perforation of the gallbladder was found in only eight patients.² This report presents a case of emphysematous cholecystitis causing a pneumoperitoneum with the finding of macroscopic perforation of the gallbladder.

CASE REPORT

53 years/M presented to the emergency ward with severe right upper abdominal pain, abdominal distension, and vomiting for 2-3 days. The patient also had a history of low-grade fever.

On examination, the patient was febrile and had tachycardia. Abdomen was distended and tenderness and guarding were present in RHC and epigastric region.

WBC was 18000/mcL and CRP was 20mg/dl, sodium: 132 mEq/L, potassium: 3.8 mEq/L, blood urea nitrogen: 88 mg/dL, creatinine: 3.5 mg/dL, alkaline phosphatase: 250 U/L lactic dehydrogenase: 375 U/L, aspartate aminotransferase: 32 U/L, alanine aminotransferase: 24 U/L, total bilirubin: 0.3 mg/dL, glucose: 207 mg/dL. Plain abdominal radiography showed the presence of gas under both the domes of the diaphragm. Hence, Under the diagnosis of perforation of the GI tract, an emergency laparotomy was performed. In the abdominal cavity, there were massive yellow-brown purulent ascites. Contrary to our expectations, no perforation was present in the alimentary tract, but rather we diagnosed the patient to have emphysematous cholecystitis and performed cholecystectomy. No gallstones were detected in the GB. Tazobactam/piperacillin was given pre- and post-operation. The patient's postoperative course was uneventful, and he was discharged healthy 15 days after undergoing surgery. Cultures of the ascites detected to be having Clostridium perfringens. An HPE of the resected gallbladder revealed

necrosis in the mucosa and thinning of the wall.

DISCUSSION

Emphysematous cholecystitis is a type of cholecystitis characterized by the presence of gas in the gallbladder wall. The disease begins with acute cholecystitis then followed by ischemia or gangrene of the gallbladder wall and infection caused by gas-producing bacteria. Whereas the mortality rate of uncomplicated acute cholecystitis is approximately 1.4%, that of acute emphysematous cholecystitis is 15%-20% due to the increased incidence of gallbladder wall gangrene as well as perforation.¹ Therefore, prompt diagnosis & treatment are essential. The most common symptoms are right upper quadrant pain, fever, nausea, and vomiting. Peritoneal signs may be present, and mass in the right upper quadrant can be palpated in as many as half of patients. CT scan is the most sensitive test for detecting emphysematous cholecystitis. The presence of gas within the gallbladder wall and lumen can be easily confirmed on CT scans. Emphysematous cholecystitis is more common in males than females (7:3), and 40% of affected patients have diabetes mellitus. In this case, there wasn't any history of diabetes mellitus. After the operation, his blood sugar decreased to a normal level, and his HbA1c was within normal range. The presence of a concomitant pneumoperitoneum, which may occur following emphysematous cholecystitis, is rarely found. Most patients with a pneumoperitoneum are in an unstable condition. Therefore, the first choice of treatment in such cases is emergency exploratory laparotomy and cholecystectomy, under a correct intraoperative diagnosis. Another treatment method involves initial percutaneous cholecystostomy with a strict intravenous antibiotics regimen then followed by subsequent cholecystectomy during a second stage.² In severely ill patients in particular, percutaneous cholecystostomy with broad-spectrum antibiotics can be an alternative choice of treatment.¹ In our case, we could not diagnose the patient with emphysematous cholecystitis preoperatively due to the huge amounts of gas in the abdominal cavity. Compared with other cases, the amount of gas in our case was very large, which suggesting not an acute stage, but a sub-acute stage and continuous infection with gas-producing bacteria. If the correct diagnosis could be done preoperatively laparoscopic surgery could be the alternative treatment.

CONCLUSION

Pneumoperitoneum can occur due to a rare entity named emphysematous cholecystitis. CECT scan can be done to confirm the diagnosis and such patients can be saved by performing an emergency laparoscopic cholecystectomy.

REFERENCES

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