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LAPAROSCOPIC CHOLECYSTECTOMY FOR EMPYEMA GALL BLADDER – A CASEREPORT

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ABSTRACT

Empyema of the gallbladder is a complication of cholecystitis that can develop into sepsis if not treated promptly. Signs and symptoms of gallstone disease are nausea/vomiting, right upper quadrant tenderness, and a history of gallstone disease. With persistence of the obstruction, inflammation and bacterial overgrowth within the gallbladder lumen and tissue, it may lead to eventual venous congestion, pressure necrosis and even empyema of the gallbladder. Clinicians should keep the abnormal presentations of gallbladder empyema in mind and prepare themselves for a presentation different from imaging during surgery. Several prognostic factors including gallbladder wall thickness, gender, white cell count, and diabetes mellitus have been associated with severe complicated cholecystitis and empyema of the gallbladder. Surgical intervention such as laparoscopic cholecystectomy has been shown to be necessary and a safe modality to manage patients with significant gallbladder pathology but should be performed as early as possible in the disease process. Intraoperative drainage of the gallbladder and possible subtotal cholecystectomy should be considered.

INTRODUCTION

Gallstone disease is a common health concern with an annual incidence of about 1–4% in the general population (Western countries and mainly in North India). Cholelithiasis (gallstone development) is influenced by a mixture of causes, including excess cholesterol saturation of bile, rapid nucleation of cholesterol monohydrate in bile, and bile stasis or delayed gallbladder emptying due to decreased gallbladder motility. Common in Fat, Fertile, Flatulent

Female of Forty. Gallstones alone are often asymptomatic but biliary colic can present as intermittent colicky pain when a stone temporarily obstructs the cystic duct. However, this obstruction may persist causing a complete closed-loop obstruction. Continued contraction of the gallbladder against this obstruction induces a local inflammatory response (cholecystitis) producing acute, often severe right upper quadrant (RUQ) pain. With persistence of the obstruction, inflammation and bacterial over-growth within the gallbladder lumen and tissue may lead to eventual venous congestion, pressure necrosis and even perforation of the gallbladder wall. Such pathologic evolution can also include accumulation of pus within the gallbladder and empyema formation. The obstructing stone(s) may also progress into the common bile duct leading to choledocholithiasis and potential development of ascending cholangitis or gallstone pancreatitis.

Gallbladder empyema may present with signs similar to acute cholecystitis. Patients can present with RUQ tenderness and positive Murphy's sign. As the infection progresses, there can be evidence of high fevers, chills, and sepsis. Empyema is often associated with several pathogenic organisms including Escherichia coli, Staphylococcus aureus, Clostridia, and Bacteroides. If not treated urgently, empyema and gallbladder rupture can induce peritonitis and/or bacteraemia leading to a rapid systemic inflammatory response and shock. Gallbladder empyema requires aggressive treatment with antibiotics, volume drainage and pressure reduction of the gallbladder lumen contents via urgent removal of the diseased organ. Herein, we are discussing a case of a patient with empyema gall bladder and was diagnosed with severe empyema of the gallbladder during laparoscopic surgery.

AIM

To showcase a case study of Laparoscopic Cholecystectomy in Empyema Gall Bladder.

OBJECTIVE

- Primary – To showcase the role of laparoscopic cholecystectomy in Empyema GB.
- Secondary – To study about various aspects of Empyema gall bladder.

METHODOLOGY – REVIEW OF LITERATURE

Cholecystitis- Inflammation of the Gall Bladder, a small digestive organ beneath the liver. Usualcause is impacted gallstone in the Hartmann's pouch, obstructing cystic duct.

CLASSIFICATION

1- Acute Calculous Cholecystitis, 2- Acute Acalculous cholecystitis, 3- Chronic Cholecystitis, 4- Empyema Gallbladder.

CASE REPORT

A 58-year male patient came to STRH OPD with

C/o- Pain in Right Upper Quadrant – for last 4-5 days (similar episodes in last year 2-3 times)

-Vomiting and Nausea – 2-3 episodes.No history of fever.

- **General examination –** Pulse – 100, Bp- 130/80, RR- 18SPO2- 99, T- 99

-K/C/O- Diabetes MellitusS/H/O- No any

- **Local Examination**. P/A- tenderness noted at RUQ.Murphy's Sign – Positive

Boas Sign – Absent

- **Investigations**

Hb- 13 g/dl

Wbc – 13000/cummPlt- 2.5lac

Lfts- WNL

-USG (A+P) – Over Distended gall bladder with GB Sludge.

-CT (A+P)- gall bladder is mildly over distended and shows thickened walls, Gb sludge and associated pericholecystic fat stranding. mild hepatomegaly with fatty infiltration.

-MRCP – Evidence of Acute Cholecystitis. GB lumen shows a cluster of small calculi within.

-The patient was started on Inj. Piptaz 4.5gms IV Tds preoperatively and was taken for laparoscopic cholecystectomy within 24hrs of his initial presentation.

-Laparoscopic Cholecystectomy was performed under General Anaesthesia.

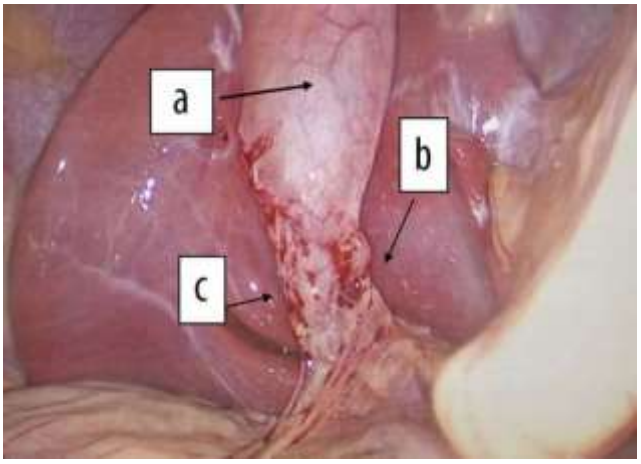
OBSERVATION AND RESULT

Difficult Laparoscopic Cholecystectomy was performed without converting it to Laparotomy. Intraoperative findings revealed a significant amount of inflammation in the gallbladder and the adjacent structures. The omentum had adhered to the gallbladder and required significant adhesiolysis. The gallbladder exhibited severe friability and necrotic tissue compared to commonly looking acute cholecystitis. To facilitate surgery, intraoperative aspiration and drainage of the gallbladder was undertaken revealing a large amount of frank pus consistent with empyema formation. Despite the significant progression of our patient's gallbladder

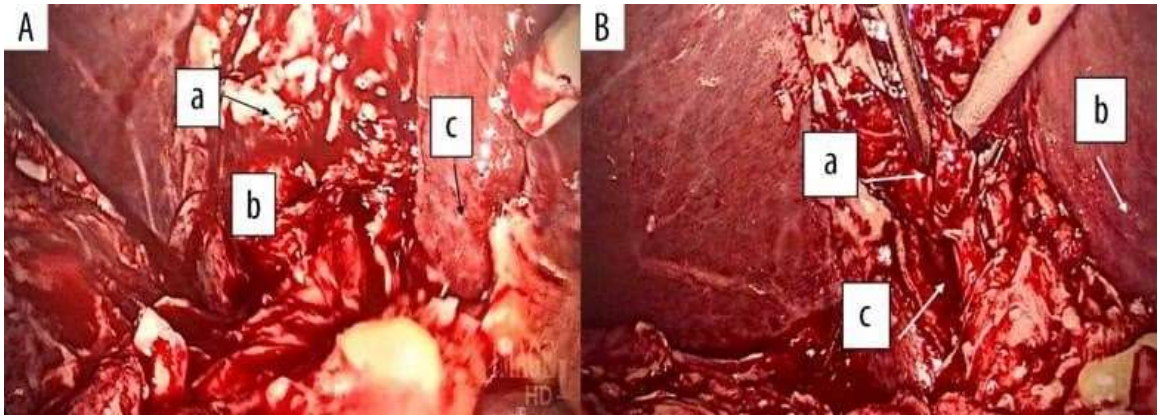
pathology, laparoscopic surgery allowed the critical view of safety to be obtained and total cholecystectomy was done.

By post-operative day 2, patient was asymptomatic with no reports of pain, hemodynamically stable, and afebrile (36.9°C). His repeat white blood cell count came normal.

The patient had an uncomplicated post-operative course and was discharged home in stable condition on post-operative day 3. On 2-week outpatient clinic follow-up, the patient reported feeling well and had no complications.



-Laparoscopic imaging of commonly appearing gallbladder acute cholecystitis. Gallbladder body (a), cysticartery (b), medial edge of liver (c).



A) Laparoscopic imaging of the gallbladder showing suppurative inflammation and unrecognizable views/anatomy of the gallbladder. Gallbladder infundibulum (a), medial edge of liver (b), cystic duct (c).

(B). Laparoscopic imaging of the gallbladder showing suppurative inflammation and unrecognizable views of the gallbladder. Pus (a), distorted gallbladder anatomy (b), medial edge of liver (c).

RESULT AND DISCUSSION

This is an uncommon case of severe empyema with frank pus secondary to calculous cholecystitis which developed rapidly despite an atypical presentation of afebrile on admission and mild abdominal pain. Not only did this patient not have signs of such a suppurative infection but imaging studies also showed mild changes to the gallbladder not proportional to the extent of damage.

The incidence of gallbladder empyema is difficult to assess, but the literature ranges from 5–15%. The typical symptoms and signs of cholecystitis such as significant abdominal pain, positive Murphy's sign and a history of previous episodes of biliary colic were present in this patient. Regardless, the presence of hallmark symptoms alone still makes it difficult to distinguish the severity of cholecystitis. Therefore, clinicians encountering individuals with none to mild fevers/chills should have a high index of suspicion for sepsis with origin in the gallbladder even when only mild pain is experienced. Albeit uncommon, the implications of missing such pathology could be catastrophic.

The imaging results in our patient were suggestive of a routine cholecystitis which was not representative of the operative findings of a severe cholecystitis with extensive pus/severe empyema and inflammation. US is the first choice in regard to imaging modality to diagnose the presence of gallstone disease but CT may be obtained in cases where US findings are not clear and complications are suspected.

Two key signs of cholecystitis on imaging is the presence of pericholecystic fluid and gallbladder wall thickening, with by far the most specific findings being presence of pericholecystic fluid. Wall thickening alone is a rather non-specific finding but may mimic pericholecystic fluid on CT imaging. Other findings such as intraluminal air seen on CT scan may be suggestive of disease progression and formation of an empyema.

Importantly, the symptoms and imaging findings may not accurately depict the severity of cases. In regard to gangrenous progression, differentiation of acute cholecystitis with necrosis from routine acute cholecystitis is difficult and often made at the surgical level. However, signs of irregular wall enhancement on contrast enhanced CT may be an indication of a necrotic gallbladder.

Given the context of our patient's presentation, past medical history, and his preliminary

diagnostic findings, empyema and gangrenous development of the gallbladder was not suspected prior to surgery. His previous history of bililary colic attack or gallstone disease can be used to understand his sudden development of symptoms and the subsequent rapid progression to gallbladder necrosis with empyema formation.

Acute cholecystitis is usually treated with surgical intervention via laparoscopic cholecystectomy to avoid progression to a gangrenous gallbladder or empyema. Performing the surgery early allows for shorter total hospital stay. Our patient underwent surgery less than 24 hours after admission and was discharged 3 days after laparoscopic surgery. Some laparoscopic techniques are not safe due to severe inflammatory changes and distorted anatomy. If a laparoscopic cholecystectomy is not technically feasible, a lesser operation is subtotal cholecystectomy.

To analyze the technique of laparoscopic modified subtotal cholecystectomy on mortality and morbidity of complicated cholecystitis. The technique starts with drainage at the level of the fundus toreduce the gallbladder volume. The gall-bladder is assessed for the critical view of safety.

If this is not obtainable then a subtotal cholecystectomy is considered or an open technique. This technique resulted in successful laparoscopic surgery in over 80% of complex gall-bladder disease including empyema. Other studies have shown that laparoscopic subtotal cholecystectomy is favourable to standard laparoscopy and open cholecystectomies. Our patient underwent standard laparoscopic cholecystectomy and did well post-operatively.

CONCLUSION

I present the case of a 58-year-old patient who presented with severe gallbladder pathology including severe empyema gallbladder discovered on laparoscopy. Patient had a successful operation with no residual complications.

Although this presentation is uncommon, surgeons should maintain a high index of suspicion for empyema of the gallbladder given the significant consequences of disease progression in the contextof systemic inflammatory symptoms. Physicians with low index of suspicion may not consider the patient as an emergency due to mild symptoms and can lead to severe, even fatal, consequences. Several prognostic factors such as gallbladder wall thickness, gender, and white cell count, and a comorbid condition of diabetes mellitus have been associated with

severe complicated cholecystitis and empyema of the gallbladder. Surgical intervention such as laparoscopic cholecystectomy has been shown to be necessary and a safe modality to manage patients with significant gallbladder pathology but should be performed as early as possible in the disease process. Intraoperative drainage of the gallbladder and possible subtotal cholecystectomy should be considered in such cases. So symptomatic Gall bladder diseases should be managed with early intervention.

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