

Gall Bladder Perforation in a Young Male of 17 years due to Cholelithiasis: A Case Report

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Abstract:

Gall bladder perforations are reported rarely. They tend to have a high mortality rate as they are not diagnosed in a timely manner. One of the reasons behind this is the fact that the clinical signs and symptoms are vague. Investigation and imaging are also the least helpful in such situations because of non-specific findings. Since it is an emergency, a prompt decision to open the abdomen can be life-saving. Due the rare occurrence, gall bladder perforations are skipped in the differential diagnosis. A few cases have been reported world-wide, but they usually involve aged men and women. We present here a case of a 17-year-old boy with post-operative diagnosis of gall bladder perforation without any evident underlying cause.

Index Terms: Gall Bladder, Spontaneous Perforation, Cholecystitis, Sonographic, Cholelithiasis.

Introduction:

In a study done retrospectively on 332 patients between 1997 to 2006 reported 16 cases of gall bladder perforation. ^[1] Niemeyer's classification be used to describe types of gall bladder perforation based on their gross pathological picture. Our case can be classified as type II perforation. ^[2] Gall bladder perforation is a life-threatening condition leading to acute peritonitis. ^[3] It can be caused by both calculous and acalculous cholecystitis. Typically, cholecystitis has a higher incidence in females, but gall bladder perforations are more common in males. ^[4] There is a lack of definite knowledge and resources concerning its diagnosis and treatment ^[5] Gall bladder perforation is uncommon and is mostly seen in immune compromised patients. ^[6] It is the need of the hour to come up with new knowledge to help is promptly diagnose and treat the condition. Here we present a case of gall bladder perforation a very young age of 17, something that is rarely seen in the world.

Case Presentation:

A 17-year-old male presented to us in emergency department with the complaints of fever for 6 days along with nausea and abdominal pain 3 days. The abdominal pain began in the


epigastrium and later became generalized. It was associated with nausea but no complaint of vomiting/burning micturition/urinary retention/bowel disturbance. His history was significant for an acute episode of hepatitis B two years ago which resolved on its own. On examination, his vitals were stable. His abdomen exhibited board like rigidity. His total leukocytes were slightly raised (14.7) along with aspartate aminotransferase and alanine aminotransferase (64 and 40IU/L respectively) and Lactate dehydrogenase 325 IU/L. His ultrasonography showed minimal ascites in hepatorenal pouch. His erect X-ray demonstrated a loop of dilated bowel.



(Figure 1)

A decision was made by the specialist on duty to perform exploratory laparotomy with the initial diagnosis of enteric perforation. A mid-line incision was used. The operative findings were minimal spillage of bile in sub-hepatic, paracolic gutters along with pelvic cavity. The gall bladder was acutely inflamed, non-distended and perforated at the neck. An emergency cholecystectomy was performed, and a drain was placed.

The patient was shifted to the ward where he remained vitally stable. His liver function tests and leukocyte counts came within normal range on 1st post-operative day. The drain was removed on the 3rd post-operative day due to lack of addition. The patient is stable now and doing well. He does not exhibit any clinical or biochemical evidence of autoimmune, infectious or haemolytic diseases. The specimen was sent for histopathology and the report stated that the patient suffered from acute on chronic cholecystitis with cholelithiasis. Histopathology showed mucosal hyperplasia, Rokitansky-Aschoff sinuses with lymphocytes infiltrating the wall.

 **KING EDWARD MEDICAL UNIVERSITY**
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Histopathology Section

<i>Patient Name</i>	Patient information confidential	<i>Date In</i>	Patient information confidential
<i>Age</i>		<i>Date Out</i>	
<i>Sex</i>		<i>Computer ID</i>	
<i>Mob No</i>		<i>Biopsy No</i>	
<i>Address</i>		<i>Ref. By</i>	

HISTOPATHOLOGY OPINION

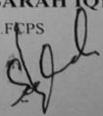
Specimen:
GALLBLADDER

Gross Features:
Specimen received fixed in formalin and consists of a gallbladder measuring 10x4x3 cm with multiple stones.
R/S TAKEN IN 2-B.

Microscopic Features:
Histological examination of this gallbladder shows mucosal hyperplasia. There are Rokitansky-Aschoff sinuses. The wall is fibrocollagenous, focally infiltrated by lymphocytes.
No Malignancy Seen.

Opinion/Comments:
GALLBLADDER :
- ACUTE ON CHRONIC CHOLECYSTITIS WITH CHOLELITHIASIS

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DR. ALIYA MUZAFFAR MBBS, M.Phil (Assistant Professor)	DR. MAHAM AKHLAQ MBBS., M.Phil, PhD (Assistant Professor)	DR.SARAH IQBAL CH MBBS.FCPS 

(Figure 2)

Discussion:

Derci and Dogan stated that in most of the cases presenting with a perforated gall bladder, the underlying cause is mostly considered to be acute calculous cholecystitis. [7] . According to Niemeier, gall bladder perforations can be of III types.[2] Type I shows acute free rupture into the peritoneal cavity. Type II has pericholecystic abscess while Type III shows chronic perforation. Our case came under type I classification.

In a review conducted over the course of 6 years by Felic et al, it was concluded that 40% of the subjects that presented with perforated gall bladder did not have a typical history of acute calculous cholecystitis.[3] Simmons TC found out that among patients with gall stones 10% show no symptoms. Among these patients, 2-11% suffer from gall bladder perforation.[4] The pathophysiology of perforation is shown to be ischemia of the gall bladder wall, as proven by histopathology.[8] A gall bladder perforation cannot be foreseen. It is necessary for clinicians to make a prompt and timely diagnosis based on clinical history and examination. The lack of typical features of a perforation are usually not seen on radiographic images in such instances. [10]

Few cases of gall bladder perforation that have been reported almost always involve old men and women presenting with peritonitis of unknown origin [9] But there was a report presented by Sharma R of perforations occurring as early as infancy, which was diagnosed only with the help of imaging. [11] This case report and the one we have presented clearly indicate that gall bladder perforation is a diagnosis that must be kept in the differentials of acute peritonitis, despite the patient's age.

It is not easily possible for surgeons to diagnose a perforation in a gall bladder before surgical intervention is made[12] In our case the pre-operative diagnosis was enteric perforation and in another similar study acute appendicitis was the working diagnosis before exploratory laparotomy[6] Failure to diagnose this condition within the required time frame leads to a higher morbidity and mortality.[3] The mortality for perforated gall bladder cases is between 19-24%.[13] So we must be aware of the symptomatology and other relevant information. The symptoms in most of the reported cases as well as are vague and non-specific. Most of the patients share the common complaint of a week old abdominal pain along with nausea as did our patient. [14] A study conducted by Kim PN also indicated the presence of fever in 56% cases and a high leukocyte count in 59% of them. [15] Sonographic hole sign is a reliable finding that confirms the diagnosis of a perforation in gall bladder but it is not visualized in all cases as shown by a study. Kim et al results stated that none of their subjects gave a positive sign on sonography. Computed topography does provide more definite findings [10] The outcome in a case like this can be positive as in our case and a similar study if a timely decision is made. Keeping a perforated gall bladder in the differential while handling such a case and a timely decision to perform a surgical intervention can help us combat the high death rate.

Conclusion:

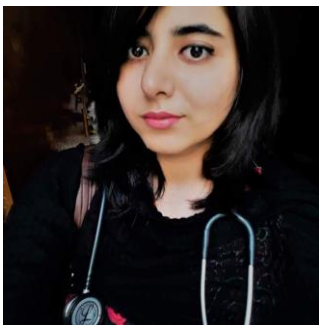
A very few cases of gall bladder perforations have been reported internationally, most of them concerning men and women over the age of 50. We have reported a case of a 17-year-old young man presenting to us with gall bladder perforation. This condition can be life threatening if not diagnosed and treated with cholecystectomy within a reasonable time frame. So, it is the need of the hour to perform further research to help diagnose the disease timely. And to keep this condition in the lift of differentials of acute abdomen.

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