

# Isolated Gall Bladder Laceration in Left Sided Blunt Trauma Chest

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## ABSTRACT

Gall Bladder rupture following blunt trauma is a rare event which even if occur, is usually associated with other visceral organ injuries. Isolated gall bladder rupture is even rarer as

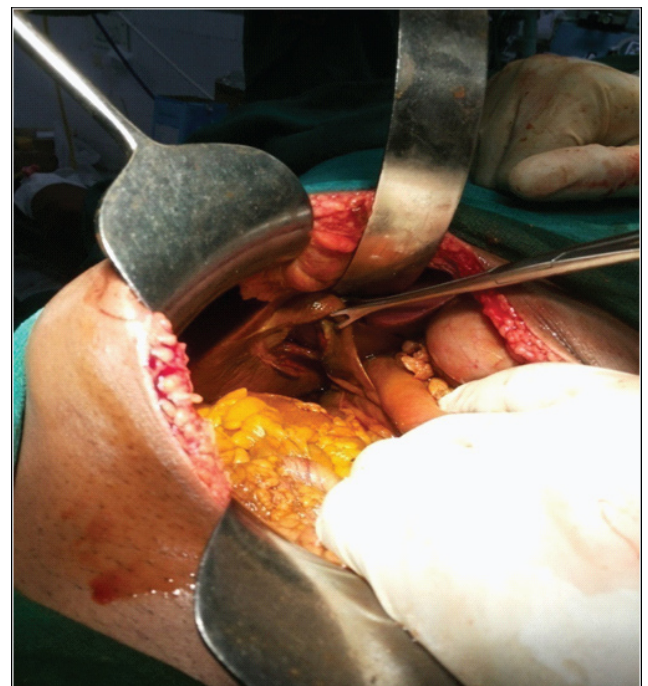
it is a well protected organ. Diagnosis is very difficult due to delayed presentation of clinical features of peritonitis. Here we are presenting a case report of a male patient with isolated gall bladder laceration due to blunt trauma left sided chest.

**Keywords:** Chest injury, Cholecystectomy, Rupture, Shearing force

## CASE REPORT

A 50 year old male patient was admitted with chief complaint of chest pain on left side and mild abdominal pain. He had an alleged history of fall from motorcycle 6 days back and complaint of chest pain for which he was admitted in Government District Hospital from where he was referred in our Hospital.

On examination patient was conscious, cooperative well oriented to time, place and person. He was afebrile, vitally stable with pulse 84/min, blood pressure of 120/80 mmHg and respiratory rate 20/min. Tenderness was present in left chest mainly on lower side. Surgical emphysema was present on left side of chest extending upto the neck and upper abdomen on left side and upto the neck on right side. Air entry was decreased on the left side with SpO<sub>2</sub> 94% without O<sub>2</sub>. Alteration of voice was present. Abdomen was soft with tenderness present only on deep palpation. Bowel sounds were present. Patient is a chronic alcoholic. Chest X-ray was done which showed multiple rib fracture of 7<sup>th</sup> to 9<sup>th</sup> ribs on left side. U.S.G was suggestive of moderate hemoperitoneum along with left sided hemothorax. Investigations were performed which revealed haemoglobin to be 7.5 gm/dl, urea 182.0 mg% and creatinine 4.5 mg%, other investigations were normal. CECT could not be performed due to high urea and creatinine levels. I.C.D was put on left side and 150 cc blood mixed fluid came out. A 4 quadrant paracentesis was done which showed frank bile. Contents of the Ryle's tube were gastric. Abdominal drain was put and around 1000 cc frank bile came out. Patient was resuscitated by giving i.v fluids and two unit of whole blood and next day Laparotomy was performed by a midline incision. On opening around 500 cc



**[Table/Fig-1]:** Tear in gall bladder with heavily stained viscera

of frank bile was suctioned out. Gut and other visceral organs were normal but heavily stained with bile. No liver or splenic injury was present. On exploration, undersurface of gall bladder was found lacerated longitudinally of about 6 cm [Table/Fig-1]. So emergency cholecystectomy [Table/Fig-2] was done and all other viscera were re explored which were normal. Before closing two abdominal drains, one in Morrison's pouch and one in pelvis were put. Postoperative recovery was uneventful and patient was discharged after two weeks.



**[Table/Fig-2]:** Specimen of lacerated gall bladder

## DISCUSSION

Gall bladder injury following blunt trauma abdomen is a rare event accounting for approximately 2% of the cases, which is usually associated with other visceral injuries, liver being the most common [1]. Isolated gall bladder injuries are even rarer. Review of English literature showed 51 such cases since 1990 ranging from 3 to 73 years [1]. Reason for such rare incidence is the well protected gall bladder as it lies in the liver bed and is covered by the rib cage [2]. Blunt trauma abdomen accounting for gall bladder injuries whether isolated or associated with other visceral injuries is most commonly due to road traffic accident by motorcycle [3]. Very few cases have been reported in which there is isolated gall bladder rupture associated with chest wall trauma with no abdominal findings. In this case also the patient had met accident from motorcycle and is having chest wall trauma on left side with fracture of 7<sup>th</sup> to 9<sup>th</sup> rib with surgical emphysema with minimal abdominal findings.

Gall bladder injuries can be classified into contusion, laceration and avulsion [4]. From these three, laceration is most commonly reported. Gall Bladder injuries mainly occur in a distended gall bladder in which the wall of gall bladder becomes thinned out. This occurs mainly in a fasting state or on alcohol intake. High serum level of alcohol also elevates the common bile duct pressure by increasing the sphincter of oddi's tone [1]. All this causes distension of gall bladder making it prone to injuries. In this case patient is a chronic alcoholic and alcohol causing distension of gall bladder might be the cause of rupture.

Injury to gall bladder can occur due to direct blow or due to shearing force [5]. In this case, shearing force might be the cause. Patient had left sided chest trauma evident by fracture of left 7<sup>th</sup> to 9<sup>th</sup> ribs which might cause generation

of the shearing force by visceral organs over the gall bladder causing injury. Clinical features following injury in the initial stage are very few and mild in nature. These initial symptoms may regress completely and may result in what is called as 'Period of Illusion' a stage in which there is complete absence of symptoms and patient may improve to an extent that may warrant discharge from hospital. This period may vary from hours to days to even weeks before patient again comes to hospital with abdominal discomfort and ascites and other severe signs of peritonitis. This is because ruptured gall bladder is mostly a normal gall bladder as diseased gall bladder have thick wall which provide resistance to rupture. Therefore bile leaked out from normal gall bladder in peritoneal cavity is sterile which only causes chemical peritonitis, signs and symptoms of which are innocuous [6]. Its only when bacterial peritonitis sets in, patient complains of abdominal distension, pain, nausea and vomiting, jaundice and ascites along with signs of bacterial peritonitis. In this case also, patient was referred to us for chest wall trauma and increased surgical emphysema along with altered voice for which we put in I.C.D but there is no mention of abdominal discomfort in it. This is because peritonitis had not set in till that time.

Diagnosis of the rupture of gall bladder is often missed due to vague sign and symptoms. Ultrasonography(U.S.G) can be effective as it can identify heterogeneous hyper echoic blood within gall bladder or outside it as pericholecystic fluid. But it cannot diagnose it in all the cases as in this case in which USG only showed moderate hemoperitoneum. CECT is diagnosis of choice [7]. but it cannot be done in this case due to high urea and creatinine levels. CECT also cannot diagnose all the cases. Diagnostic peritoneal lavage can give some idea only when sterile bile is sucked out which was positive in this case also.

Despite all these investigations most of the gall bladder traumas are detected on operation table only. Though many approaches like cholecystorrhaphy and cholecystostomy are performed previously [8]. Cholecystectomy is considered the standard treatment of choice. Laparoscopic cholecystectomy can be done but if in doubt about other organs laparotomy followed by cholecystectomy is preferred.

## CONCLUSION

Gall bladder injury is a very rare event following any blunt trauma. Isolated gall bladder injury is even rarer with very few cases reported till now. This case is very unique as there is only left sided chest trauma with no trauma to abdomen and still there is gall bladder laceration. So, one should suspect gall bladder injury even in chest wall injury even when there is no abdominal symptoms as gall bladder perforation can have delayed presentation.

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### FINANCIAL OR OTHER COMPETING INTERESTS:

None.

Date of Publishing: Oct 01, 2015