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CASE REPORT
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Gall bladder perforation after squeeze injury: A Case Report.

Jamil Ahmad[1], Muhammad Fawad[2], Muhammad Khizar Hayat[3]

1. MBBS, FCPS, FRCS
Consultant General & Laparoscopic Surgeon
Rehman Medical Institute,
Peshawar, Pakistan.
2. MBBS, FCPS
Senior Registrar General Surgery
Rehman Medical Institute,
Peshawar, Pakistan.
3. MBBS
House Officer General Surgery
Rehman Medical Institute,
Peshawar, Pakistan.

Correspondence Address:
Dr. Muhammad Khizar Hayat
Department of General Surgery
Rehman Medical Institute, Peshawar, Pakistan.
khizar09@gmail.com

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ABSTRACT… Isolated perforation of gallbladder following trauma is very rare and is mainly caused due to distended gallbladder as a result of fasting or alcohol ingestion in normal patients. We report a case of gall bladder perforation caused due to squeeze injury.

Key words: Abdominal Injury, Gallbladder Diseases, Thoracic Injury.

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INTRODUCTION

The gallbladder is an organ guarded by the organs around it, the liver, omentum and ribs.[1-2] Hence injuries to the gallbladder and most commonly associated with injuries to other organs surrounding it and only rarely occurs (around 2%) in the gallbladder.[3-4] Isolated perforation of gallbladder following trauma is very rare and is mainly caused due to distended gallbladder as a result of fasting or alcohol ingestion in normal patients.[5] Computed Tomography (CT) is the best diagnostic tool available while cholecystectomy, laparoscopic or open, is the treatment of choice.[6] We report a case of gallbladder perforation occurring due to squeezing from the back which to our knowledge is the first of such a report.

CASE REPORT

A 30 years old male was squeezed from the back by his friend. Initially the patient had no symptoms but over the course of a week he started to develop chest pain, fever and complained about loss of appetite. He visited multiple doctors who would label this as muscular pain and discharge him on medication for muscle spasm. The subsequent week, he started to develop pain in the right upper quadrant along with the chest pain. The abdominal pain was gradual in onset, non-radiating, aggravated by deep breaths and relieved by analgesics. No nausea or vomiting was associated with the pain. The fever which was initially low grade started to present with rigors and chills. His past surgical history was insignificant; however, his past medical history was significant for renal colic which he had treated with Extracorporeal Shockwave Lithotripsy. He presented via OPD on February 26, 2020 with the above complaints.

On physical examination, the patient was tender in the right upper quadrant with and had multiple purpuric rashes over the abdomen.

Baseline investigations along with CT-Abdomen with contrast was advised and the patient was admitted. Complete blood counts revealed a white blood count of 16,390/μL and a hemoglobin level of 14.8 g/dl. Contrast enhanced computed tomography showed distended gallbladder with thick edematous walls and a transmural defect in the gallbladder fundus measuring 5mm in thickness. There was adjacent pericholecystic fluid and extensive inflammatory fat stranding. Gallbladder lumen showed no calculus (Figures-1,2).

Figure-1. CT Image 1 of gallbladder perforation (marked)

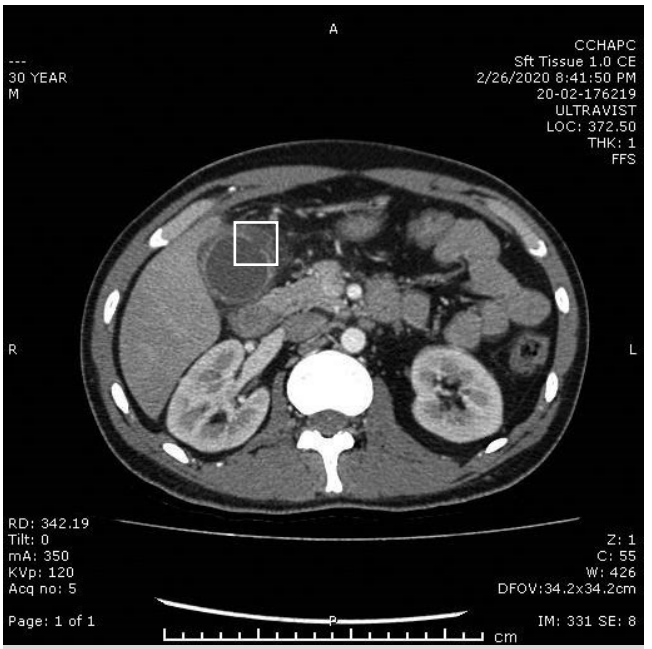

Figure-2. CT Image 2 of gallbladder perforation (marked)

Few prominent sub-cm adjacent lymph nodes were seen, likely reactive. Laparoscopic Cholecystectomy was performed with findings of perforated gallbladder with omental mass formation. Standard cholecystectomy procedure was followed, cystic duct and artery were clipped and divided. Gallbladder was dissected and removed via the epigastric port. Peritoneal toilet was done, and a drain was placed in the subhepatic position. The gallbladder specimen was sent to histopathology and were reported as follows: "Congested and edematous wall having moderate mucosal erosions and epithelial ulcerations along with neutrophilic infiltration, likely Acute Cholecystitis". Post-operatively, the patient's pain subsided, and he improved clinically with no immediate post-op complications noted. Drain output on day one was recorded as 150ml. The drain was emptied and rechecked on second post-op day, 50ml was seen in drain. The drain was subsequently removed, and the patient was advised to follow up after 1 week.

On follow up visit, the abdominal examination was unremarkable, patient was generally in good health with no active complaints.

DISCUSSION

Gallbladder perforations caused by blunt trauma have been reported as early as 1587.[7] Gallbladder perforation of such nature have mainly been reported in male patients as seen in this report.[8-9] The reason for such a perforation could be the time the patient was squeezed, corresponding to early morning where the stomach is empty, and the gallbladder is usually distended.[5] A study conducted in 1981 showed that post-prandially, the cholecystokinin levels increase, leading to constriction of the gallbladder.[10] The exact mechanism of injury however remains unclear.

The clinical presentation of such patients is unclear, as seen in this patient. He was seen by many doctors and was often labelled as having muscular pain. The diagnosis of such injuries is generally done at laparotomies but with the advances in technology; Computed Tomography (CT) a very useful diagnostic tool.[4,11] A discontinuity in the gallbladder wall can be seen on CT which helps in identifying the site of perforation (Figure 1,2).

Damage to the gallbladder may also have signs of damage to other abdominal organs, liver being the most common, hence an open laparotomy

approach is what is recommended.[12] Due to the advances in surgery, a laparoscopic approach was taken in this patient. In a similar case published in 2016, the laparoscopic approach was used to success.[4] Our patient had similar success with the post-operative period being uneventful along with the follow-up.

The management of gallbladder perforation after trauma varies with the type and number of organs involved. The basic principal of diagnosing and then deciding on the course of action to take remains vital in providing the best possible care. To conclude, it is recommended to do a contrast enhanced CT abdomen and get a rough idea of the underlying anatomy before opting for the surgical option.

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AUTHORSHIP AND CONTRIBUTION DECLARATION

Sr. #	Author(s) Full Name	Contribution to the paper	Author(s) Signature
1	Jamil Ahmad	1st Author	
2	Muhammad Fawad	2nd Author	
3	Muhammad Khizar Hayat	3rd Author	