

Laparoscopic Management of Isolated GB Perforation in BTA and Review of Literature

Dr. Devendra Saini¹, Dr. Jagram Meena², Dr. Vimal Kumar Meena², Dr. Mahendra Kumar², Dr. Harish N. L.¹,
Dr. Rajendra Bagree³

¹Senior Resident, ²Assistant Professor, ³Professor, Sawai Man Singh Hospital, Jaipur, Rajasthan, India

*Corresponding author

Dr. Jagram Meena

Email: jaggujagram@gmail.com

Abstract: Isolated gall bladder injury after BTA is a rare entity. We report a case of isolated gall bladder perforation after BTA in a young man which was managed laparoscopically. A 40 year male patient was admitted to our hospital with complain of pain in right upper abdomen since 6 days. On examination there was an abrasion over right hypochondrium. X-ray revealed normal findings but USG showed GB wall edema. Gall bladder contusion with ascites and CECT showed liver contusion with mild to moderate ascites, GB wall thickened. On suspicious findings diagnostic laparoscopy was planned in which Gall Bladder perforation was noted, laparoscopic cholecystectomy done and patient discharged on post-op day 3. There is need for early diagnosis of gall bladder perforation for prevention of morbidity and mortality and to recognize it as a special entity.

Keywords: BTA, Gall bladder Perforation, Laparoscopic, Contusion, Oedema, Ascitis

INTRODUCTION

Isolated gall bladder injury after BTA is an uncommon entity. Only few cases have been reported in the literature. Isolated gall bladder injuries have significant mortality and morbidity when the treatment is delayed due to misdiagnosis. Isolated Gall bladder perforation is common due to chronic cholecystitis and gangrene but rare after blunt trauma abdomen. We are reporting here a case of isolated gall bladder perforation after BTA, and its clinical and radiological findings, along with a review of the literature.

CASE REPORT

A 40 year-old male patient admitted at SMS Hospital, Jaipur with complaints of pain in right upper abdomen for 6 days after hitting by a horse in right upper abdomen. The pain was dull aching in nature, non-progressive, non-radiating, partially relieved by medication, with no relation to change in posture. There was h/o yellowish discoloration of urine and loss of appetite.

On examination, patient was icteric, with a pulse rate of 110/Minute and BP-104/80 mmHg. There was an abrasion of size 4x4 cm located over right hypochondrium. Patient had tenderness and guarding in right upper abdomen.

INVESTIGATIONS

Routine laboratory blood investigations revealed raised TLC (11,890 mm³), raised bilirubin (5.1mg/dl) and slightly raised SGOT, SGPT. Rest all blood investigation were normal. Ultrasound findings were suggestive of Gall Bladder wall edema? GB contusion. CECT abdomen suggestive of thickened GB wall, Liver laceration and mild to moderate ascites (Fig-1).

TREATMENT

On the basis of clinical examination and radiological reports GB perforation was suspected and planned for diagnostic laparoscopy.

On exploration by laparoscopy GB perforation was confirmed, (Fig-2) for which laparoscopic cholecystectomy was done.

Patient was discharged on post-op day 3rd without any complications.

OUTCOME AND FOLLOW-UP

Postoperative course was uneventful. Till date patient is doing well.

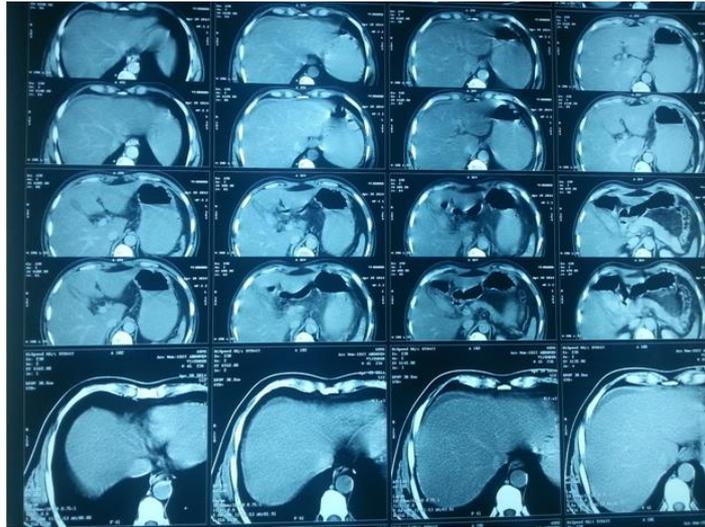


Fig. 1: Contrast enhanced CT of the abdomen showing thickened GB wall and ascites



Fig. 2: Intra-op photograph showing GB perforation

Case study is done at SMS Hospital, Jaipur and Permission taken from patient and ethical committee for publication.

DISCUSSION

Most gallbladder injuries result from penetrating injuries and are rare after blunt trauma; its incidence has been reported as $0.5 \pm 0.6\%$ among all the intra-abdominal injuries [1]. The low rate of blunt trauma to the gall bladder is due to its anatomic location, which gives protection from the surrounding viscera and the ribs [2,3]. Perforations are the most commonly diagnosed gall bladder injuries, accounting for 3.2% of all the injuries [2]. Gallbladder rupture following blunt trauma in the absence of other intra-abdominal injuries is extremely rare [2,4].

Most blunt gallbladder injuries result from motor vehicle crashes, falls, kicks or blow to the abdomen [7]. Factors predisposing to blunt gallbladder injuries are a thin-walled normal gallbladder, a distended gallbladder, and alcohol consumption that increase the tone of sphincter of Oddi and biliary tract pressure [5,7].

Blunt gallbladder injuries are classified as -

1. Contusion

2. Perforation / rupture / laceration – most common
3. Avulsion [3, 6, 7]

Losanoff and Kjossev described a more detailed classification of blunt gallbladder injuries [6].

1A. Contusion with intramural hematoma

1B. Contusion with perforation

2. Rupture

3A. Avulsion with partial detachment

3B. Avulsion with complete detachment from the liver but with attachment to structures of the hepatoduodenal ligament (so called “near traumatic cholecystectomy”)

3C. Torn only from the hepatoduodenal ligament

3D. Completely torn from all attachments (so called “traumatic cholecystectomy”)

4A. Traumatic cholecystitis, secondary to hemobilia

4B. Acute acalculus cholecystitis

5. Mucosal tear with leakage of bile

Associated intra-abdominal injuries:-

Liver > duodenum > spleen [7].

ON IMAGING

- Ultrasonography - if GB is non-visualized suspect for GB avulsion or rupture[7-11].
- CT scan – most reliable technique.

Pericholecystic fluid is most common but is least specific.

Other signs of gallbladder injury

- Ill-defined contour of the gallbladder wall
- A mass effect on the duodenum
- High attenuation intraluminal material (blood)
- A thickened gallbladder wall
- Collapsed gallbladder in a fasting patient.

MANAGEMENT

It depends on the severity of the injury and the general condition of the patient.

Gallbladder rupture / major tears as complete or total avulsion → recommended t/t → Cholecystectomy [15]

Gallbladder contusion and isolated partial avulsion may be observed[7, 12-14].

In patients with blunt abdominal trauma, traumatic gallbladder injury always looks for other intra-abdominal injuries

Isolated gallbladder injury allows conservative treatment as long as no perforation or traumatic cholecystitis is present.

CONCLUSION

Traumatic injury to the gallbladder is uncommon in of patients presenting with abdominal trauma. Isolated injury of the gallbladder is even more unusual. While gross distention of the gallbladder with hyperdense fluid on CT is suggestive of gallbladder injury given a history of trauma, the astute radiologist must be aware of other etiologies that could mimic hemorrhage. Additionally, irregularity in the gallbladder wall or the presence of a collapsed gallbladder with pericholecystic fluid should also raise the suspicion of gallbladder injury.

In this case patient was diagnosed by diagnostic laparoscopy and managed by laparoscopic cholecystectomy. Patient is doing well till date. Thus by having high suspicion we can manage patients by minimal invasive technique and can prevent high morbidity and mortality

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