

Traumatic Gallbladder Perforation: A Differential Diagnosis of Blunt Trauma of Abdomen

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Abstract: Isolated gall bladder injury after blunt trauma abdomen is a rare entity. Its anatomical location allows it to be protected by the liver, intestines, the omentum, and ribs therefore isolated injury of gall bladder is a rare. Due to this the diagnosis is often made during an exploring laparotomy. There is high morbidity and mortality due to delayed diagnosis. Here we are reporting two cases of traumatic isolated gall bladder perforation in the emergency at the stage of peritonitis, then was diagnosed after laparotomy and managed by open total cholecystectomy.

Keywords: Gallbladder perforation; Biliary peritonitis; Exploratory laprotomy; CECT of abdomen; Total cholecystectomy.

I. Introduction

Gall bladder perforation by blunt trauma of abdomen is rare, whose incidence is about 2% of all intra-abdominal injuries^{1,2,5}. The clinical presentation of Gall bladder perforation is variable, resulting in delay diagnosis. Preoperative diagnosis of this condition is difficult. USG of abdomen may show intra abdomen collection. CECT of abdomen can diagnose gallbladder perforation. Early exploratory laparotomy is recommended because of feature of peritonitis and also to reduce high morbidity and mortality encountered^{4,5}.

II. Case Presentation

Case-1: 45y old gentleman presented with history of electric shock with blunt trauma of abdomen due to fall from height. Entry point of electric shock was Rt index finger and exist point was not located. His GCS was 15/15, ECG-Normal, PR-120/min, BP-110/70. On Per abdomen examination, there was tenderness present all over abdomen, also there were guarding, rigidity, rebound tenderness present. USG of whole abdomen suggested intra-peritoneal free fluid. All blood parameters were normal. In the view of the sign of peritonitis, an urgent laparotomy was done. Surgical exploration found biliary peritonitis with aspiration of approx. 1.5 litres of bilious fluid. And there was 0.7X0.7cm. perforation at the fundus of gallbladder. Total cholecystectomy with drain placement was done. Postoperative phase was uneventful.

Case-2: 31year old gentleman, presented in emergency with alleged history of physical assault. Patient was complaining of pain abdomen following blunt injury of abdomen. On examination his GCS was 15/15, PR-100/min, BP-130/70, ECG-normal. Abdomen was distended, diffused tenderness and guarding were also present. FAST was done in emergency, which suggested septated collection in the Morrison pouch & pelvis. In view of peritonitis, urgent laparotomy was done. Surgical exploration found a biliary peritonitis with aspiration of 500ml bilious contamination. There was also a rent of around 2X0.5cm. Total cholecystectomy with drain placement was done. Postoperative phase was uneventful. Condition on discharge was satisfactory.

III. Discussion

Spontaneous perforation of diseased gallbladder is not unusual whereas traumatic perforation of normal gall bladder is rare and usually located at least vascularised fundus^{6,7}. Patient's morbidity due to gallbladder injury is usually associated with intra-abdominal injuries, with an overall mortality between 3.8 and 16%. Traumatic gallbladder perforation may cause less morbidity and mortality than spontaneous gallbladder perforation because spontaneous gallbladder perforation affect mainly in patients with comorbidity. Jose EC et al. insisted that all cases of gall bladder perforation were in fact secondary to a coexistent disease such as inflammation, infection, congenital, obstruction⁸. They also proposed a classification system of gall bladder perforation into 3 groups⁸:-

- 1) Spontaneous:- Idiopathic & Secondary
- 2) Traumatic:- Penetrating & Blunt
- 3) Iatrogenic

Spontaneous gallbladder perforation subdivided into idiopathic and secondary group which includes lithiasis, inflammation, infection, congenital, obstruction, anticoagulants, etc. Incidence of traumatic gallbladder perforation due to blunt trauma of abdomen is low. This is due to its hidden anatomical location, viscera and rib cage protect it. Most cases are due to road traffic accident or after direct blow on abdomen. There is high incidence of traumatic gallbladder rupture is reported in alcohol intoxicated patient. Alcohol intake increases gastrin and secretin secretion, which stimulate bile flow. Due to this pressure of common bile duct elevate by increasing tone of sphincter of Oddi. Clinical diagnosis of gall bladder perforation is difficult because signs are not specific. The clinical signs are often vague^{5,9}. CECT of abdomen may help in the diagnosis.

IV. Conclusion

In case of blunt abdominal trauma gall bladder perforation should be kept of our mind. Although its incidence is very low but intraoperative when there is biliary leak or collection we should keep gall bladder perforation as differential diagnosis other than duodenal perforation.

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