

Gastric Perforation at the Pre Pyloric region- A Rare Presentation after Blunt Trauma of Abdomen

Suryanarayanan Reddy V¹, Ramalingam P¹, Venkataramana², Puneeth Joopali³

¹Professor

²Asst. Professor

³PG Student

Department of
General Surgery
Chalmeda Anand Rao
Institute of Medical Sciences,
Karimnagar-505001, A.P

Correspondence:

¹Prof P. Ramalingam,
MS (Gen.Surgery)
E-mail: drram.pata@gmail.com

ABSTRACT

Aim : Vehicular accidents are quite common these days and fast emerging as one of the leading causes of death. Among injuries sustained in blunt trauma, gastric rupture is quite uncommon. To highlight the Importance of early suspicion, diagnosis and treatment of gastric perforation after blunt trauma of abdomen. We present a rare case of gastric rupture at the pre pyloric region after blunt trauma of abdomen. This condition may present with minimal clinical or radiological signs early in its course. **Conclusion:** A knowledge and high index of suspicion is essential to diagnose this condition early, which otherwise would lead to higher morbidity and mortality.

KEYWORDS: Blunt injury abdomen, gastric perforation, early diagnosis and management.

INTRODUCTION

Gastric rupture is a rare entity following blunt trauma to the abdomen. Vehicular trauma is the cause in 70% of patients, while the rest of the cases is due to direct violence, cardio pulmonary resuscitation, and falls. In left sided trauma, the full stomach is unprotected and more vulnerable to injury. Liver uniformly absorbs impact of trauma on right side. The anterior wall of the stomach is most common site of rupture followed by greater curvature, lesser curvature and posterior wall in order of decreasing frequency. We report a case of gastric rupture at the pre pyloric region after blunt trauma abdomen which is quite unusual

CASE REPORT

Mr. Thatla Posam, Age 40 years, presents with complaints of distension of abdomen since two days, bloody vomiting since 1 day. Patient was apparently asymptomatic 2 days back then alleged to have fallen off of a bullock cart over his right thorax. Later, he developed abdominal distension the next day which was followed by 2 episodes of bloody vomitus. He took treatment outside then presented to the casualty here the next day with abdominal distension along with pain and vomiting

Local examination

- Inspection- abdomen is distended ,skin is shiny, decreased respiratory abdominal wall movements, umbilicus is flat
- Palpation- No local rise of temperature, guarding and

rigidity present, rebound tenderness present, distention of the abdomen

- Auscultation- Bowel sounds heard
- Rectal Examination-Inspection – normal, Digital Examination-Sphincter tone normal, no fecal impaction, no ballooning, no blood staining

INVESTIGATIONS

- X ray erect abdomen- pneumoperitoneum
- USG Abdomen- free fluid in the pneumo peritoneum

DIFFERENTIAL DIAGNOSIS

Abdominal viscus perforation, perforated appendix, Sub phrenic abscess, basal pnemnoitis, peritonitis

MANAGEMENT

Emergency exploratory laparotomy and pre pyloric gastric perforation (3x2cms) closure in two layers after freshening the edges along with an omental patch and peritoneal lavage

DISCUSSION

Gastric rupture is an uncommon entity, occurring with an incidence of 0.02% to 1.7% in blunt abdominal trauma ^(1,2,3). Concomitant intra-abdominal injuries contribute to a significant morbidity and mortality. Prompt and accurate diagnosis is essential for early treatment. Motor vehicle



Figure:1 X-ray showing gas under the diaphragm

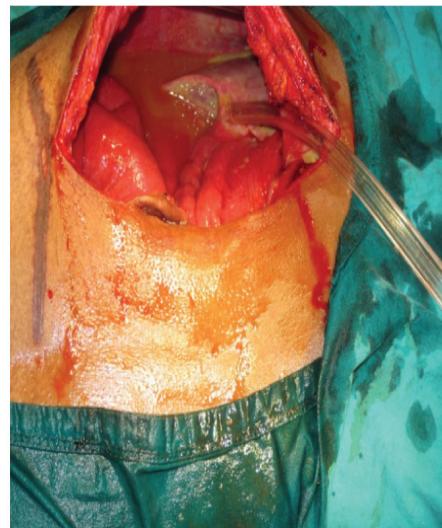


Figure: 2 showing free fluid in the peritoneal cavity



Figure: 3 showing 3x2 cm perforation

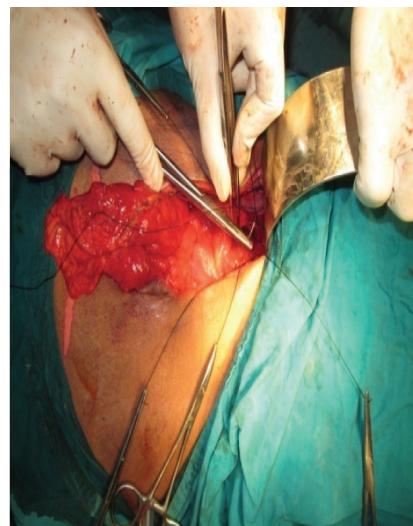


Figure: 3 showing 2 layer closure



Figure:4 showing closure with drains

collisions are the most common cause of gastric rupture in blunt trauma, accounting for approximately 75% of cases^(1,2). Other mechanisms include automobile vs. pedestrian, falls, assaults, and cardiopulmonary resuscitation. A history of consuming a recent meal is common with this injury, as a distended stomach is less pliable and more likely to rupture from blunt force^(1,2).

Preoperative diagnosis may be difficult, because no physical signs are specific for gastric rupture. Although upright chest X-rays can diagnose free intraperitoneal air, chest X-ray fails to identify pneumoperitoneum in a substantial number of patients with gastric rupture because most trauma chest films are done supine^(1,4). Even so, only 50% to 66% of the gastric rupture cases develop enough free air to be detected by upright chest X-ray^(1,4).

In the hemodynamically stable patient, the diagnostic study of choice is CT scan. CT scan can lead to early diagnosis of gastric rupture, and is accurate in detecting associated bowel, vascular or solid organ injury prior to surgery⁽²⁾. The distribution of rupture is common along anterior wall, greater and lesser curvatures in that order has been related to Laplace's law which states that wall tension of a cylindrical object is directly proportional to the product of intraluminal pressure and radius of curvature. Therefore at a given gastric pressure during impact wall tension is highest in the part of stomach which is of greatest curvature predisposing them to rupture⁽⁵⁾.

High incidence of rupture of the anterior wall and greater curvature is due to a shearing force that is generated by a combination of rapid forward motion of these areas during deceleration, the relatively fixed nature of the lesser curvature and the momentum of large volume of the gastric contents⁽⁵⁾. 'Stomach jolt' due to rapid deceleration of full stomach is another mechanism of stomach injury particularly if associated with splenic injury⁽⁶⁾.

Adequate debridement is necessary prior to repair. Repair of the stomach with a 2-layer closure is the treatment of choice for blunt gastric rupture². Many blunt injuries may require resection after debridement. Nasogastric drainage and thorough peritoneal lavage with saline are necessary after the injury is repaired. The most common complications are intra-abdominal abscess, gastric fistula formation, and wound infection^(1,2,4). The mortality rate in patients with associated injuries and gastric rupture is < 66%^(1,4).

CONCLUSION

Having a high index of suspicion, making an early diagnosis, performing adequate debridement and repair, and aggressively treating any complications are keys to survival in patients that have sustained a gastric rupture from blunt abdominal trauma.

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