

Gastric perforation due to blunt abdominal trauma

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Abstract

Gastric perforations following blunt abdominal trauma are rare, accounting for <2% of all blunt abdominal injuries. This is usually associated with other solid visceral injuries. Isolated blunt gastric ruptures are very rare. Severity of injury, timing of presentation and presentation following last meal as well as concomitant injuries are important prognostic factors. We present a patient with gastric perforation following road traffic accident.

Keywords : Blunt trauma, abdomen , Gastric perforation.

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Introduction

The most common injury during blunt abdominal trauma (BAT) is of solid organs. Hollow viscus injuries are much more uncommon compared to the non-hollow ones[1]. Geill in 1899, reported an 11% incidence of major intestinal injury among the study patients sustaining blunt abdominal injury[1]. It has been reported that small bowel is the most commonly injured hollow viscus and the third most commonly injured organ in BAT[1,2]. Bowel injuries may be caused by either a blunt or penetrating abdominal trauma. Blunt trauma causes injuries by either compression or by deceleration[2]. Compressive forces may result from direct blows or external compression against a fixed object (e.g. seat belt, spinal column). These forces may deform hollow organs and transiently increase intraluminal pressure, resulting in rupture. Deceleration forces cause stretching and linear shearing between relatively fixed and free objects[3]. As bowel loops travel from their mesenteric attachments, thrombosis and mesenteric tears, with resultant splanchnic vessel injuries can result[4]. Whatever the mechanism, early recognition of these lesions can be difficult. An overlooked bowel injury is very dangerous because of its tremendous infectious potential[5]. The most important problem associated with these conditions that they are frequently remain undetected or the KAP survey. The questions included were multiple

diagnosed too late despite advanced techniques such as focused assessment sonography in trauma (FAST), computer tomography, and magnetic resonance imaging[6].

Case report

A 6 years old female patient presented with severe abdominal pain and distention as a result of blunt abdominal trauma sustained in a motor vehicle accident 2 h previously. At presentation, the patient was fully conscious, normotensive with a pulse rate of 112/min. The haemoglobin was 13.6 g/dL. Multiple bruises and abrasions were evident over the anterior chest and epigastrium. Tenderness was present over the left lower anterior chest wall; air entry was normal. At laparotomy serosanguinous fluid with undigested food particles was noted. A full thickness anterior gastric perforation measuring 5 cm extended proximally from the pylorus along the longitudinal gastric axis. This was classified as a Grade II gastric injury. Haematomas were noted over the transverse colon which were managed conservatively. No injuries found in jejunum and ileum. The gastric perforation was repaired in two layer fashion. The post-operative period of patient was uneventful and patient was discharged on the 7th post-operative day.

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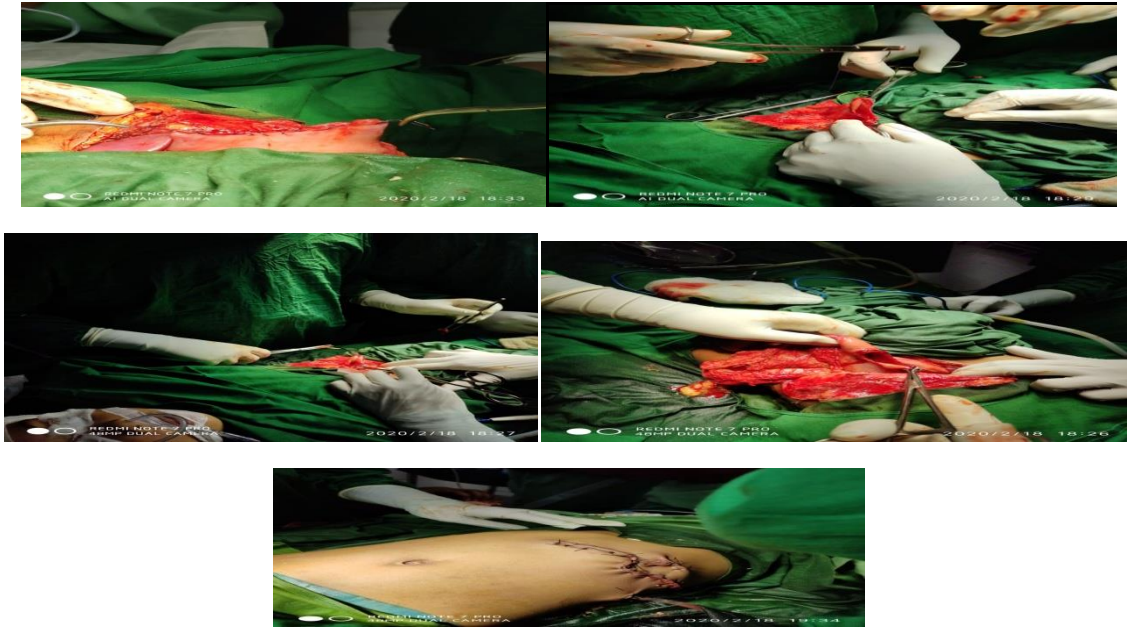


Fig 1: Gastric Perforation Due To Blunt Abdominal Trauma

Discussion

Road traffic accident is most common cause of gastric rupture accounting up to 75%.[1-3]. Other causes of gastric rupture are assault, falls and rarely cardiopulmonary resuscitation. Gastric rupture following blunt abdominal injury is commonly associated with recent meal causing gastric distention which increases susceptibility for injury. In this case also, history of meal consumption was present just before the accident[7]. Isolated gastric rupture following blunt abdominal trauma is rare[3]. Anatomical position of stomach and its high degree of mobility are protective mechanism for preventing injury following blunt abdomen trauma[3]. Children are more susceptible to abdominal organ injuries because abdominal wall is thin, diaphragm is more horizontal and ribs are very elastic. Anterior gastric wall is commonest site for rupture followed by greater curvature, lesser curvature and posterior wall. Patient presented with signs of acute abdomen as pain, distention, guarding and rigidity which indicates that injury is not contained within lesser sac. Early diagnosis of gastric perforation following blunt abdominal trauma is suspected as free intraperitoneal air on plain X-ray abdomen and chest X-ray is seen in 16-60%[3-6]. Although hemodynamically stable patient require radiological investigations with contrast CT scan which is more informative than any other investigation as this also reveal any other associated solid organ injuries and bony injuries which are usually associated with gastric rupture[7,8]. CT abdomen will show hemoperitoneum, pneumoperitoneum and extravasation of contrast from gastric lumen. In this case, patient was hemodynamically stable so contrast CT scan was done which showed hemoperitoneum and gastric rupture[9]. Patient was immediately shifted to operation theatre and repair of stomach is done. 2 layered suturing is the treatment of choice for blunt injury associated gastric rupture. Thorough and adequate peritoneal lavage and drainage are also necessary. Most common complication is intra-abdominal abscess formation post-surgery. Mortality following blunt gastric perforation is reported in range of 0-66%[10]

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Conclusion

To conclude, early diagnosis and treatment are of utmost importance. Most common site for perforation in blunt trauma is jejunum. Early surgery following adequate resuscitation in gastrointestinal perforation following blunt trauma abdomen is associated with a very good outcome.

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