http://jmscr.igmpublication.org/home/
ISSN (e)-2347-176x ISSN (p) 2455-0450
crossref DOI: https://dx.doi.org/10.18535/jmscr/v8i9.05

IGM Publication
Journal Of Medical Science And Clinical Research
An Official Publication Of IGM Publication

Isolated Gastric Perforation in a Patient of Blunt Trauma Abdomen: A Case Report

Authors
Rohit Kumar[1], Arvind Bhatia[1*], Ankit Sharma[2]
[1]M.O. Specialist, General Surgery, Pt. JLNGMC, Chamba, H.P., India
[2]M.O. Specialist, General Surgery, Zonal Hospital, Solan, H.P., India
*Corresponding Author
Arvind Bhatia
Department of General Surgery, Pt. JLNGMC Chamba (H.P.), Pin code 176310, India

Abstract
Gastric perforations following blunt trauma abdomen are very rare, accounting for < 2% of all blunt abdominal injuries. Isolated gastric perforation following blunt abdomen trauma are not so common. They are usually associated with other solid visceral organ injuries. Injuries to the stomach are associated with the highest mortality of all hollow viscus injuries. Among injuries sustained in blunt trauma, gastric perforation is quite uncommon especially at the fundus. We present a rare case of gastric perforation at fundus after fall leading to blunt trauma abdomen. This condition may present with minimal clinical or radiological signs early in its course. 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 trauma abdomen, gastric perforation, isolated, fundus.*

Introduction

Gastric perforation 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. Gastric perforations following blunt abdominal trauma (BAT) have an incidence of between 0.02 to 1.7%[1,2]. The anterior wall of the stomach is most common site for perforation followed by greater curvature, lesser curvature and posterior wall in order of decreasing frequency. We report a case of gastric perforation at fundus after blunt trauma abdomen which is quite unusual.

A multicentre retrospective analysis of blunt gastric injuries from four trauma centres in Brazil over a 14 year period yielded only 33 cases of gastric perforation.[3] The rarity of gastric perforation following BAT in civilian practice together with the inconsistent diagnostic yield from standard investigations has led to this condition being invariably recognised at laparotomy. In this case report we describe a gastric perforation at the fundus near GE junction following BAT due to fall.

Case Report

A 34 years old female presented to surgery OPD with upper abdominal pain following blunt abdominal trauma sustained after fall 10 hrs previously. At presentation, the patient was fully conscious, cooperative and well oriented to time,

place and person. She was normotensive with a pulse rate of 110/min. On local examination, abdomen was soft with mild tenderness in epigastric region. Liver dullness was masked. Bowel sounds were normal. There were no abrasions or contusions over the abdomen. Digital rectal examination was within normal limits. Routine haematological examination was normal. Her haemoglobin was 12.8 g/dL. Serum amylase and lipase levels were also within normal limits. Chest X-ray PA view revealed air under right dome of diaphragm.

Laparotomy revealed serosanguinous fluid with undigested food particles. Liver, spleen, small and large gut were normal. There was no hematoma over the omentum and mesentry. Lesser sac opened and pancreas was normal. A full thickness gastric perforation of size 2 cm at the fundus near gastroesophageal junction. This was classified as a Grade II gastric injury. Thorough wash was given and perforation closed with absorbable suture in 2 layers. Post operative period was uneventful and the patient was discharged on 10th postoperative day.

Road traffic accidents are the most common cause of gastric rupture accounting for upto 75% cases. [4] Other causes of gastric rupture include assault, falls and rarely cardiopulmonary resuscitation. Recent meal intake acts as one of the risk factors for gastric rupture following blunt abdominal injuries by causing gastric distention thereby increasing the susceptibility of injury. Gastric perforations following blunt abdominal trauma are usually associated with other intra- and extra-abdominal injuries, though isolated gastric ruptures are uncommon. Anatomical position of stomach and its high degree of mobility protects the stomach from injury following blunt trauma abdomen [5]. Other organs commonly injured include spleen followed by thorax.

Children are more susceptible to abdominal organ injuries because of thin abdominal wall, more horizontal diaphragm and elastic ribs. [4] Anterior gastric wall is the most common site for rupture followed by greater curvature, lesser curvature and posterior wall. [6] Free intraperitoneal air on plain X-ray abdomen and chest X-ray leads to early diagnosis of gastric perforation following blunt abdominal trauma in around 16-60%[5,6,7]. Hemodynamically stable patients require investigations with contrast Computed tomography (CT) scan which is more informatory as this also reveals other associated solid organ injuries and bony injuries. In these cases, CT abdomen shows hemoperitoneum, pneumoperitoneum and extravasation of contrast from gastric lumen. In our case, patient was hemodynamically stable but due to non availability of CT scan it was not performed.

Injuries to the stomach are associated with the highest mortality of all the hollow viscus injuries. The overall mortality has been reported from 0-66%. Morbidity and mortality increases collateral with time to operative intervention. Intervention within 8 hours is associated with 2% mortality, while after 24 hours mortality is over 30%.

The surgical management of gastric injury is largely determined by the grade of injury which reflects the extent, nature (haematoma, laceration) and location of the injury.

Majority of gastric injuries are Grade 1 to 3 and are amenable to primary repair, while primary repair is not feasible for Grade 4 and Grade 5 gastric injuries which are uncommon, associated with other organ and major vascular injuries. Affected patients rarely reaches hospital alive.

Depending upon the proximal or distal stomach location of the tissue loss and extent of devascularisation, sub-total or rarely total gastrectomy is undertaken.

Conclusion

Isolated gastric rupture is a rare phenomenon after blunt abdominal trauma. Severity of the injury, timing of presentation and presentation following the last meal as well as accompanying injuries are important prognostic factors. Early diagnosis and prompt intervention greatly limits mortality and morbidity associated with blunt gastric injuries and prevents septic complications.

Acknowledgement: Nil

References

1. Brunsting LA, Morton JH. Gastric rupture from blunt abdominal trauma. J Trauma. 1987;27:887-891.
2. Ishikawa K, Ueda Y, Sonoda K, Yamamoto A, Hisadome T. Multiple gastric ruptures caused by blunt abdominal trauma: Report of a case. Surg Today. 2002;32:1000-1003.
3. Bruscagin V., Coimbra R., Rasslan S., Abrantes W.L., Souzac H.P., Gasparini N. Blunt gastric injury. A multicentre experience. Inj. Int. J. Care Injured. 2001;32: 761–764.
4. Gheewala HM, Wagh S, Chauhan SA, Devlekar SM, Bhave S, Balsarkar DJ. Isolated Double Gastric Perforation in Blunt Abdominal Trauma-a Case Report. Indian J Surg. 2017;79(3):254-5.
5. Ishikawa K, Ueda Y, Sonoda K, Yamamoto A, Hisadome T. Multiple gastric ruptures caused by blunt abdominal trauma: report of a case. Surg Today. 2002;32(11):1000-3.
6. Roupakias S, Tsikopoulos G, Stefanidis C, Skoumis K, Zioutis I. Isolated double gastric rupture caused by blunt abdominal trauma in an eighteen months old child: a case report. Hippokratia. 2008;12(1):50-2.
7. Singh B, Kaur A, Singla AL, Kumar A, Yadav M. Combined gastric and duodenal perforation through blunt abdominal trauma. J Clin Diagn Res. 2015;9(1):PD30-2.