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AN INTERESTING AND RARE PRESENTATION OF BLUNT INJURY ASSOCIATED JEJUNAL PERFORATION

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Abstract : A through and through jejunal perforation close to DJ flexure caused by blunt abdominal trauma is uncommon and most often seen after motor vehicle accidents. Here we present a case of 22 year old male admitted with alleged history of RTA with blunt injury abdomen caused by handle bar injury over epigastric region.1,4 Clinically patient had epigastric tenderness with guarding and rigidity . X-ray revealed free air under diaphragm. USG and CECT abdomen shows free fluid and free air in the abdomen. Patient was clinically and hemodynamically stable. We proceeded with emergency exploratory lapratomy which showed through and through jejunal perforation about 5cm distal to the duodenojejunal flexure which was closed primarly and reinforced with omental patch along with feeding jejunostomy. Post operative period was uneventful. Patient got discharged on 10th POD. We are reporting this case for its rare presentation.

Keyword : Through and through jejunal perforation, Blunt abdominal trauma

INTRODUCTION:

Blunt abdominal trauma (BAT) can injure any or all abdominal organs, but through and through jejunal perforation close DJ flexure is extremely rare. The vast majority of intestinal perforations following BAT is caused by motor vehicle accidents, but can also result from physical assault by human beings or animals, or fall from height, or injury caused by bicycle handle bar.4,6 The first case of intestinal rupture secondary to blunt trauma was reported by Samuel Annan in 1837.3 Isolated jejunal perforation occurs in less than 1% of blunt trauma patients.8,11 Among this through and through jejunal perforation is very rare. To our knowledge, ours is the first case of through and through jejunal perforation.

CASE REPORT:

A 22 year old male admitted with alleged history of RTA 24 hours back causing blunt trauma abdomen due to handle bar injury over epigastric region. Clinically he presented with abdominal pain and abdominal distension. On palpation he had severe epigastric tenderness along with guarding and rigidity. There were no external injuries. On auscultation bowel sounds were absent. Digital rectal examination was empty and there was no fecal stain. X-ray revealed – free air under diaphragm. USG and CECT-abdomen shows free fluid and free air. Vitals are normal and the paient was hemodynamically stable. Blood investigations were within normal limits except mild leukocytosis and slight elevation of liver transaminases and amylase.

Fig:1 X-Ray Chest PA View

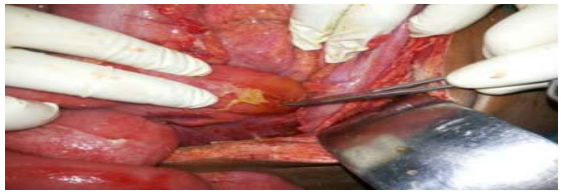

Fig:2 Anterior Jejunal Wall Perforation

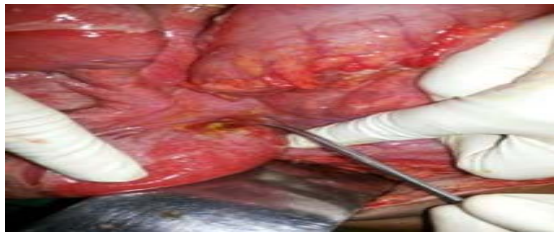

Fig:3 Posterior Jejunal Wall Perforation

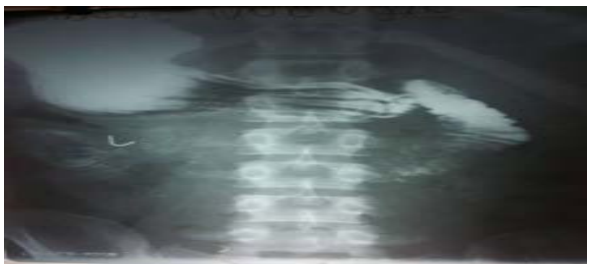

Fig:4 Postoperative Gastrograffin Study

We proceeded with emergency exploratory lapratomy which revealed a 1*1cm through and through jejunal perforation involving the anterior and posterior bowel wall sparing the mesenteric and anti mesenteric borders. Warm saline wash given followed by primary closure of the both perforation along with omental patch reinforcement by 3'0 silk followed by feeding jejunostomy. The patient had an uneventful postoperative course. FJ feeds started on the 2nd day. Oral liquids started on 5th day and on the 6th postoperative day an oral gastrograffin study was performed, which showed free flow of the contrast in to the small bowel with no mucosal irregularities. Solid diet started on 7th day and patient was discharged on 10th day.

DISCUSSION:

The abdomen is the third most commonly injured part of the body following trauma.1,2 Early recognition of small bowel injury is important in the prevention of morbidity. Seventy-five percent of blunt abdominal traumas are caused by motor vehicle accidents.3 Although small-bowel injury has been reported to be the third most common injury in blunt abdominal trauma, it occurs in less than 1% of blunt trauma patients. 10The diagnosis of hollow viscus organ injury should be based upon the mechanism of injury, history and serial physical examinations.5,11 Injury to the intra-abdominal structures can be classified into 2 primary mechanisms of injury – compression forces and deceleration forces.4 Compression or concussive forces may result from direct blows or external compression against a fixed object (e.g. lap belt, spinal column). 8,9,10 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.2,3,4 As bowel loops travel from their mesenteric attachments, thrombosis and mesenteric tears, with resultant splanchnic vessel injuries can result. Whatever the mechanism, early recognition of these lesions can be difficult. An overlooked bowel injury is very dangerous because of its tremendous infectious potential.2,7 Annan in 1837 reported the first case of intestinal rupture secondary to blunt trauma in America.3 It has been observed in earlier studies that these injuries are seen in the younger age groups and usually occur due to road traffic accidents. 3,5,6 in various study shows most of the patient presented with abdominal pain, tenderness and distension. However, the features were vague at initial examinations and became obvious only at repeated abdominal examinations. Delayed presentation or large leakage of bowel contents into the peritoneal cavity results in increased morbidity.

This has also been reported in others studies.6 As with others studies, the small intestine was also the most commonly injured . it was observed that the proximal jejunum and distal ileum were more prone to perforation. This has also been observed in earlier reports.7,10 But some studies have not supported this view.3,11 Dauterve et al. in a study of 60 patients, found that less than half of the perforations occurred in these zones.3 However, according to his study, mesenteric injuries do occur more frequently at these points. Similar results were noted in the present study. Colonic injuries occurred less frequently than small intestinal injuries. This has also been reported in others studies.2,3,5,6 This is mainly due to its location and the lack of redundancy, which prevents formation of closed loops. Diagnostic tests can be used to evaluate patients with blunt abdominal trauma. These include ultrasonography (US), diagnostic peritoneal lavage (DPL), computed tomography (CT) and diagnostic laparoscopy (DL). Ultrasonography is convenient, cheap and non-invasive. A positive test is defined as evidence of free fluid or solid organ parenchymal injury.4 DPL was the diagnostic method of choice for evaluating blunt abdominal injury in the past, but recently has been often replaced by CT imaging.10 DPL is an important adjunct in cases where bowel injury is suspected.7 Although DPL is sensitive in identifying hemoperitoneum and associated hollow viscus injury, it has been criticized for its higher rate of non-therapeutic laparotomy.11 CT findings considered diagnostic for bowel injury are contrast extravasation and/or extraluminal air. Findings which are non-diagnostic but suggestive are; free fluid without solid organ injury, small bowel thickening and dilatation.20 Peritoneal fluid with no visible solid organ injury is an important sign of bowel injury; this finding has been replicated in several studies.9,10,11 CT diagnosis for small bowel perforation has a sensitivity of 92% and specificity of 94%.10 The role of laparoscopy in blunt abdominal trauma is mainly diagnostic. In the recent years, there have been reports on therapeutics laparoscopy and repair of bowel perforations.1,2,8 In hemodynamically stable patients with blunt abdominal trauma, laparoscopy safely and effectively identifies bowel injuries. Early recognition of these injuries and timely surgical treatment offers the best prognosis.1,2,4 Regarding treatment, exploratory laparotomy, drainage of septic peritoneal fluid and wound saline lavage are very important.

Prophylactic antibiotics are required.1 Simple closure is usually adequate for single perforation of the small intestine, but more extensive injuries such as multiple perforations and gangrene from mesenteric injuries usually require resection and anastomosis.3,5 Large bowel injuries particularly in the left colon may require creation of stoma.6 In our case these two perforations were closed primarily and reinforced with omental patch along with feeding jejunostomy. Mortality rates quoted from blunt intestinal trauma range from 10-30%.3 most probably due to the low rates of associated injuries as compared with others studies. Reports have shown that mortality increases with the number of associated injuries.6,9

CONCLUSION:

Traumatic through and through jejunal perforation close to DJ flexure is rare, diagnosis made by strict monitoring, high index of clinical suspicion & help of diagnostic tools, early diagnosis & timely intervention offer better prognosis.

REFERENCES:

1. Salomone JA, Salomone JP. Abdominal Trauma, Blunt. Available at e medicine at Web MD. Accessed on 2nd Oct 2009.

2. Pereira Fraga G, deSouza e Silva FH, deAlmeida NA, Machado Curi JC, Mantovani M. Blunt abdominal trauma with small bowel injury: are isolated lesions riskier than associated lesions ? Acta Cirurgica Brasileira 2008; 23:192-197.

3. Sule AZ, Kidmas AT, Awani K, Uba F, Misauno M. Gastrointestinal perforation following blunt abdominal trauma. East Afr Med J. 2007; 84:429-433.

4. Zheng YX, Chen L, Tao SF, Song P, Xu SM. Diagnosis and management of colonic injuries following blunt trauma. World Journal of Gastroenterology 2007; 13:633-636.

5. Munshi IA, DiRocco JD, Khachi G. Isolated jejunal perforation after blunt thoracoabdominal trauma. J Emerg Med 2006;30:393-5

6. Yegiyants S, Abou-Lahoud G, Taylor E. The management of blunt abdominal trauma patients with computed tomography scan findings of free peritoneal fluid and no evidence of solid organ injury. Am Surg 2006; 72:943-946.
7. Saku M, Yoshimitsu K, Mwakami J, Nakamura Y, Oguri S, Noguchi T, Ayukauza K, Honda H. Small bowel perforation resulting from blunt abdominal trauma : interval change of radiological characteristics. Radiat Med 2006; 24:358-364.
8. Ameh EA, Nmadu PT. Gastrointestinal injuries from blunt abdominal trauma in children. East Afr Med J. 2004; 81:194-197.
9. Fakhry SM, Watts DD, Luchette FA. Current diagnostic approaches lack sensitivity in the diagnosis of perforated blunt small bowel injury: Analysis from 275, 557 trauma admission from EAST Multi-Institutional HVI Trial. J Trauma 2003; 54:295-306.
10. Iannelli A, Fabiani P, Karimdjee BS, Baque P, Venissac N, Gugenheim J. Journal of laparoscopic and Advanced Surgical Techniques 2003; 13:189-191.
11. Mathonnet M, Peyrou P, Gainant A, Bouvier S, Cubertafond P. Role of laparoscopy in blunt perforations of the small bowel. Surgical endoscopy 2003; 17:641-645

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