

Isolated Jejunal Perforation Following Blunt Abdominal Trauma: A Rare Clinical Entity

Manvindu Jha*, Animesh Vatsa

Department of vascular surgery, army hospital R&R, Military hospital Srinagar, India

Abstract

Isolated Jejunal perforation following blunt abdominal trauma is a rare clinical condition. It may easily be missed during first examination or initial radiological studies, so a delay in diagnosis is common. We present a case of isolated blow out Jejunal perforation following blunt abdominal trauma which was not diagnosed in the emergency department and initial radiological assessment. Diagnosis was established 10 hrs later following serial clinical examination and radiological studies. Diagnosing an isolated small intestine injury is still a medical challenge. However medical observation is a life saving measure.

Keywords: Blunt abdominal trauma; Intestinal perforation; Jejunum

Introduction

Small bowel perforation following blunt abdominal trauma account for 3-5% of cases. However isolated blow out jejunal perforations are very rare. Usually fixed points as DJ flexure and Ileocaecal junction are the common sites. Samuel Annan reported the first case of intestinal perforation in 1837 [1]. Timely diagnosis of an intestinal perforation can be made on clinical suspicion, evaluating the history and mechanism of trauma, serial physical examination with radiological assessment and serial medical examination [2].

Case report

A 17 years old serving recruit was admitted with history of trauma to upper and mid abdomen due to knee kick sustained during a football match. This was the only reported history and mechanism of injury. On admission, patient was in a stable clinical condition with vague upper abdominal pain being the only complaint. His vital parameters were within normal limits (pulse rate- 64/min, Blood pressure- 110/64 mm Hg and respiratory rate- 16/min). Abdominal examination was unremarkable except tenderness in the umbilical and epigastria regions. The patient was found to have normal bowel sounds in all quadrants and digital rectal examination was also normal. Haematological and biochemical parameters were within normal limits. Plain radiological chest did not reveal any free fluid and Focused assessment with sonography for trauma (FAST) did not reveal any free fluid. Patient was admitted in ICU for observation with serial physical examinations. Ten hours later patient had increasing abdominal pain with progressive abdominal distension. On examination patient had tachycardia. Abdominal examination revealed diffuse tenderness with guarding in the epigastrium and signs of peritonise. Plain abdominal CT scan demonstrated free air and fluid in the abdominal cavity but no evidence of any solid organ injury Figure 1. Subsequently patient was taken up for exploratory laparotomy. Intraoperative findings included a 1cm wide blow out jejunal perforation on the anti-mesenteric border Figure 2. 30 cm from the Duodenojejunal flexure with 500 ml of Bile stained free fluid in the peritoneal cavity. Rest of the intraperitoneal organs and pancreas were normal. The ruptured Jejunal site was sutured primarily Figure 3 followed by thorough peritoneal lavage. Postoperative period was uneventful. Oral intake was started on the third day with fluids and subsequently semisolids from fourth day. Patient had mild surgical site infection and was discharged on tenth post-operative day in good health.



Figure 1: NCCT showing free fluid in abdomen.



Figure 2: Perforation on the ant mesenteric border.

Discussion

Isolated small intestinal perforation due to blunt abdominal trauma is an extremely rare clinical situation According to a large study by EAST Multi- institutional hollow viscous injury research group, the

*Corresponding author: Manvindu Jha, Department of vascular surgery, army hospital R&R, Military hospital Srinagar, India, E-mail: jhamanvindu@rediffmail.com

Received: 10-Feb-2022, Manuscript No. jmis-20-15267; Editor assigned: 14-Feb-2022, PreQC No. jmis-20-15267 (PQ); Reviewed: 02-Mar-2022, QC No. jmis-20-15267; Revised: 08-Mar-2022, Manuscript No. jmis-20-15267 (R); Published: 17-Mar-2022, DOI: 10.4172/jmis.1000128

Citation: Jha M, Vatsa A (2022) Isolated Jejunal Perforation Following Blunt Abdominal Trauma: A Rare Clinical Entity. J Med Imp Surg 7: 128.

Copyright: © 2022 Jha M, et al. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

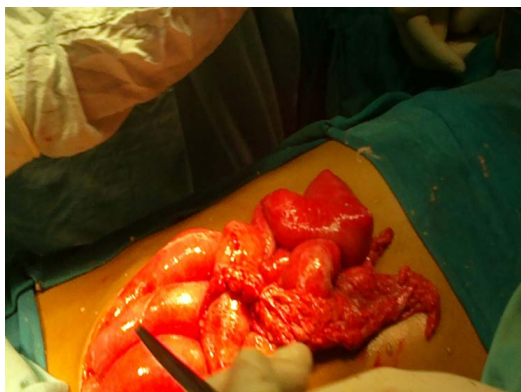


Figure 3: After repair.

Table 1: 12 Cases of Isolated Jejunal Perforations have been reported.

1993	W K Chiang et al.	1	Blunt trauma
1994	J M Lindenmann et al.	1	Blunt trauma
2004	H Rajali et al.	1	Blunt trauma
2006	I A Munshi et al.	1	Blunt trauma
2007	A K Coskun et al.	1	Knee kick
2010	Kostatinidis C et al.	1	Physical assault
2010	A Baccoli et al.	3	Blunt trauma

incidence is calculated as only 0.3% of all blunt trauma admissions [3]. The mechanism of small bowel injuries in trauma include shearing forces, compression between the abdominal wall and vertebral column and bursting injury due to sudden increase in intraluminal pressure. Unlike patients with penetrating injuries, the patient with blunt trauma rarely presents with clinical evidence of a perforated hollow viscous as was present in our case. This type of injury is known as ‘blow out’ perforation because they are located on the anti-mesenteric border of the intestine and results from a sudden increase in the intraluminal pressure in a fluid or air-fluid filled segment of the intestine. [3, 4].

Physical examination alone is not sufficient for diagnosis.

Clinical evidence of peritonitis following small bowel perforation may be insidious because the seeping content is a low irritant with low bacterial count. Peritoneal lavage has proven to be sensitive for haemoperitoneum, but it was found to be less reliable in small intestinal injuries [4]. There are no clinically dependable signs or symptoms as well as no free air under diaphragm on plain chest radiography. FAST is a useful tool for diagnosis of solid organ injuries and detects free fluid in the abdomen, but it is not adequate to assess small intestinal injury with a positive predictive value of 38% [4,5]. The gold standard for assessment of blunt trauma diagnosis is CT scanning, with a sensitivity of 92% and specificity 94% [6]. Diagnostic laparoscopy should be preferred in haemodynamically stable patients who confirm the diagnosis and now it is even possible to close those perforation using end sutures or staplers [7]. Since 1983, 12 cases of isolated Jejunal perforations have been reported (Table 1). Clinical observation was not sufficient to justify the diagnosis and so the preoperative diagnosis of isolated Jejunal perforation was definitely remote. A high index of clinical suspicion, repeated clinical examinations and the utilization of imaging modalities really helps to diagnose this kind of clinical entity.

References

1. Griswold RA, Collier HS (1961) Blunt abdominal trauma. *Int Abstr Surg* 112:309-329.
2. Abbasakoor F, Vaizey C (2003) Pathophysiology and management of bowel and mesenteric injuries following blunt abdominal trauma. *Trauma* 5:199-214.
3. Watts DD, Fakhry SM (2003) Incidence of hollow viscus injury in blunt trauma: an analysis from 275,557 trauma admissions from the East multi-institutional trial. *J Trauma* 54: 289-294.
4. Pravin S, Smith DE, Asher WM, Virgilio RW(1975) Effectiveness of peritoneal lavage in blunt abdominal trauma. *Ann Surg* 181: 255-261.
5. Schenk WG, Lonchyna V, Moylan JA (1983) Perforation of jejunum from blunt abdominal trauma. *J Trauma* 23:54-56.
6. Scherck J, Shatney C, Senaki K, Selivanov V (1994) The accuracy of computed tomography in the diagnosis of blunt small bowel perforation. *Am J Surg* 168: 670-675.
7. Townsend MC, Pelias ME (1992) A technique for the rapid closure of traumatic small intestinal perforation without resection. *Am J Surg* 164:171-172.