



**ORIGINAL RESEARCH PAPER**

**General Surgery**

**A CASE REPORT OF COMPLETE JEJUNAL TRANSECTION-PRESENTATION IN BLUNT ABDOMINAL TRAUMA**

**KEY WORDS:** BAT, Jejunum transection, Injury, Isolated

<b>Dr Vinodh Duraisamy</b>	M.S. Institute Of General Surgery, Rajiv Gandhi Government General Hospital, Chennai
<b>Dr Pavithra Arjunaun*</b>	M.S.,Final year Postgraduate.Institute Of General Surgery, Rajiv Gandhi Government General Hospital, Chennai *Corresponding Author
<b>Prof.Dr.S. Maniselvi</b>	M.S.,D.G.O.Institute Of General Surgery, Rajiv Gandhi Government General Hospital, Chennai
<b>Prof.P.S. Shanthi</b>	M.S.,D.G.O.Institute Of General Surgery, Rajiv Gandhi Government General Hospital, Chennai

**ABSTRACT**

Blunt abdominal trauma causing small bowel injury is relatively uncommon. Bowel may get injured but perforation and complete transection is rare. Missed or delayed diagnosis was implicated as a major contributor for high mortality. Small bowel injuries are uncommon after Blunt Abdominal Trauma (BAT) and are usually associated with high energy deceleration injury, most commonly due to road traffic accidents. The possibility of intestinal injury must be kept in mind while examining patients with blunt abdominal trauma despite negative clinical signs. Small bowel is the third most common organ injured in blunt abdominal trauma. Here we present a case of jejunal transection following deceleration injury sustained in road traffic accident with a presentation which was delayed for 12hours. The patient had polytrauma. A high index of suspicion and timely surgical intervention resulted in a successful outcome.

**INTRODUCTION:**

The small intestine represents the third most commonly injured organ with a reported incidence of 5%-15%. Injury to small bowel and mesentery is believed to account for an incidence of 1%-5%. In BAT, detection of small intestinal injury is uncommon and corresponds for less than 1.1% of blunt trauma hospitalisations with only 0.3% being perforated. In polytrauma, bowel injuries are difficult to evaluate and often missed despite improved diagnostic techniques. Delay in diagnosis is frequently linked to higher morbidity and mortality rates. The majority of small bowel injuries are brought on by car accidents, falls from great heights, and other injuries.

**CASE REPORT:**

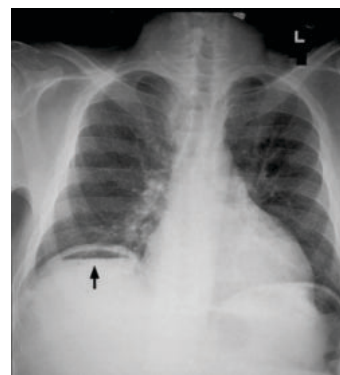
A 34 years old male sustained a blunt injury to the central abdomen during a collision with a lorry while driving a four wheeler. He presented with severe abdominal pain, vomiting and resuscitated in local Center and referred to our institute RAJIV GANDHI GOVERNMENT GENERAL HOSPITAL for further management. On receiving in emergency he was tachypneic, and having tachycardia with blood pressure of around 110/80mm of hg. On examination he was in distress and a transverse abrasion of about 10cm in the epigastric region. Abdomen was slightly distended and generalised guarding and rebound tenderness present. bowel sounds were absent. Systemic examination did not reveal any other signs of associated injury.

Laboratory parameters were in the normal range with hb around 13gm/100ml, PCV around 40%. An urgent X-ray erect abdomen and chest were done which shows air under the diaphragm indicative of pneumoperitoneum and suggestive some hollow viscus injury.

On ultrasonography of the abdomen revealed hemoperitoneum with fluid collection in the perisplenic space. The other solid organs were normal. Patient was immediately resuscitated and planned for exploratory laparotomy and proceed.

Intraoperative findings showed a hemoperitoneum of around 500 ml and a complete transection of jejunum which was 100

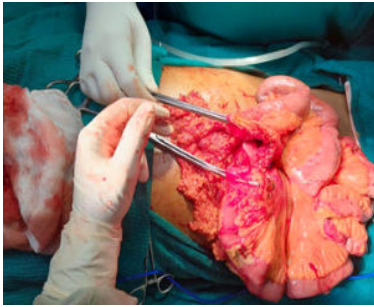
cm from the duodenojejunal Flexure with associated mesenteric tear. The transected portion was sealed by a wrap of omentum. A limited small bowel resection and primary anastomosis was performed and through wash was given and intra abdominal drain was kept. His post operative course was uneventful and drained removed on third post operative day and started him on orals and discharged on day 11 in stable and healthy condition.



**Abdominal erect X-ray showing air under diaphragm (pneumoperitoneum)**



**Figure 1: intraoperative image of transected ends of jejunum**



**Figure: 2** resected ends of jejunum planned for primary anastomosis.



**Figure 3**-end to end anastomosis of transected jejunal loops

**Discussion:**

Most cases of small bowel perforation involve blunt trauma to abdomen as a result of motor vehicles and fall from heights, and are commonly linked with numerous injuries. In these situations, the mechanism of injury is typically small bowel rupture due to decelerating injury or mesenteric laceration due to direct compression. Some times direct compression over the lumbar vertebra also causes small bowel perforation. Fixed segments like the duodenum, the duodeno-jejunal flexure, the proximal jejunum, and the terminal ileum are all impacted by decelerating injury.

In the case at hand, a localised blunt force was applied to the central abdomen, causing jejunal transection and an isolated rupture of the mid and small bowel. This injury was classified as grade 4 to grade 5 with hemoperitoneum on the small bowel injury scale. In all possibilities the hemoperitoneum could be from the bleeding from the cut ends of jejunum. Even though the distal feeding jejunostomy may be prudent it was not done in this case.

The diagnosis of small bowel injury is frequently delayed and is associated with significant morbidity and mortality due to the rarity of small bowel injury following a blunt abdominal trauma, the absence of peritoneal signs, and the sensitivity of radiological imaging.

In such cases, take a thorough medical history while paying close attention to the type of projectile, its speed, the mechanism of injury, and the precise anatomical site where force was applied. Patients who appeared to have just mild abdominal injuries may be particularly vulnerable to small bowel perforation. Such patients ought to have regular clinical reviews with an expert doctor, and they ought to have quick surgical intervention at the first indication of clinical decline.

I	Hematoma	Contusion/hematoma without devascularization
	Laceration	Partial wall thickness, no perforation
II	Laceration	Less than 50% of circumference
III	Laceration	Greater than 50% of circumference
IV	Laceration	Transection of small bowel
V	Laceration	Transection of small bowel with segmental tissue loss
	Vascular	Devascularized segment of small bowel

**Figure showing AAST classification of small bowel injury**

Multiple injuries and treatment delays of at least 24 hours are factors that affect death. Diagnostic challenges frequently arise because the patient is in pain and suffering, frequently has a reduced level of consciousness, and/or has related remote injuries that could divert the doctor's attention away from the abdomen. Delay in rupture is also possible, therefore surveillance should last for at least 48 to 72 hours with a reminder to come back right away if the pain reappears. Even though straight abdominal and chest radiographies have limited diagnostic utility, they may nevertheless be beneficial in 50% of cases.

It is recommended that all patients with multiple injuries undergo a diagnostic abdominal paracentesis, especially if a head injury has occurred and the patient is not fully aware. Negative results should trigger diagnostic peritoneal lavage, but in this instance, the patient was taken to the hospital right away for emergency surgery.

In the past, diagnostic peritoneal lavage was the method of choice for assessing blunt abdominal injuries, but CT imaging has increasingly taken its place. Early diagnosis and strong therapy are important if the mortality is to be decreased. Abdominal examination should be done carefully and frequently, and if clinical parameters worsen or do not improve within 12 to 18 hours, an immediate laparotomy should be performed. As a more contemporary form of care, laparoscopy is being employed for bowel diagnosis and repair.

**CONCLUSION:**

To conclude this is a case of jejunal transection followed by blunt abdominal trauma in road traffic accident brings forward the peculiarity of the case and delayed presentation and it also signifies the importance of clinical examination and history taking and thorough repeated examination which rises the suspicion.

**REFERENCES:**

1. Dauterive AH, Flancbaum L, Cox EF: Blunt intestinal injury: a modern day review. *Ann Surg*; 1985;201: 198-203.
2. Watts DD, Fakhry SM: Incidence of hollow viscus injury in blunt trauma: an analysis from 275,557 trauma admissions from the East multi-institutional trial. *J Trauma*; 2003;54: 289-94.
3. Mirvis SE, Gens DR, Shanmuganathan K: Rupture of the bowel after blunt abdominal trauma: diagnosis with CT. *Am J Roentgenol*; 1992; 159: 1217-1221.
4. Fakhry SM, Brownstein M, Watts DD, Baker CC, Oller D: Relatively short diagnostic delays (<8 hours) produce morbidity and mortality in blunt small bowel injury: an analysis of time to operative intervention in 198 patients from a multicenter experience. *J Trauma*; 2000; 48: 408-414.
5. 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 admissions for the EAST multi-institutional HVI trial. *J Trauma*; 2003; 54: 295-306.
6. Fang JF, Chen RJ, Lin BC, Hsu YB, Kao JL, Kao YC, Chen MF: Small bowel perforation: is urgent surgery necessary? *J Trauma*; 1999; 47: 515-520.
7. Guarino J, Hassett Jr JM, Luchette FA: Small bowel injuries: mechanisms, patterns, and outcome. *J Trauma*; 1995; 39: 1076-80.
8. Mathonnet M, Peyrou P, Gainant A, Bouvier S, Cubertafond P: Role of laparoscopy in blunt perforations of the small bowel. *Surg Endosc*; 2003; 17: 641-645.
9. Neugerbauer H, Wallenboeck E, Hungerfort M: Seventy cases of injuries of the small intestine caused by blunt abdominal trauma: a retrospective study from 1970 to 1994. *J Trauma*; 1999; 46: 116-121.
10. Ma OJ, Kefer MP, Stevison KF, Mateer JR: Operative versus nonoperative management of blunt abdominal trauma: role of ultrasound-measured intraperitoneal fluid levels. *Am J Emergency Med*; 2001; 19: 284-286.
11. Fabian TC, Mangiante EC, White TJ, Patterson CR, Boldreghini S, Britt LG: A prospective study of 91 patients undergoing both computed tomography and peritoneal lavage following blunt abdominal trauma. *J Trauma*; 1986; 26: 602-8.
12. Gay SB, Siström LC: Computed tomographic evaluation of blunt abdominal trauma. *Radiol Clin North Am*; 1992; 153: 747-53.
13. Guarino J, Hassett JM, Luchette FA: Small bowel injuries: mechanisms, patterns and outcome. *J Trauma*; 1995; 39: 1076-1080.
14. Brasel KJ, Olson CJ, Stafford RE, Johnson TJ: Incidence and significance of free fluid on abdominal computed tomographic scan in blunt trauma. *J Trauma*; 1998; 44: 889-892.
15. Villavicencio RT, Aucar JA: Analysis of laparoscopy in trauma. *J Am Coll Surg*; 1999; 189: 11-20.