

## A Rare Case of Double Jejunal Transection after Blunt Abdominal Trauma

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### ABSTRACT

*The blunt abdominal trauma have become increasingly common in this era of speed and hurry. The machines now occupied position of master of man rather than man who was the master of machine. The speed, unwanted hurry, shortage of time leads to error of judgement while driving, hence all types of high momentum deceleration injuries occurs to human body including abdomen. The blunt trauma abdomen poses a formidable challenge to the modern science and particularly surgeon for managing multitude of solid organ, hollow visceral and other internal injuries.*

*The complete transection of gut is rare and extreme form of gut injury in blunt trauma of abdomen following usually high momentum deceleration injuries in vehicular traffic accidents. Blunt trauma abdomen may cause solid organ or hollow visceral injuries. The complete jejunum transection is very rare in blunt trauma abdomen. We report a case of double jejunal transection that occurred when speeding motor bike struck the road divider in a town lane.*

### INTRODUCTION

The complete jejunum transection is very rare in blunt abdominal trauma. The incidence of bowel

transection among patient with blunt abdominal trauma was 1.56%. We report a case of complete double jejunal transection that occurred when

speeding motor bike struck the road divider in a town lane. A 20 years old boy was admitted in surgical emergency with blunt trauma abdomen in a road side accident.

### CASE REPORT

A young male aged 20 years came to surgical emergency with multiple injuries suffered few hours back following a speeding motor bike which stuck a road divider leading to severe diffuse pain in the whole of abdomen even though no external injury mark was present over abdomen and diffuse swelling in left forearm.

On clinical examination patient had tenderness, guarding and rigidity in left hypochondrium and left iliac region. The movements of abdomen were restricted. No abdominal distension was seen and gut sounds were absent. The hemodynamic status was stable. There was high index of suspicion of intraperitoneal injuries. The erect plain x ray abdomen was normal. Ultrasonography of whole abdomen revealed free fluid in the peritoneal cavity. CECT abdomen showed poorly opacified bowel loops with only second part of duodenum opacified by oral contrast. Small amount of free intraperitoneal air, below left dome of diaphragm and in the peritoneal cavity of left side in between the gut loops. Free fluid seen in Morrison`s pouch and along anterior surface of liver. High attenuation free fluid is seen in the pelvis and in the inter loop region in lower abdomen suggestive of gut perforation. Site of perforation was not defined, with thickening of few loops of jejunum with fat stranding in surrounding area. Exploratory laparotomy was planned within

twelve hours after giving a trial of conservative management. Operative findings were (a) About 1.5 litres of haemorrhagic fluid suctioned out from peritoneal cavity.

(b) Double Jejunal transection was found with first complete transection about 15cm away from duodeno- jejunal junction. The second complete transection of jejunum was around about 14 cm distal to the first jejunal transection along with long mesenteric tears. Resection of transected jejunal segment (about 14cms) and end to end anastomosis of remaining ends of jejunum performed.

(c) Colonic perforation found in descending colon sealed by primary closure. Proximal diverting loop Ileostomy around 1.5 ft away from ileo caecal junction was made. His post operative recovery was uneventful and patient was discharged with ileostomy in satisfactory condition. His Ileostomy was closed after 10 wks. Patient recovered well after the two major surgeries.



Intraoperative Photograph : Showing the double transection of the jejunum.

## DISCUSSION

Mostly small bowel perforations after blunt trauma occur as a result of motor vehicle accidents, falls from height or direct hits often associated with multiple injuries.<sup>1</sup> In such cases, the mechanism of injury is usually mesenteric laceration due to direct compression or small bowel rupture due to high energy deceleration injury. This would typically affect fixed segments such as duodenum, duodeno-jejunal flexure<sup>2</sup>, proximal jejunum and terminal Ileum<sup>1</sup>. In the present case double complete transection of mid small bowel may have occurred due to application of a localised blunt force to the central abdomen, presumably by direct compression against the lumbar spine.

The most severe form of bowel injury is transection, which means the bowel loop loses its continuity completely. This type of injury rarely occurs and demands highest index of suspicion. The causes may be crushing of bowel between vertebral column and anterior abdominal wall, tangential tear of bowel by external force against fixed points of bowel or sudden increase in intraluminal pressure. The common sites of involvement are terminal Ileum, proximal jejunum, sigmoid colon, transverse colon, lastly duodenum and stomach. Double Jejunal transection is a very rare entity. The incidence of bowel transection is 1.5% in patients who suffer severe blunt abdominal trauma and require a laparotomy. Presently Multidetector CT is primary modality for evaluation of trauma related injury of bowel and solid organs in the abdomen. The CT signs specific for bowel transection are complete

cutoff sign ( transection of bowel loop), Janus sign (abnormal dual bowel wall enhancement, both increased and decreased), and fecal spillage. Besides these CT signs of bowel and mesenteric injury frequently noted in literature include hyper enhancing mucosa, intraperitoneal free air, bowel wall thickening, intramural gas, intraperitoneal fluid, retroperitoneal fluid, mesenteric extravasation, termination of mesenteric vessels, mesenteric vessel beading, focal mesenteric hematoma, and mesenteric infiltration.<sup>3</sup> The timely diagnosis of bowel and mesenteric injuries requiring operative repair depends exclusively on high index of suspicion of intra abdominal injuries, mode of injury and their early detection by the radiologist during CT examination, thereby reducing clinical observation period for intervention before frank onset of diffuse peritonitis. The time observation is not universally codified. Frick et al. have stated that delays up to 36 hours don't increase morbidity and mortality. Allen et al. and Robbs et al. disagree and stress that therapeutic delays of more than 24 hours are associated with increased mortality. If treatment of small bowel perforation is delayed, mortality rises dramatically from 5% to 65%.<sup>4-6</sup> Owing to the rarity of small bowel injury after blunt abdominal trauma, absence of peritoneal signs and insensitivity of radiological imaging, the diagnosis of small bowel perforation is often delayed and is associated with marked morbidity and mortality.<sup>7</sup> The present case highlights the importance of obtaining a thorough history, paying particular attention to the nature and momentum of the projectile, the mechanism of

injury and the exact anatomical site of the applied force. Patients sustaining apparently minor injuries to the abdomen may be at particular risk of small bowel perforation, such patients should be reviewed at frequent intervals and should undergo prompt surgical intervention at the earliest sign of clinical suspicion, supported by radiological evidence of hollow visceral injuries before diffuse clinical peritonitis sets in. In this case of double transection of proximal jejunum we preferred resection of the small segment of jejunum with single end to end gut anastomosis rather than two anastomosis separated by small distance for retaining normal gut functions. Thus active surgical management approach reduces morbidity and mortality.

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