

POST TRAUMATIC JEJUNOCOLIC FISTULA

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ABSTRACT

INTRODUCTION

Jejunocolic Fistula following a blunt trauma abdomen is a rare presentation. Lack of specific symptoms and signs make diagnosis difficult and challenging. We report a case of 31 years old man presented as spontaneous Jejunocolic Fistula following a blunt abdominal trauma. Proper radiological investigations and curative surgery must be the aim in managing this rare entity.

KEYWORDS

Blunt Injury Abdomen, Mesenteric Injury, Intestinal Obstruction, Jejunocolic Fistula.

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INTRODUCTION: Internal Fistula is defined as a communication between small bowel and some other organs or structures within peritoneal cavity.^[1] Enterointestinal fistula is a type of internal fistula that occurs when small intestine joins with either other segments of small intestine or colon.^[1] Enterointestinal Fistulas are usually caused by inflammatory conditions such as Crohn's disease. It can also be caused by foreign bodies, radiation, diverticulitis, and malignancy. Spontaneous enterointestinal fistula following a blunt trauma abdomen is very rare. This report describes a case of blunt injury abdomen causing Jejunocolic Fistula with associated subacute intestinal obstruction, first reported to our best of knowledge.

CASE REPORT: A 31 year old male presented to our hospital on third week of May, 2015 with complaints of intermittent abdominal pain for six months. Pain was mild initially, becoming more severe over past four months. For last two months following every meal, patient had upper abdominal distention with vomiting and forceful passage of loose stools after which distention reduced. History of loss of weight, about 20 kg in last 6 months. Six months back patient sustained a steering wheel injury over the abdomen for which he was admitted in a peripheral centre, diagnosed as subacute intestinal obstruction and managed conservatively and discharged. He was not a diabetic, not a hypertensive, no history of tuberculosis. On examination, patient was emaciated, malnourished BMI-12.8 Kg/m² with muscle wasting and bilateral pedal edema. Abdominal examination revealed upper abdominal distention and diffused mild abdominal tenderness. Digital rectal examination was normal.

Patient hospitalized and on investigation, White blood cells-17000 cells/mm³, haemoglobin-15mg/dl, PCV-42%, electrolyte imbalance [potassium-2.0, sodium 116, chloride-88, bicarbonate-26 meq/l], hypoproteinemia [total proteins -3.7, albumin-1.8, globulin-1.9g/l] were evident. Ultrasound abdomen showed focal distention of bowel loops in umbilical region, suggestive of ileal stricture with subacute intestinal obstruction. Contrast enhanced computed tomography of abdomen revealed dilated jejunal loops with rectal contrast entering into jejunal loop through a fistulous communication suggestive of jejunal stricture with Jejunosigmoid Fistula. Double contrast barium enema showed contrast leak into dilated jejunal loop suggestive of Jejunocolic Fistula. Colonoscopy was normal.

Patient's general condition improved with Nasogastric aspiration, IV fluids, Antibiotics, IV albumin and fresh frozen plasma. Patient planned for laparotomy.

Intra-operatively there was dense adhesions between small bowel loops, omentum and anterior peritoneal wall noted. Large mesenteric rent of about 15 cm extending upto the root of mesentery in the right iliac region with herniating bowel loops and appendix. Small bowel loops of about 70 cm were densely adherent to each other and with omentum which could not be separated from each other. Jejunum proximal to densely adherent loops was dilated to about 5 cm diameter. Fistulous communication was present between antimesenteric border of jejunum (80 cm from DJ flexure) and sigmoid colon of size 0.8cm in diameter. Peritoneal adhesions, herniated bowel loops and appendix released. Fistula tract along with adherent small bowel loops were resected. Primary closure of sigmoid rent done in two layers. Appendectomy performed. As there was disparity in lumen size between distended jejunum and collapsed distal ileum, end to side anastomosis done in two layers. Mesenteric rent closed. Abdomen closed in layers after placing a drain. Postoperative period uneventful. On follow up, patient gained 5 kgs over a period of two months.

POST OP HPE: Resected bowel mucosa shows extensive areas of ulceration and granulation, underlying wall shows

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congestion. Fistulous area shows fibrous tract lined by granulation with non specific dense acute and chronic inflammatory cell infiltrate. No evidence of inflammatory bowel disease, tuberculosis. Features were consistent with infected fistula.

DISCUSSION: The mechanism of mesenteric injury in blunt abdominal trauma involves compression and deceleration forces, which results in a spectrum of injuries that range from contusions, to tearing of the bowel wall, to shearing of the mesentery, to loss of vascular supply.^(2,3,4) Steering wheel injury favours jejunal mesentery due to its anatomical location in upper part of peritoneum. Jejunal arcades are one or two having long branches with relatively low fat deposits in the mesentery renders it easily vulnerable to damage in steering wheel injury.^(5,6)

Mesenteric injury can also present in a delayed manner between 5 to 8 weeks as bowel stenosis or adhesion formation.⁽⁷⁾ Mesenteric vascular injury may induce chronic ischemia of the corresponding segment of small bowel, inducing secondary thickening of the bowel wall and intestinal occlusion.^(8,9) Delayed diagnosis of patients leads to intestinal infarction and adhesive intestinal obstruction which requires bowel resection.

Most GI fistulas (75-85%) occur as a complication of abdominal surgery. However, 15-25% of fistulas evolve spontaneously and are usually the result of intra-abdominal inflammation or infection.^[10] Fistulas that develop spontaneously without any prior iatrogenic injuries are usually manifestations of underlying Crohn's or malignancy.^[11] Trauma has been reported as a rare cause of GI fistulas.^[10] Internal fistulas may not be suspected for sometime because symptoms maybe nonspecific, minimal or may mimic underlying disease process.^[1] Enteric fistulas follow due to inadequate blood supply to the bowel or in many situations distended or weakened small bowel due to delay in relieving partial or near total intestinal obstruction.^[12] Low resistance Enteroenteric Fistula allows luminal contents to bypass a significant proportion of small bowel resulting in significant malabsorption.⁽¹¹⁾ Colonization over growth of small intestine by colonic bacteria can occur with Enterocolic Fistula resulting in malabsorption and severe diarrhea. Enteroenteric Fistula has been documented as a case of chronic watery diarrhea.^[13]

Our patient also presented with nonspecific symptoms of intermittent abdominal pain, abdominal distention, vomiting, diarrhea, loss of weight, bilateral pedal edema. On evaluation, diagnosed as a case of post traumatic steer wheel injury Jejunocolic Fistula with severe malnutrition.

Due to blunt injury abdomen, patient had mesenteric rent with small bowel ischemia leading to stricture formation and infarction with interloop adhesions. Later presented as subacute intestinal obstruction and fistula formation. Hence patient developed recurrent vomiting, diarrhea, dehydration, electrolytes imbalance and hypoproteinemia.

In an Enteroenteric Fistula involving an adjacent normal organ [sigmoid colon], only diseased segment of small bowel and fistula tract should be resected and defect in normal organ should simply be closed. Most patients with

Ileosigmoid Fistula do not necessarily require resection of sigmoid colon because disease is usually confined to small bowel.^[10]

Hence for our patient, diseased small bowel segment with fistulous tract resected and sigmoid colon closed primarily.

KEY POINTS:

1. In a case of blunt injury abdomen, proper history with good clinical examination and periodic evaluation are necessary if the clinical picture does not fit into a particular diagnosis.
2. Mechanism of injury has a bearing on organs involved in a blunt injury abdomen.



Fig. 1: Thin emaciated patient with upper Abdominal distention and no previous scar



Fig. 2: CT showing fistulous tract

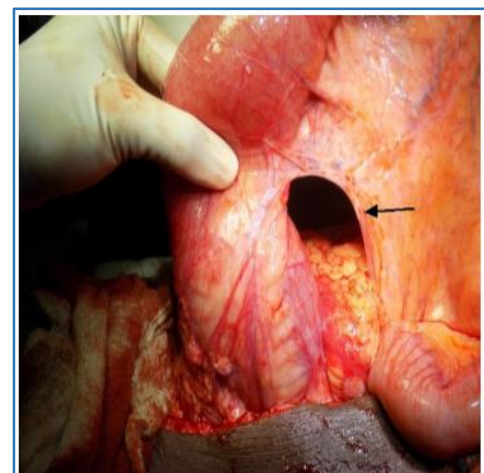


Fig. 3: Mesenteric rent

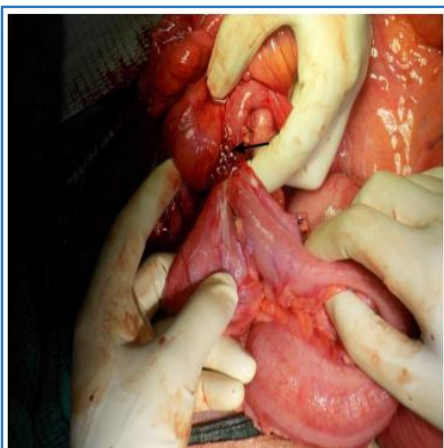


Fig. 4: Jejunosigmoid fistula



Fig. 5: Resected specimen

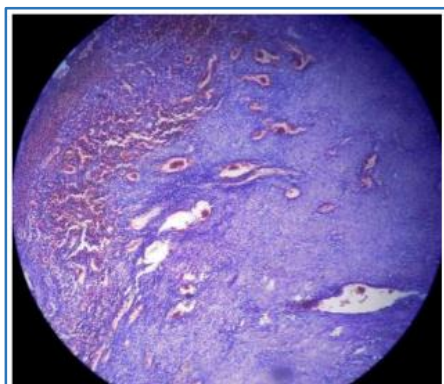


Fig. 6: fistula tract small bowel with congested vessels and cell infiltration

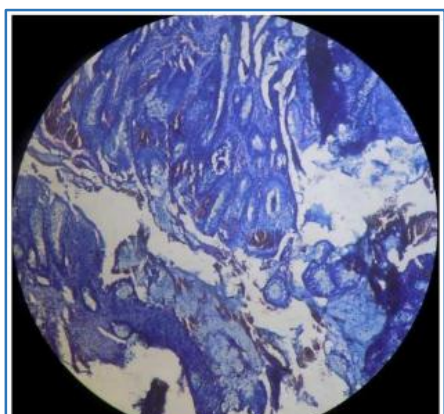


Fig. 7: Sigmoid fistula tract with granulation tissue

REFERENCES:

1. Michael S. Nussbaum, David R. Fisher, Shackelford's Surgery of the alimentary tract 6th edition, Chapter 73: Gastric, duodenal and small intestinal fistula Pg. no. 2720, Philadelphia, Elsevier 2007.
2. Williams RD, Sargent FT. The mechanism of intestinal injury in trauma. *J Trauma* 1963;3:288-94.
3. Vance BM. Traumatic lesions of the intestine caused by non-penetrating blunt force. *Arch Surg* 1923;7:197-212.
4. Xeropotamos NS, Nousias VE, Ioannou HV, et al. Mesenteric injury after blunt abdominal trauma. *Eur J Surg*.
5. De Backer AI, De Schepper AM, Vaneerdeweg W, Pelckmans P. Intestinal stenosis from mesenteric injury after blunt abdominal trauma. *Eur Radiol*. 1999; 9(7): 1429-31.
6. Cox EF. Blunt abdominal trauma. A 5-year analysis of 870 patients requiring celiotomy. *Ann Surg*. 1984; 199(4):467-74.
7. Lau IV, Horsch JD, Viano DC, Andrzejak DV. Biomechanics of liver injury by steering wheel loading. *J Trauma*. 1987;27(3):225-35.
8. Nolan BW, Gabram SG, Schwartz RJ, Jacobs LM. Mesenteric injury from blunt abdominal trauma. *Am Surg*. 1995;61(6):501-6.
9. Maharaj D, Perry A, Ramdass M, Naraynsingh V. Late small bowel obstruction after blunt abdominal trauma. *Postgrad Med J*. 2003; 79(927):57-8.
10. Mahmoud N. Kulaylat, Memil T. Dayton., Sabiston textbook of surgery The biological basis of modern surgical practice Chapter 13. Surgical complications pg. no. 318, Philadelphia, Saunders Elsevier 2012. Shaun McKenzie, B. Mark Evers., Sabiston textbook of surgery The biological basis of modern surgical practice Chapter 50. Small intestine pg. no. 1270, Philadelphia, Saunders Elsevier 2012.
11. Ali Tavakkoli, Stanley W. Ashley, Michael J. Zimmer Schwartz's principles of surgery 10th edition Chapter 28: Small intestine pg. no. 1157, United states of America, McGraw-Hill Education, 2015.
12. Josef E. Fisher, Amy R. Evenson, Fischer's Mastery of Surgery 6th Edition, Chapter 146. Gastrointestinal-Cutaneous Fistulas pg. no. 1564, Philadelphia, Lippincott Williams and Wilkins, 2012.
13. Laurence R. Schiller, Joseph H. Sellin. Sleisenger and Fordtran's Gastrointestinal and Liver diseases Pathophysiology/Diagnosis/Management Chapter 16. Diarrhea Pg. no. 232, Philadelphia, Saunders Elsevier 2015.