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Case Report

Surgery Section

A Case of Mesenteric Border Intestinal Perforation- An Unusual and Unnoticed Site of Perforation

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ABSTRACT

Incisional hernia which if not repaired at the earliest might increase in size and eventually end up in complications like incarceration or strangulation. Perforation of the bowel loop in case of incarcerated or strangulated incisional hernia without any precipitating events like trauma is very rare. Intestinal perforation, if identified is a life-threatening condition that requires emergency surgical management. Perforation of the small bowel along its mesenteric border is a rare entity with only very few cases being reported. Authors hereby, present a case of a 55-year-old female with long standing incisional hernia who was diagnosed as an incarcerated incisional hernia after Computed Tomography (CT) and was proceeded with an exploratory laparotomy, which on further exploration revealed perforation of the incarcerated ileum along its mesenteric border for which resection and anastomosis was done.

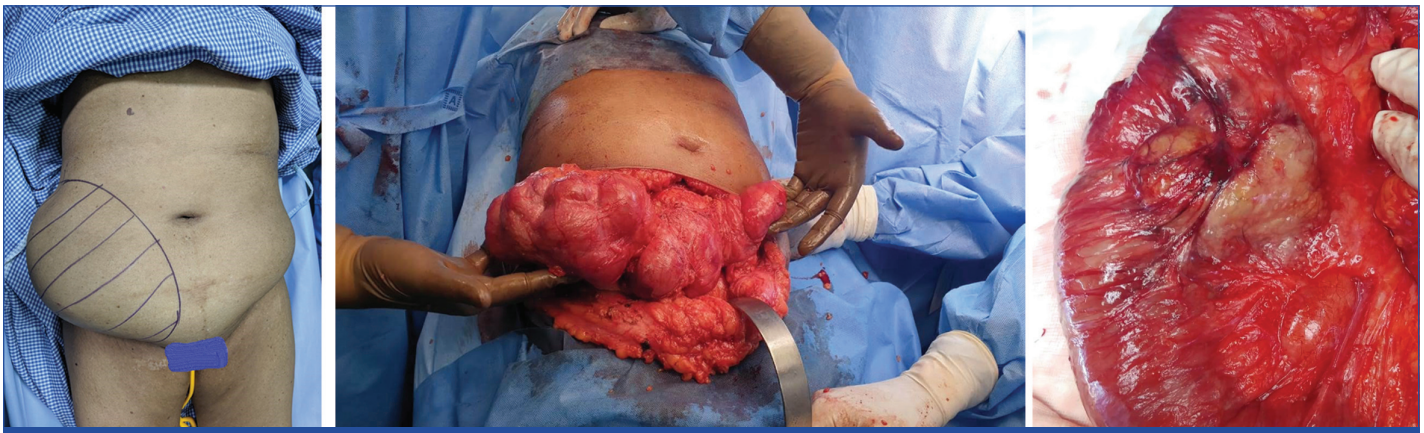
Keywords: Incarcerated hernia, Incisional hernia, Small bowel perforation

CASE REPORT

A 55-year-old female reported to the emergency room with complaints of abdominal distension and severe pain in abdomen for one day associated with vomiting. She also complaints of swelling over the right lower abdomen for the past six years which was initially small in size and progressively increased to attain the current size. The swelling was initially reducible, which became irreducible since three years. Patient was a known diabetic for past 13 year and on irregular medications. She had undergone total abdominal hysterectomy 10 years ago and open puerperal sterilisation 25 years ago. On general examination; she was conscious, well oriented, febrile with tachycardia (98/min) and blood pressure of 150/90 mmHg. On examination of abdomen, a large midline vertical scar in infraumblical region and a small transverse scar were seen in the suprapubic region. A swelling of size 12x10 cm was seen in the right lower abdomen occupying right lumbar region and right iliac fossae [Table/Fig-1]. The swelling was not reducible with severe tenderness on palpation. Other quadrants of abdomen were tense with diffuse tenderness and absent bowel sounds. On per-rectal examination, rectum was empty.

Her total White Blood Cell (WBC) counts were elevated (17,780 cells/mm^3). Ultrasound and CT of abdomen revealed a defect measuring 11.3 cm in right lumbar region with herniation of small bowel loops and its mesentery with transition point at mid ileal loops within the hernial sac causing prominent dilatation of jejunal loops. Small bowel faeces sign was noted within bowel loops in hernial sac. Extensive mesenteric fat stranding and fluid was noted within the hernial sac suggestive of strangulated abdominal wall hernia.

On diagnosis of strangulated incisional hernia, under general anaesthesia, exploration was done with a wide transverse infraumblical incision. A huge transverse irregular hernial sac of size 18×8 cm was seen in the infraumblical region more on the right-side than the left with obstructed intestinal loops as content [Table/Fig-2]. Hernial sac was opened, adhesiolysis and release of intestinal loops was done. Two hernial defects were noted in the infraumblical region. One in the right paramedian measuring 6x4 cm and another on the left paramedian measuring 5x4 cm split to each other by a 2 cm healthy rectus inbetween. Both the defects were made into one transversely by dividing the rectus bridge inbetween and thorough laparotomy was done. Upon marching the small bowel from duodenojejunal flexure to ileocaecal junction, a suspicious yellow coloured necrotic patch of 3 cm was seen in the mesenteric border of ileum as 30 cm away from ileocaecal junction [Table/Fig-3]. Further examination showed faeces from a 0.5 cm perforation along the mesenteric border of ileum [Table/Fig-4,5]. Resection and anastomosis of the perforated area was done. Thorough lavage was given and anatomical repair of the rectus sheath



[Table/Fig-1]: Preoperative picture illustrating a 12×10 cm incisional hernia in the right lumbar region; **[Table/Fig-2]:** An 18×8 cm transverse hernial sac in the infraumblical region more on the right side than the left with obstructed intestinal loops as content; **[Table/Fig-3]:** A suspicious yellow coloured necrotic patch of 3 cm was noted along the mesenteric border of ileum. (Images from left to right)

[Table/Fig-4]: Faeces in the necrotic patch leading to a 0.5 cm perforation along the mesenteric border of ileum; **[Table/Fig-5]:** Resected specimen showing 0.5 cm perforation along the mesenteric border of ileum via an artery forceps. (Images from left to right)

was done using 1-loop nylon. No prosthetic reinforcement was done. Subcutaneous non suction drain was placed and skin was closed in layers.

Patient improved well. Enteral feeds were started on postoperative day 4 after good bowel sounds and weredischarged by postoperative day 7 on tolerating oral diet and after drain tube was removed. Patient returned to normalcy with no evidence of recurrence of hernia on a follow-up of one year.

DISCUSSION

Abdominal wall hernias are the second leading cause of small bowel obstruction which contributes to 10-15% of cases. Prevalence of incisional hernias ranges between 0.5-13.9% following abdominal surgeries[1]. Most common risk factors of incisional hernia include obesity, old age, chronic pulmonary diseases, ascites, postoperative wound infection, type of suture material used, malnutrition and malignancy [2,3]. Risk of incarceration or strangulation is around 3.7% [4]. In cases of untreated incisional hernias, intestinal perforation can be a complication which is derived from the obstruction of the visceral structures which can cause strangulation [5].The common site of perforation is the antimesenteric border of the intestine. On the contrary, in the present case, the perforation of the small bowel in the strangulated hernial sac was noted along the mesenteric border which is rare. There are very few cases that have been reported with perforation of the bowel loop along the mesenteric border [6-8]. Gures N et al., published a case report of mesenteric side perforation of a strangulated sigmoid colon within a left inguinal hernia [6]. Louro J et al., published a case report of multiple small bowel perforations following a blunt trauma in which one of the perforations were seen along the mesenteric border of the small bowel [7]. Tudu MB et al., reported a case of single ileal perforation into the mesenteric border following blunt abdominal trauma [8]. Properly performed abdominal CT can be helpful in identifying the perforation of small bowel by the radiologist and can also aid in identification of a specific aetiology [9]. But in case of the perforation along the mesenteric border, there is an increased chance of missing the pathology. These mesenteric border perforations are very difficult to identify intraoperatively in the absence of peritonitis. They are almost always of concealed type as in the present case. The only way to identify these perforations are by careful examination of the mesenteric border of suspected bowel loop in strangulated hernia and via a thorough bowel walk on laparotomy in cases of acute abdomen.

CONCLUSION(S)

Mesenteric border perforations are extremely rare and mostly of concealed type which can be easily missed on all imaging modalities. Thorough examination of the entrapped bowel loop in a hernial sac on both sides (both mesenteric and anti-mesenteric) is the key to diagnosis in such cases. This case presentation serves us to emphasise the importance of a proper bowel walk from DJ flexure to ileocaecal junction in all cases of laparotomy in acuteabdomen with or without features of peritonitis.

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