



An Unusual Case of a Strangulated Right Inguinal Hernia Containing the Caecum Managed with Desarda's Repair

Authors

Sandeep Verma^{1*}, Vidit^{2*}, Dushyant³, Rituparna⁴, Bhavinder K Arora⁵

¹Senior Resident Department of General Surgery, PGIMS Rohtak

²Junior Resident Department of General Surgery, PGIMS Rohtak

³Junior Resident Department of General Surgery, PGIMS Rohtak

⁴Emergency medical officer, SPS Hospitals, Ludhiana

⁵Professor, Department of General Surgery, PGIMS Rohtak

*Corresponding Author

Sandeep Verma

Abstract

Groin hernias are most common hernias in abdominal wall hernias (75%). 95% of groin hernias, are from inguinal canal and remaining area femoral hernias. Two-thirds of the inguinal hernias are indirect and remaining are direct inguinal hernia. An indirect inguinal hernia is the most common, regardless of gender and in men, indirect hernias predominate over direct hernias at a ratio of 2:1. Direct hernias are uncommon. Strangulated external hernia is a relatively common serious surgical emergency. In these approximately 50% of cases involves small bowel obstruction and accounts for most of the deaths from this condition. Presenting a case of 64-year gentleman diagnosed with strangulated right inguinal hernia, managed with urgent surgery and underwent right hemicolectomy with Desarda's repair in view of gangrenous caecum. This case report underscores the clinical presentation and prompt surgical management of an unusual case of a strangulated right inguinal hernia containing the cecum, entailing both hernia repair and right hemicolectomy. The Desarda's technique was chosen as the hernia repair method which focuses on autologous tissue repair.

Keywords: Strangulated hernia, Desarda's repair, right hemicolectomy, ileo-transverse anastomosis, small bowel obstruction.

Introduction

Groin hernias are most common hernias in abdominal wall hernias (75%). 95% of groin hernias, are from inguinal canal and remaining area femoral hernias. Two-thirds of the inguinal hernias are indirect and remaining are direct inguinal hernia. An indirect inguinal hernia is the most common, regardless of gender and in men,

indirect hernias predominate over direct hernias at a ratio of 2:1. Direct hernias are uncommon^[1].

In emergency hernial repair, mortality rates are higher as compare to elective repair. As compare to inguinal hernias, femoral hernias are more common in older patients, there is also a higher incidence of femoral hernia in females, the male to female ratio being ~1:4^[2].

Strangulated external hernia is a relatively common serious surgical emergency. In these approximately 50% of cases involves small bowel obstruction and accounts for most of the deaths from this condition^[3].

Case Presentation

62-year gentleman came with chief complaint of swelling in right groin area for last 2 years which was reducible earlier but painful irreducible swelling associated with vomiting, abdominal distension and constipation for 2-3 days. No known comorbidities. On examination, patient was moderately built, afebrile, tachycardiac, blood

pressure was 130/90 millimetre of mercury. Chest was normal, per abdomen was distended, irreducible tender swelling in right groin area. Other hernial sites normal. Per rectal examination was normal. Patient immediately resuscitated with nasogastric tube (NG) insertion, Foley's catheterization, analgesics, antibiotics and intravenous fluid. Ultrasound abdomen revealed obstructed strangulated inguinal hernia with a gangrenous bowel segment (figure 1). Xray abdomen revealed multiple air fluid levels (figure 2).

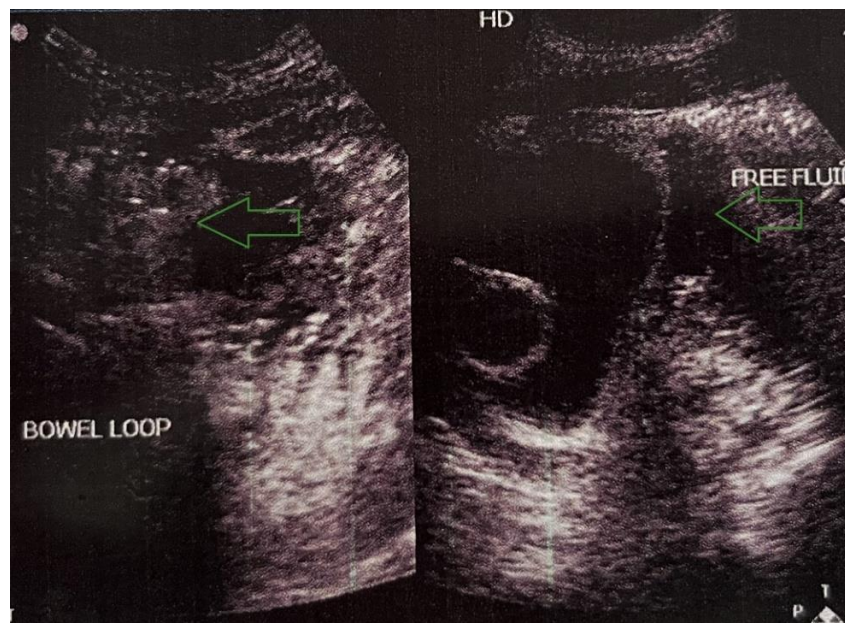


Figure 1: Ultrasound abdomen revealed herniation of bowel loop with free fluid



Figure 2: Xray abdomen showing multiple air fluids level revealing obstruction.

Patient immediately planned for reduction of content and hernial repair. Consent for urgent exploration, resection & anastomosis, temporary stoma was taken. He immediately shifted to emergency operation theatre, underwent inguinal exploration. Intraoperatively: hernial sac contained caecum, appendix which was necrosed, then immediately midline laparotomy was done. In view of necrosed caecum, right hemicolectomy was done with ligation of ileo-colic, right colic and right branch of middle colic artery was done.

Bowel continuity was achieved with side-to-side ileo-transverse anastomosis. Desarda's repair was done for right inguinal hernia as mesh was contraindicated in infected area. Midline laparotomy wound was closed in layers after insertion of intraabdominal drain. Subcutaneous drain was put right groin area. Postoperatively, patient was comfortable. Foley's catheter was removed on postoperative day (POD) 1, NG removed on POD-2. He passed flatus and stool on POD- 3 and gradually enteral feed was increased. Abdominal drain was removed on POD-4 and patient was discharged on POD-5. Patient recuperated well. Follow up remained uneventful.

Discussion

Inguinal hernias are defined as when abdominal contents protrude through a weakened area or defect in the inguinal canal which typically involve the herniation of small bowel or omentum, they can occasionally contain other abdominal organs, such as the cecum or bladder [4]. They are one of the most common surgical conditions encountered in clinical day to day practice. Strangulated Inguinal hernia is a surgical emergency, characterized by compromised blood supply to the herniated contents^[5]. In this case report, the presence of the cecum may be attributed to an enlarged cecum, long mobile cecum, or other anatomical variations within the right inguinal hernia is considered rare and represents a challenging clinical scenario. The strangulation of the cecum within the hernial sac poses an even greater risk due to its association

with the vermiform appendix, potentially leading to acute appendicitis and complications like ischemia, perforation, peritonitis, sepsis etc., which plays a major role for early diagnosis and prompt intervention^[6].

The clinical presentation of a patient with strangulated inguinal hernia often presents with symptoms such as severe abdominal pain, nausea, multiple episodes of vomiting, and tenderness, abdominal distension, and signs of bowel obstruction. Early presentation, diagnosis and prompt intervention are crucial for better prognosis, preventing further complications and reducing morbidity and mortality^[7].

Diagnosis of strangulated Inguinal hernia involving the cecum can be difficult due to the atypical presentation. Radiological modalities for diagnosis can be abdominal X-rays can reveal characteristic findings of intestinal obstruction, including multiple air-fluid levels suggestive of bowel distension and the presence of gas in the herniated loop of bowel^[5]. In this case report, the ultrasound findings were suggestive of obstructed strangulated inguinal hernia with a gangrenous bowel segment and Xray abdomen revealed air fluids level. Other imaging modalities, such as computed tomography (CT) scans, can help confirm the diagnosis and assess the extent of bowel ischemia^[1,4].

Strangulated inguinal hernias require prompt surgical intervention to release and reduce the compromised contents, maintain anatomical continuity and repair the hernia defect. The choice of surgical technique for strangulated inguinal hernia may vary such as the Shouldice or Lichtenstein techniques, which involve mesh placement^[8]. In this case report, Desarda's hernia repair technique was employed successfully which is a tissue-based technique that emphasizes the use of the external oblique aponeurosis to reinforce the weakened inguinal canal. This technique offers certain advantages in selected cases which may include reduced costs associated with the avoidance of mesh materials, a lower risk of

mesh-related complications, and the use of the patient's own tissue for hernia repair^[9].

In this case report, the decision to perform a right hemicolectomy along with Desarda's hernia repair is an unusual yet necessary step. The presence of the cecum in the strangulated Inguinal hernia which raises concerns about potential risk of bowel ischemia, perforation, gangrene, and acute appendicitis. A right hemicolectomy ensures the removal of the gangrenous segment of the bowel along with the cecum and vermiform appendix, preventing further complications and infection^[10]. After combining Desarda's repair and right hemicolectomy, anatomical continuity maintained by performing ileo-colic anastomosis and postoperative care is essential. The patient should be monitored for wound status, bowel function, enteral feeding and the development of associated complications. Follow-up examinations should be conducted to ensure the success of the surgical procedures and the patient's overall well-being.

Conclusion

This case report underscores the clinical presentation and prompt surgical management of an unusual case of a strangulated right inguinal hernia containing the cecum, entailing both hernia repair and right hemicolectomy. The Desarda's technique was chosen as the hernia repair method which focuses on autologous tissue repair. This case report underscores the importance of an integrated approach during preoperative assessment, and careful consideration of surgical management in complex hernia cases with unusual presentations in emergency.

Reference

1. Mohanty SK, Jena K, Mahapatra T, Dash JR, John A, Meher D. Obstructed direct inguinal hernia: A rare encounter. *Int J Case Rep Images* 2016;7(9):592–595.
2. A McIntosh, A Hutchinson, A Roberts, H Withers, Evidence-based management of groin hernia in primary care—a systematic review, *Family Practice*, Volume 17, Issue 5, October 2000, Pages 442–447, <https://doi.org/10.1093/fampra/17.5.442>
3. N J Andrews, Presentation and outcome of strangulated external hernia in a district general hospital, *British Journal of Surgery*, Volume 68, Issue 5, May 1981, Pages 329–332, <https://doi.org/10.1002/bjs.1800680513>
4. Kamat M, Singh N, Nattey K. A rare encounter of obstructed direct inguinal hernia of sliding variety. *Int J Surg Case Rep.* 2018; 49:209-214. doi: 10.1016/j.ijscr.2018.06.025. Epub 2018 Jun 28. PMID: 30031240; PMCID: PMC6076353.
5. Zaki H A, Shaban E E, Zahran A, et al. (December 24, 2021) A Rare Presentation of Small Bowel Obstruction Due to Obstructed Indirect Inguinal Hernia. *Cureus* 13(12): e20656. doi:10.7759/cureus.20656
6. Sudharshan M, Shaikh O, Panneerselvam R, Kumbhar U, Gaur NK. Caecal Volvulus Presenting as the Obstructed Right Inguinal Hernia. *Cureus.* 2021 Jul 8;13(7):e16264. doi: 10.7759/cureus.16264. PMID: 34373819; PMCID: PMC8346269.
7. Park S, Chen MZ. Strangulated inguino-scrotal hernia with caecal perforation. *ANZ J Surg.* 2022 Oct;92(10):2711-2712. doi: 10.1111/ans.18024. Epub 2022 Sep 10. PMID: 36086885.
8. Hernia Surge Group. International guidelines for groin hernia management. *Hernia.* 2018 Feb;22(1):1-165. doi: 10.1007/s10029-017-1668-x. Epub 2018 Jan 12. PMID: 29330835; PMCID: PMC5809582.
9. Ndong A, Tendeng JN, Diallo AC, Diaio ML, Diop S, Dia DA, Ma Nyemb PM, Konaté I. Is Desarda technique suitable to emergency inguinal hernia surgery? A systematic review and meta-analysis. *Ann Med Surg (Lond).* 2020 Dec 2; 60:664-

668. doi: 10.1016/j.amsu.2020.11.086.
PMID: 33312559; PMCID: PMC7721661.
10. Tebala GD, Yee J, Kola-Adejumo A.
Laparohernioscopic right colectomy for
bowel ischaemia within a strangulated
inguinal hernia. *Ann R Coll Surg Engl.*
2019 May;101(5):e125-e127. doi:
10.1308/rcsann.2019.0043. PMID:
31042432; PMCID: PMC6513374.