



# **An Obstructed Sliding Hernia Containing Ileum, Caecum and Ascending Colon as Contents: A Rare Case Report**

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## **Authors' contributions**

*This work was carried out in collaboration among all authors. Authors AS and RC are the operating surgeons. Author RC wrote the protocol and wrote the first draft of the manuscript. Authors AS and VY managed the analyses of the study. Author VY also managed the literature searches. All authors read and approved the final manuscript.*

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**Case Study**

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## **ABSTRACT**

Inguinal hernia repair is one of the most common surgeries performed overall. However, sliding variety is rare with an incidence of less than 5% of all inguinal hernia. Intestinal obstruction is extremely rare with an incidence of 12% of all sliding types of inguinal hernia. We report a case of 66-year-old male presenting with the history of inability to pass stools, flatus, and painful, large swelling in the right inguino-scrotal region. On right inguinal exploration, an obstructed direct inguinal hernia of sliding variety containing ileum, caecum, and ascending colon as contents with caecum and ascending colon forming the posterior wall of the sac was found. The contents were reduced; posterior wall defect closure along with meshplasty was performed. Direct inguinal hernia of sliding variety is a rare encounter and such a case presenting in obstruction, is an extremely rare condition of its kind. Care must be taken to prevent inadvertent injury to the bowel. The laparoscopic approach can be used nowadays, if the condition is diagnosed early.

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**Keywords:** Sliding hernia; obstruction; caecum; ascending colon; ileum.

## 1. INTRODUCTION

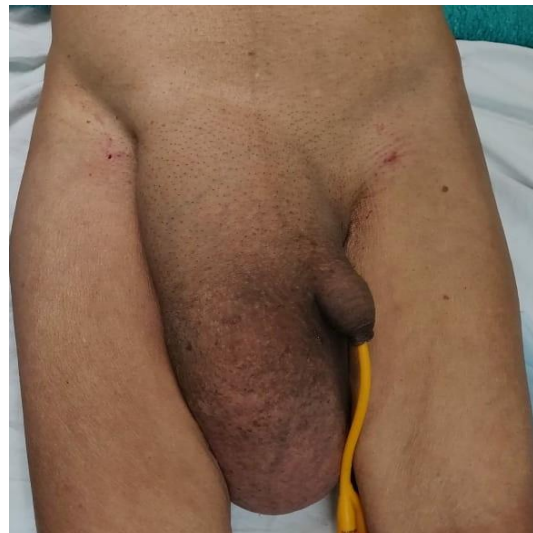
The protrusion of a retroperitoneal organ through an abdominal wall defect is termed as a sliding hernia. Incidence of such type of condition is less than 5% of all inguinal hernias [1]. The retroperitoneal organs may include the caecum, ascending colon, transverse colon, and sigmoid colon or the urinary bladder, uterus, ovaries, and fallopian tubes [2,3]. Patient with features of intestinal obstruction in a case of sliding type of inguinal hernia is extremely rare.

We report a case of obstructed, direct, right inguinal hernia in a 66-years-old patient containing ileum, caecum, and ascending colon as contents with caecum and ascending colon forming posterior wall of the sac.

## 2. CASE REPORT

A 66-years-old male presented to the emergency surgery with complaints of inability to pass stools, flatus, multiple episodes of vomiting, and pain, large swelling in the right inguino-scrotal region for the past two days. He had a history of right sided inguinal hernia for past five years. The patient was suffering with diabetes and hypertension for which he was under medications. In addition, he was a chronic smoker. Patient had no history of previous abdominal surgery or intervention. On clinical examination observed that the patient was dehydrated, having tachycardia with a pulse rate of 110 beats per minute, and blood pressure-136/88 mm of Hg. There was a large, oblong swelling in the right inguino-scrotal region having smooth surface, well-defined margins, irreducible with no cough impulse, and a dull note on percussion. The overlying skin was normal with no colour change [Fig. 1]. The left inguinal region was within normal limits. The abdomen was mildly distended with diffuse tenderness but no rigidity. There was no faecal staining, rectum was empty, and ballooning was present on rectal examination. Routine blood investigations were unremarkable. X-ray of the abdomen was suggestive of intestinal obstruction with dilated small bowel loops and visible air-fluid levels [Fig. 2]. Ultrasonography was suggestive of right inguinal hernia with bowel loops as contents. The bowel was dilated with oedematous walls, had fluid collection around, and had minimal peristaltic activity. On limited colour flow Doppler, the vascularity of the bowel was found intact. The condition was diagnosed as obstructed right

inguinal hernia, and the patient was taken up for emergency right inguinal exploration under spinal anaesthesia after resuscitation. Intra-operatively, a direct inguinal hernia sac was found having ileum, caecum and ascending colon along with their mesentery as contents. The caecum and ascending colon formed the posterior wall of the sac and were loosely attached to the retroperitoneum. The proximal jejunal loops were dilated and distal large bowel collapsed [Fig. 3]. The contents were reduced, defect in the posterior wall closed and meshplasty was done using a polypropylene mesh of size 15cm x 7.6cm. Post-operative recovery was uneventful. Patient was discharged on post-op day 4.



**Fig. 1. Large inguino-scrotal swelling on the right side**

## 3. DISCUSSION

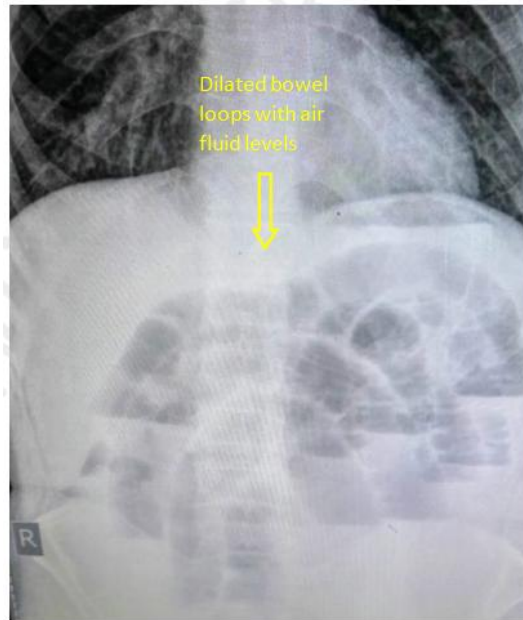
The protrusion of a retroperitoneal organ through a defective abdominal wall in the inguinal region is termed as sliding inguinal hernia. The incidence reported by Ryan EA in 1956 was 6-8% of all types of hernia [4]. However, 4.7% and 3.4% incidence was reported by Patle NM in 2011 [1] and Komorowski ALin 2012 [5], respectively. There has been a decreasing trend in the incidence, most probably due to early diagnosis and repair of the condition.

Inguinal hernia can be congenital or acquired. Increased abdominal pressure, prolonged straining during defecation, chronic constipation, benign prostatic hyperplasia, multiple

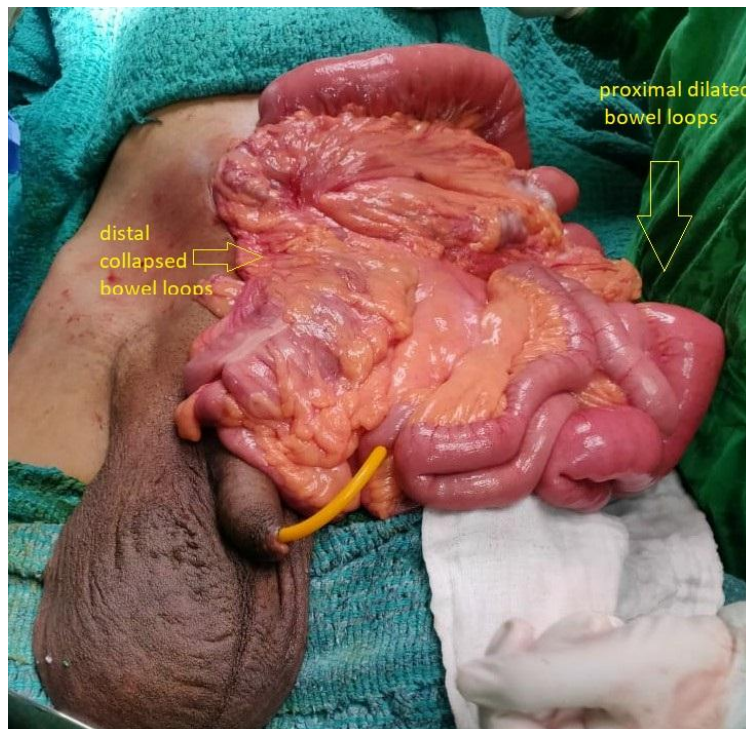
pregnancies, obesity, smoking, connective tissue disorder, and advancing age are some of the well-known risk factors [6,7]. Sliding hernia tends to occur in elderly patients with a long history of swelling in the inguinal region. The average age of patients with sliding hernia was 60 years in the study by Ryan EA [4]. Patle NM reported an average age of 63 years whereas, Komorowski AL reported 70 years. The mean age at which a patient with inguinal hernia presents was 53 years in a study carried out by Browne J in 2008 [8]. Thus, sliding hernia occurs in patients who have delayed their surgery due to some reason. In our case also, the patient was aged 66 years and had a long history of swelling in the inguinal region. The percentage of sliding hernia reporting with a complication was just 12% in the study by Patle NM [1]. However, this data could not be ascertained in other studies as they involved only elective inguinal hernia. In our case, the patient presented to us with features of small bowel obstruction.

In 2002, Robert Bendavid classified the sliding hernias into three types based on the relation of the retroperitoneal organ that has protruded to the hernial sac [9]. Table 1 depicts the three types of sliding hernia.

In our case, the patient had type 1 sliding hernia according to the Bendavid classification.



**Fig. 2. X-ray of abdomen suggestive of small bowel obstruction**



**Fig. 3. Ileum, caecum and ascending colon as contents of hernial sac with dilated proximal and collapsed distal bowel loops**

**Table 1. Bendavid classification of sliding hernia**

Type 1	Any hernia in which the retroperitoneal organ forms a part of the sac.
Type 2	Any hernia containing the retroperitoneal viscus and its mesentery- the mesentery forms a part of the sac.
Type 3	The retroperitoneal organ protrudes out of the defect and the peritoneal sac is very small or even absent.

The sliding hernia has always been considered difficult to operate as a part of the sac is formed by the retroperitoneal organ. There is always a risk of injury to the organ while opening the sac. They have a significant rate of recurrence and complications [10] as most of them are discovered intra-operatively [11]. It is difficult to diagnose sliding hernia pre-operatively as there are no specific signs and symptoms. In our case also, the sliding hernia was discovered intra-operatively. Meticulous dissection was done while opening the sac. A direct inguinal hernia sac was found having ileum, caecum, and ascending colon along with their mesentery as contents. The caecum and ascending colon formed the posterior wall of the sac and were loosely attached to the retroperitoneum. The proximal jejunal loops were dilated and distal large bowel collapsed [Fig. 3]. The contents were reduced, defect in the posterior wall was closed and meshplasty was done. In our experience, the use of mesh to provide tension-free repair and to reinforce the posterior wall in such cases is an absolute necessity to prevent a recurrence.

Case reports with a preoperative diagnosis of sliding hernia have been described [12]. If diagnosed preoperatively, a laparoscopic approach to repair the hernia can be considered with favourable outcome. Patle NM in a retrospective study concluded that the laparoscopic approach is feasible and safe with a good outcome. Laparoscopic transabdominal preperitoneal approach is preferred by the author [1].

#### 4. CONCLUSION

The sliding variety of an inguinal hernia is rare and such a case presenting with complications like obstruction, even rare of its kind. The surgeon must have a good knowledge and experience to identify all anatomical structures to prevent inadvertent injury to the organ.

#### CONSENT

As per international standard or university standard, patient's consent has been collected and preserved by the authors.

#### ETHICAL APPROVAL

It is not applicable.

#### COMPETING INTERESTS

Authors have declared that no competing interests exist.

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