

## Strangulated Transmesosigmoid Hernia: A Rare Cause of Acute Abdomen

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### ABSTRACT

Internal hernia involving the sigmoid mesocolon is extremely rare cause of intestinal obstruction. It is associated with early development of strangulation and gangrene. Therefore, high suspicion is necessary in the evaluation of such cases in order to prevent the related high morbidity and mortality. We present a case of an internal hernia occurring through a congenital defect in sigmoid mesocolon leading to strangulation of small bowel.

**Keywords:** Internal hernia, Strangulated hernia, Transmesosigmoid hernia.

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### INTRODUCTION

An internal hernia is defined as a protrusion of a viscous through a normal or abnormal pouch or opening in the abdominal cavity. Internal hernia through the sigmoid mesocolon is a rare clinical entity and accounts for approximately 5% of all internal hernias.<sup>1</sup> Transmesosigmoid hernia can be either acquired through a trauma or surgical procedure (iatrogenic internal abdominal herniations) or constitutional or related to congenital peritoneal defects.<sup>2</sup> In contrast to other types of sigmoid mesocolon hernias, transmesosigmoid hernia is usually associated with a significantly long intestinal loop herniation through the defect in mesocolon and have tendency to strangulate early.<sup>4,5</sup> Prompt surgical intervention is thus generally warranted in patients with suspected transmesosigmoid hernia.

### CASE REPORT

A 63-year-old male patient presented acutely with history of abdominal pain for the last 1 day with vomiting and abdominal distention. He had no previous history of abdominal surgery. On clinical examination, patient was dehydrated, pulse rate was 110/min (feeble), blood pressure 80/60 mm Hg, respiratory rate 36/min and decreased urine output of 15 ml/hr. Abdominal examination revealed gross distention, generalized tenderness, guarding, bowel sounds were absent and digital rectal examination was insignificant. Laboratory investigations were; hemoglobin: 11.1 gm/dl,

leukocytosis of 13,200/cu mm, serum creatinine 1.1 mg/dl and serum sodium 134 mg/dl, potassium 2.1 mg/dl. On plain X-ray abdomen standing, there were dilated small bowel loops with multiple air fluid levels with no gas under diaphragm. On abdominal ultrasonography, free fluid in peritoneal cavity with dilated bowel loops was found. The patient was resuscitated with intravenous fluids and nasogastric tube was inserted. Thereafter, decision was made to perform emergency exploratory laparotomy in view of possibility of bowel obstruction with septicemic shock. Intraoperative finding was of a gangrenous small bowel loop of 50 cm in length and 10 cm proximal to ileocecal junction herniating through an abnormal defect of size 4 × 2 cm in sigmoid mesocolon (Fig. 1). Both proximal and distal bowel loops were dilated and edematous with presence of hemorrhagic free fluid in peritoneal cavity. After manual reduction of hernia, gangrenous bowel loop (Fig. 2) was resected followed by end to end anastomosis. Mesosigmoid defect (Fig. 3) was closed. Patient was kept on ventilator support for initial 24 hours and later on patient recovered smoothly without any complication.

### DISCUSSION

Congenital internal hernias of the sigmoid mesentery are divided into three categories: intersigmoid, intramesosigmoid and transmesosigmoid.<sup>1</sup> Transmesosigmoid hernias occur when a loop of small bowel passes through a defect in the sigmoid mesentery. This type of hernia involves the two layers of the mesentery and does not have a

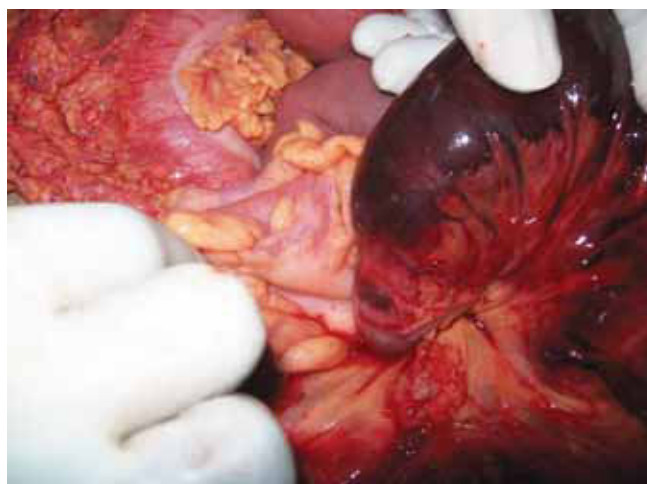
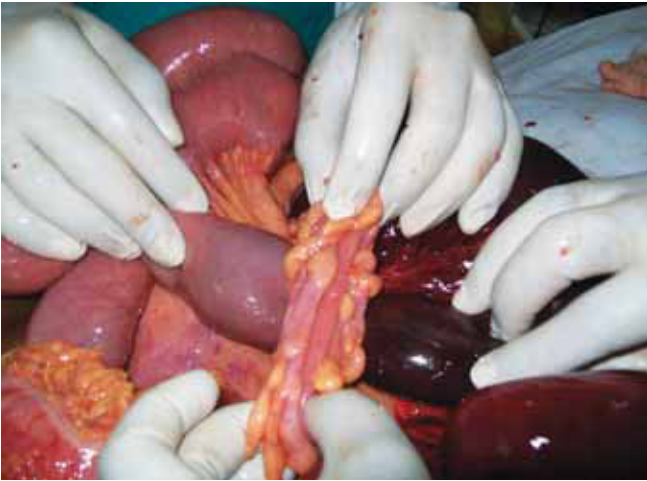
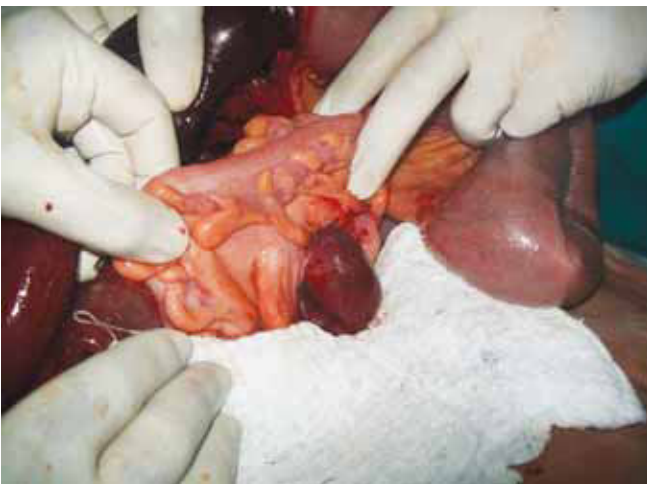


Fig. 1: Intraoperative finding of sigmoid mesocolon



**Fig. 2:** Gangrenous bowel loop



**Fig. 3:** Closing of mesosigmoid defects

hernial sac. Intersigmoid hernia arises in the congenital fossa located in the attachment of the lateral aspect of the sigmoid mesocolon to the posterior abdominal wall. The intrasigmoid hernia occurs when the defect in the sigmoid mesocolon affects only the left leaf of the peritoneum and the hernia sac lies within the sigmoid mesocolon itself.<sup>6,7</sup> No clear radiographic sign can distinguish among the three types of intersigmoid hernias and no precise radiologic differentiation is required because surgical exploration is mandatory in all the three types.<sup>2</sup> Several theories have been proposed to explain the underlying pathophysiology of this defect in sigmoid mesocolon. It has been suggested that the mesenteric defect is due to partial regression of the dorsal mesentery or due to inadequate vascularization of the enlarging mesentery during fetal development.<sup>2</sup> Alternatively, the mesentery can be torn following abdominal trauma.<sup>3</sup> In cases of transmesosigmoid hernias, patients tend to present with abdominal pain and signs of small bowel obstruction.<sup>8,9</sup> Though, making a preoperative diagnosis of an internal

hernia can be difficult, radiological investigations such as computed tomography (CT) of the abdomen can be helpful. The CT appearances indicative of internal herniation consist of medial displacement of the colon by herniated intestinal loops and bird-beak appearances of the afferent and efferent intestinal segments. It has been suggested that such a bird-beak appearance in the pelvis that is centered toward the medial side in a patient with intestinal obstruction is highly suggestive of a transmesosigmoid hernia.<sup>10</sup> The management of internal hernias requires reduction of the hernia and repair of the defect by either a laparoscopic or open approach.

## CONCLUSION

The diagnosis of internal hernia remains a challenge for surgeons. Even though an internal hernia occurring through a defect in sigmoid mesocolon is very rare, it must be included in the differential diagnosis of patients with intestinal obstruction. Early suspicion and diagnosis followed by urgent surgical exploration is necessary to avert related complications.

## REFERENCES

1. Benson JR, Killen DA. Internal hernias involving the sigmoid mesocolon. *Ann Surg* 1964 Mar;159(3):382-384.
2. Janin Y, Stone AM, Wise L. Mesenteric hernia. *Surg Gynecology Obstetric* 1980 May;150(5):747-754.
3. Kuga T, Taniguchi S, Inoue T, Zempo N, Esato K. The occurrence of a strangulated ileus due to a traumatic transmesenteric hernia: report of a case. *Surgery Today* 2000;30(6):548-550.
4. Bircher MD, Stuart AE. Internal herniation involving the sigmoid mesocolon. *Dis Colon Rectum* 1981 Jul-Aug;24(5):404-406.
5. Lyngdor P, Engdahl E. Sigmoid mesocolic hernia. Case report. *Acta Chir Scand* 1988 Oct;154(10):609-610.
6. Yip AW, Tong KK, Choi TK. Mesenteric hernias through defects of the mesosigmoid. *Aust N Z J Surg* 1990 May;60(5):396-399.
7. Ghahremani GG. Internal abdominal hernia. *Surg Clin North Am* 1984 Apr;64(2):393-406.
8. Sasaki T, Sakai K, Fukumori D, Sato M, Ohmori H, Yamamoto F. Transmesosigmoid hernia: report of a case. *Surg Today* 2002;32(12):1096-1098.
9. Van der Mieren G, de Gheldere V, Vanclooster P. Transmesosigmoid hernia: report of a case and review of the literature. *Acta Chir Belg* 2005 Nov-Dec;105(6):653-655.
10. Yang MS, Yeh DM, Lin SS, Chang CC, Wu MM, Chao C, Tyan YS. Computed tomographic appearance of internal herniation through the sigmoid mesocolon. *J Chin Med Assoc* 2005 Apr;68(4):195-197.

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