

Internal Hernias Involving the Sigmoid Mesocolon*

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INTERNAL hernias account for only a small percentage of all instances of intestinal obstruction. Hernias which result from defects, or abnormalities of the sigmoid mesocolon are among the rarer types of internal hernia. Management of a patient who presented with intestinal obstruction due to a previously unreported variant of such internal hernias prompted this report.

Case Report

This 42-year-old woman was admitted to DeWitt Army Hospital on September 4, 1962, with a four day history of intermittent, cramping pain in the lower abdomen. This was associated with obstipation and slight abdominal distention, but without nausea or vomiting. There was no history of previous similar episodes of abdominal pain or prior abdominal operation.

Physical examination revealed the patient to be well developed, well nourished, and in no distress. Temperature was 37° C., pulse 88, and blood pressure 120/88. The abdomen was slightly distended, but soft without tenderness, spasm, or masses. No external hernia was present. Pelvic examination was normal. The remainder of the physical examination was unremarkable.

Laboratory examination revealed a hematocrit of 44 per cent and a white blood cell count of 8,000 (following hydration). Roentgenogram of the chest was normal. Flat and upright roentgenograms of the abdomen showed slight distention of two loops of small bowel with air-fluid levels. There was a small amount of colonic gas present.

The patient was given nothing by mouth and parenteral fluids were administered. There was subsidence of all symptoms and persistence of a good appetite. Bowel sounds were normal and abdominal examination remained essentially unchanged. X-ray of barium enema of the colon was

normal. Despite nasogastric suction, repeated abdominal roentgenograms showed progressive increase of the small bowel distention.

Exploratory laparotomy was performed on September 10, 1962. At operation, the colon and terminal ileum were found collapsed. Proximal small bowel was distended. Approximately 18 inches from the ileocecal valve, the ileum entered the ring of an internal hernia (Fig. 1c). The hernial ring was oval, 2 cm. in diameter, and situated in the left leaf of the mesosigmoid. The ileum passed anterior to the sigmoid colon to enter the defect where the small bowel was incarcerated. The ring of the sac was incised, releasing a 15 cm. segment of viable ileum. Examination of the hernial sac following reduction revealed that the ring of the sac was formed by the left peritoneal leaf of the mesosigmoid, immediately adjacent to the sigmoid colon. The hernial sac itself was contained within the mesosigmoid and extended caudally into the presacral space, posterior to and to the left of the upper rectum. The hernia did not involve the sciatic foramen. The hernial defect was repaired with interrupted silk sutures. An incidental appendectomy was performed. No other intra-abdominal abnormality was found.

The postoperative course was uneventful. The patient was discharged from the hospital on September 29, 1962. Her subsequent course has been uncomplicated.

Discussion

Internal hernias account for between 1 and 3 per cent of all instances of intestinal obstruction.^{2,7} The more frequently encountered internal hernias are those related to the paraduodenal fossae, the paracecal fossae, defects of the small bowel mesentery or transverse mesocolon, and the foramen of Winslow. Hernias involving the sigmoid mesocolon account for only about 5 per cent of all internal hernias,⁴ there

* Submitted for publication March 12, 1963.

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being only 33 cases reported prior to this presentation (Table 1).

Internal hernias involving the sigmoid mesocolon may be divided into three distinct categories. These may be designated as 1) intersigmoid; 2) transmesosigmoid; and 3) intramesosigmoid hernias, of which the intersigmoid variety constitutes the overwhelming majority of cases.

Intersigmoid Hernia. The title of intersigmoid hernia has been used to designate herniation into a congenital fossa, the intersigmoid fossa, situated at the attachment of the lateral aspect of the sigmoid mesocolon (Fig. 1a). This fossa is formed during the fusion of the left peritoneal surface of the sigmoid mesentery with the parietal peritoneum of the posterior abdominal wall, forming the so-called fascial fusion line of Toldt. The fossa is said to be present in from 50 to 75 per cent of all bodies.⁵ When large enough to be associated with herniation, a retroperitoneal sac is present with its orifice at the intersigmoid fossa. The mesosigmoid and its vessels are anterior to the hernia; the left ureter, psoas muscle, and iliac vessels lie immediately posterior.

Thirty cases of intersigmoid hernias have been reported from 1885 to the present time. Small intestine was incarcerated in an enlarged intersigmoid fossa in all cases

TABLE 1. *Internal Hernias Involving the Sigmoid Mesocolon*

Type	Operated	Mortality	Found at Autopsy	Total Cases
Intersigmoid	27	13	3	30
Transmesosigmoid	2	0	1	3
Intramesosigmoid	1*	0	0	1

* Case of present report.

except two, in which the sigmoid colon itself was the incarcerated viscus. Of the 27 cases which came to operation, only 14 survived. Three cases were autopsy findings; and in one of these, the hernia was an incidental finding.

Transmesosigmoid Hernia. The title of transmesosigmoid hernia has been used to describe incarceration of intestinal loops through an isolated, oval defect in the sigmoid mesocolon (Fig. 1b). No hernial sac is present in this condition. The developmental origin of this defect is uncertain, but is probably analogous to similar defects in the mesentery of the terminal ileum, as described by Treves.¹²

There have been only three cases of this condition reported,^{1, 9, 13} all of which presented with acute intestinal obstruction. The two patients who underwent operation recovered. The third case was diag-

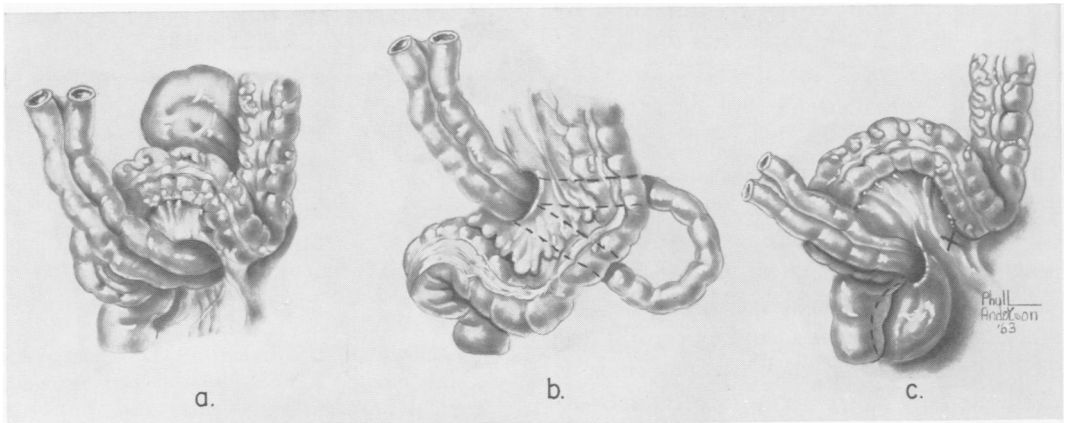


FIG. 1. Internal hernias involving the sigmoid mesocolon. a. Intersigmoid hernia; b. Transmesosigmoid hernia; c. Intramesosigmoid hernia (X = site of intersigmoid fossa).

nosed at autopsy. In two cases, terminal ileum was caught in the defect, and redundant sigmoid colon was incarcerated in the third patient.

Intramesosigmoid Hernia. The case report presented in this paper would seem to form a third variant of internal hernias involving the sigmoid mesocolon (Fig. 1c). Again, an apparently congenital, oval defect was found in the lateral peritoneal surface of the mesocolon. However, this defect was adjacent to the colon itself, unrelated to the intersigmoid fossa. A normal peritoneal reflection (fascial fusion line) was present at the base of the mesocolon. The location of the hernial orifice in juxtaposition to the sigmoid colon is similar to the reported cases of transmesosigmoid hernias; however, the hernial defect involved only one leaf (the left) of the mesocolon, the right leaf being intact. The location of the hernial sac within the mesosigmoid suggests the designation of "intramesosigmoid hernia." Report of no similar case could be found by review of the English literature.

The preoperative diagnosis of internal hernia is unusual, and it is even more difficult to predict the types of internal herniation present. However, the diagnosis should be considered in the absence of previous abdominal operation and external hernia. An important facet of the present case, and the one previously discussed by Harrison and Creech,⁵ was the absence of signs of peritoneal irritation in the presence of an inflamed loop of incarcerated bowel. This is apparently explained by the retroperitoneal and pelvic location of the hernia.

The basic tenet of management of acute intestinal obstruction caused by any of the intestinal hernias described is prompt laparotomy. Following reduction of the incarcerated viscus, the hernial orifice is obliterated by suture. The results of treatment by early operation are good.

Summary

A case of intramesosigmoid hernia is reported. This is a type of internal hernia contained within the sigmoid mesocolon, and had not previously been recorded. The types of internal hernia involving the mesentery of the sigmoid colon are reviewed, classified, and discussed.

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