

SPONTANEOUS EXPULSION OF SEQUESTERATED ILEUM

REPORT OF RECOVERY IN TWO ADULTS*

CLIFFORD D. BENSON, M.D., WILLIAM S. CARPENTER, M.D.
AND ROBERT D. SWEDENBERG, M.D.

DETROIT, MICHIGAN

FROM THE SURGICAL SERVICE OF HARPER HOSPITAL, DETROIT, MICHIGAN

ALTHOUGH SPONTANEOUS INTUSSUSCEPTION is seen rather frequently in infancy and childhood, its occurrence in adults in the absence of predisposing lesions, such as benign or malignant tumors or Meckel's diverticulum, is uncommon.

The possible course in intussusception includes spontaneous reduction, obstruction, strangulation, perforation and auto-anastomosis with passage of the sequestered intestine by rectum. Of these possibilities, the last is of the rarest occurrences. In 1000 cases of intussusception reported by Fitzwilliams, and in 400 reported by Perrin and Lindsay, not one case of spontaneous expulsion of the sequestered intussusceptum was found.³ Early diagnosis and appropriate surgical measures fortunately have resulted in only occasional cases of intussusception which run their full course. A review of the literature reveals only a few cases of spontaneous expulsion. Probably the earliest case on record was reported¹ in 1802, and concerned a man treated for external abdominal injury who recovered following the passage of a 14-inch segment of intestine. The other reports of spontaneous expulsion occurred in children or in adults following a surgical procedure that predisposed to the complication.^{3, 4, 6, 7}

The two cases reported here are unusual in that both occurred in adults; both were

cases of ileo-ileal intussusception; in both there were complicating factors that obscured the intestinal signs—in one a severe abdominal injury, in the other, a premature labor; in neither was any other disease a causative factor of the intussusception, and in neither was the diagnosis made before the segment of intestine was expelled by rectum.

Case 1.—Mrs. T. S., aged 30, a white woman, a multipara, was admitted to the obstetrical unit at 5:30 A.M. of July 11, 1950, during the 29th week of pregnancy. "Crampy" abdominal pain was reported, and the onset 24 hours previously of epigastric pain and vomiting. These symptoms were accompanied by distention of the abdomen without the passage of anything by rectum.

At examination, the general condition was good, with a blood pressure of 120 systolic, 75 diastolic, and pulse rate, 100. The abdomen was distended and tympanitic over the upper half and was tender throughout. Fetal heart tones were good and the patient was considered not to be in labor. A roentgenogram of the abdomen showed a few gas-filled loops in the right upper quadrant which were thought to be associated with either renal stone or cholelithiasis.

Labor began 14 hours after admission and 6 hours later, the patient delivered a 1 pound, 15 ounce living girl. Labor was considered normal. On that date the red blood count was 3.89 and the white blood count 11,000.

The day after delivery, the patient continued to vomit and a tender mass in the right upper quadrant of the abdomen was thought to be the gallbladder. There was only mild distention. Pain in the right upper quadrant was constant but not severe. Gastric suction was begun.

* Submitted for publication July, 1952.

There was gradual improvement, although the mass in the right upper quadrant persisted and remained tender. By the fifth postpartum day, the abdomen was soft; gas was expelled and the tube was removed. The temperature remained elevated at 101°F. and the pulse rate was about 100. By the tenth postpartum day the patient was ambulatory, took fluids well by mouth, but passed liquid stools. At no time was blood seen in the stool. The mass in the right upper quadrant still persisted but was less tender. On the thirteenth postpartum day the abdomen was soft and flat. The patient ate soft foods; there was soft fecal material in the rectum. Although the temperature was 100°F. and the mass was still present, the patient insisted on going home and was discharged against advice.

At home the patient ate soft foods. Her condition did not improve; fever continued, and there were occasional episodes of cramps and vomiting; bowel movements continued liquid and soft. On the fifth day at home, 18 days postpartum, the patient's husband reported that she had passed by rectum what appeared to be a loop of intestine. He had worked in a slaughter house at one time and identified the discharged object. There had been profuse diarrhea, not bloody, previous to passage of the intestine. When the patient was examined at home, the loop of intestine with bits of mesentery attached was presented for corroboration. It measured 112 cm. in length.

The patient was readmitted to the hospital. The mass in the right upper quadrant of the abdomen was now extremely tender and the skin over it was red and edematous. The abdomen was distended. The red blood count was 3.3 million, the white blood count 5,500; chlorides were 530 mg. per cent. That night an incision was made over the mass and an abscess cavity was drained. Loops of intestine formed the wall of the abscess cavity. The patient went into mild shock following this procedure, but recovered quickly. Soon after the abscess was drained, the drainage was seen to be small bowel content. The patient improved somewhat, although mild distention continued. She continued on a diet of soft foods.

On the twelfth day of the second admission, 1 month postpartum, the abdomen was explored. An intussusception had occurred about 18 inches proximal to the cecum; the lumen of the 2 loops had communicated through this abscess cavity at the site of the mass in the right upper quadrant. The mesentery, from which the extruded loop had become detached, was easily identifiable as part of the abscess wall.

There was no pus and the colon was intact throughout. The ends of the two loops were

excised along with the denuded mesentery, and an end-to-end anastomosis was performed.

The immediate postoperative course was stormy and complicated by profound shock and a septal coronary infarction. The abdomen remained flat. The patient passed gas on the second day. She recovered rapidly and was discharged 16 days after the resection. She has remained perfectly well for more than 18 months. The baby is also well.

Case 2.—A white man, age 57, was taken in an ambulance to the hospital and admitted on August 14, 1951, at 8:20 A. M. A refrigerator crate weighing approximately 2500 pounds had fallen against

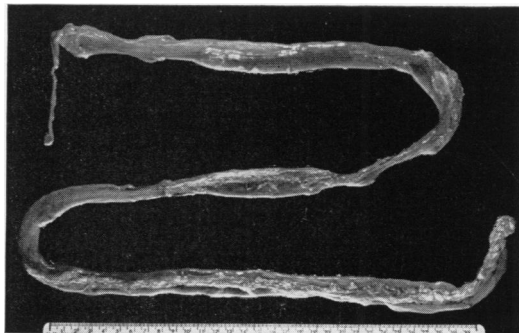


FIG. 1.—(Case 1) Expelled loop of intestine, 112 cm. long, with attached bits of mesentery.

him, striking the left lower costal cage and upper portion of the abdomen and pinning him against a similar crate at his back. He was conscious on admission and did not appear to be in acute distress. After admission, he had a normal bowel movement; there was also some emesis. Roentgenograms revealed fractured transverse processes of the right third, fourth, and fifth lumbar vertebrae. Chest and abdominal roentgenograms were otherwise normal.

On returning from the roentgen ray laboratory, the patient had a mild convulsion and appeared in shock, but responded promptly to 500 cc. of plasma. Physical examination at this time was essentially normal, except for abrasions and contusions seen over the upper portion of the abdomen on the left side and marked tenderness over the right third, fourth, and fifth lumbar vertebrae. The blood pressure was 120 systolic, 84 diastolic; the pulse rate 88; temperature 97°F.; respirations were 18.

Even under sedation the patient could not tolerate the Levin tube and pulled it out. He took fluids by mouth and passed gas freely by rectum; however, within 24 hours there was moderate distention and the temperature rose to 102.4°F. Supportive measures were used. August 16, abdom-

SPONTANEOUS EXPULSION OF SEQUESTERED ILEUM

inal distention was severe. A roentgenogram of the abdomen revealed small bowel distention.

The Miller-Abbott tube could never be passed beyond the pylorus despite repeated efforts. Rectal examination at this time revealed a fullness in the pelvis, which was thought to be bulging from a retroperitoneal hematoma, or to be caused by distended loops of small bowel. For the next 5 days the patient was in critical condition; effective decompression could not be accomplished. He was maintained in electrolyte balance. Occasional peristalsis could be heard, and sometimes flatus

vomited large amounts of undigested food and became distended, although he continued to have formed stools daily.

On September 11, after the morning bowel movement, a small piece of tissue was found protruding from the rectum. The tissue could not be removed manually. At 3:15 P.M., a segment of bowel and attached mesentery was passed with a partly formed stool. The bowel segment and mesentery measured 33 cm. The patient felt better; the abdomen was soft and flat and peristalsis was good.

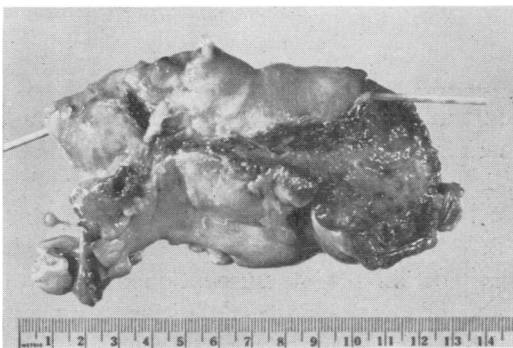


FIG. 2.—(Case 1) Intussusceptum. Extruded loops found communicating through an abscess cavity (wall of which was formed by mesentery from which extruded loops became detached) at site of mass in right upper quadrant of abdomen.

was passed by rectum. On August 21, peristalsis could be heard and in the morning, the tube was removed.

A small enema induced a large bowel movement of approximately 1000 cc. of liquid stool consisting of old foul-smelling bloody material. The patient continued to have from 10 to 12 liquid stools a day. He became confused and was irrational on August 24. He began taking fluids by mouth; stools were less frequent and of greater consistency. There was progressive clinical improvement. Diet was increased as tolerated. On periodic rectal examinations, the pelvic mass remained unchanged.

On August 26, the patient developed severe pain in the left leg. By morning the leg was cold and cyanotic from the toes to the calf, indicating an acute progressive ischemic thrombosis. The superficial femoral vein was exposed and opened. There was a free flow of blood without clots. Ligation was done prophylactically.

The patient continued to improve thereafter. A full diet was taken well and the temperature remained normal. Stools were formed. The patient was again ambulatory until September 9, when he

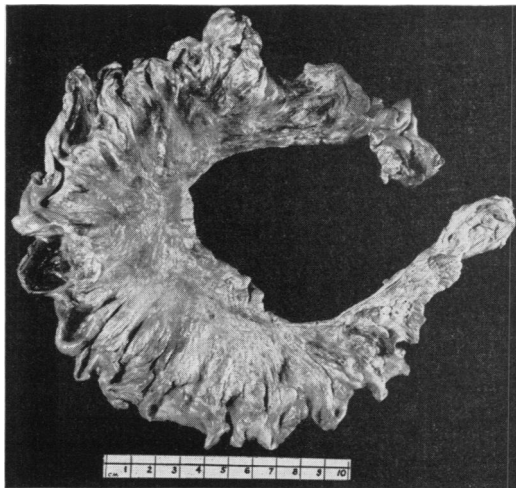


FIG. 3.—(Case 2) Segment of bowel and attached mesentery, measuring 33 cm. Passed with partly formed stool.

The clinical course improved and the patient was discharged on October 2. He was readmitted on October 8, with moderate abdominal distention. Physical examination revealed active peristalsis, and the pelvic mass could still be felt. On October 9, following a copious bowel movement, abdominal distention disappeared. A roentgenogram of the abdomen showed small bowel distention but no gas in the colon. A Miller-Abbott tube was successfully passed, and decompression was effected.

On October 15, on exploratory operation, a mass of small bowel was found in the right lower quadrant of the abdomen. There were 6 inches of terminal ileum anatomically attached to the cecum. Communicating with this by a side-to-end fistulous tract was the remaining portion of ileum which was dilated approximately 4 times its normal size. Where these ends joined, the mesentery was sharply denuded to its root. The ileum proximal to this auto-anastomotic site was resected for about 9 inches, and a side-to-side anastomosis was accomplished. This operative picture illustrated

the aftermath of the process that had taken place one month previously, that of an ileo-ileal intussusception with auto-enterotomy and auto-anastomosis. The postoperative course was relatively uneventful. A small fistula which developed at the upper end of the incision, closed spontaneously with continuous suction.

On November 2, the lower end of the incision was drained, and by November 11, the fistula was closed. The anastomosis was functioning well and the patient continued to gain weight and was discharged. He has remained well.

DISCUSSION

Although the exact sequence of events is difficult to state, the process, in the cases reported here, must have begun as a telescoping of one portion of the ileum into the other. Why this should occur in a normal adult ileum can only be surmised. We know from clinical experience that subserous hemorrhage may be the cause of acute intussusception complicating purpura. We believe the same mechanism may have occurred in the patient who had the intussusception following abdominal injury. At some period in the process, the serosal surface at the point of intussusception must have become at least partly sealed, although the occurrence of the abscess in the postpartum case would tend to show that there was some leak; nevertheless, generalized peritonitis did not take place. Necrosis of the middle layer must have happened first and the inner layer later, in order to have allowed the sequestrum to be expelled, serosa outermost.

The mechanism of this occurrence was commented on at some length by Treves⁸ as long ago as 1901. Even before the intestine sloughed, there must have been perforation of the intussusceptum, so that intestinal content was passing through; otherwise the patients would not have fared so well as they did.

The course in the two cases reported here would tend to demonstrate that if a loop of intestine is passed by rectum, an exploratory operation should be performed, because perforation or obstruction will occur eventually at the site of auto-anastomosis.

SUMMARY

1. Two cases of spontaneous expulsion of sequestered ileum are reported. In one patient, trauma was an etiologic factor.
2. In both patients, auto-anastomosis was inadequate, and definitive intestinal resection and anastomosis were required, emphasizing that when spontaneous expulsion of intestine has occurred, operation should not be delayed.
3. Both patients survived this unusual complication of intussusception and have remained well since definitive surgical intervention.

BIBLIOGRAPHY

- ¹ Bower, Jr.: *Am. Med.*, 2: 345, 1802.
- ² Cook, J.: Ileocolic Intussusception of Infancy Tending to Natural Cure. *Brit. J. Surg.*, 24: 612, 1937.
- ³ Finestone, E. O.: Intussusception of Excluded Distal Ileum with Spontaneous Expulsion per Anum of Sequestered Intussusceptum. *Surgery*, 21: 34, 1947.
- ⁴ Grant, R. N., *et al.*: Spontaneous Expulsion per Anum of Sequestered Transverse Colon. *Am. J. Surg.*, 82: 299, 1951.
- ⁵ Laufman, H., and H. Method: Role of Vascular Spasm in Recovery of Strangulated Intestine; Experimental Study. *Surg., Gynec. & Obst.*, 85: 675, 1947.
- ⁶ Mayo, C. W.: Spontaneous Expulsion of an Intussuscepted Bowel. *Proc. Staff. Meet., Mayo Clinic.*, 7: 345, 1932.
- ⁷ Thompson, L. D.: Intussusception Terminating in Spontaneous Elimination. *Am. J. Dis. Child.*, 34: 640, 1927.
- ⁸ Treves, Frederick: *Intestinal Obstruction*. London, 1901, Cassell & Co. Ltd.