

Laparoscopic Management of Sigmoidorectal Intussusception

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ABSTRACT

Adult intussusception is an uncommon entity. Surgical resection is required because of the high incidence of pathological lead point. We report a case of sigmoidorectal intussusception caused by a large tubulovillous adenoma. The patient underwent laparoscopic sigmoidectomy.

Key Words: Adult, Intussusception, Colonic, Laparoscopy.

INTRODUCTION

Intussusception transpires when proximal bowel segments and mesentery invaginate into adjacent distal segments similar to a collapsible telescope. It rarely occurs in adults, with only 2 to 3 cases per 1,000,000 people yearly.¹ Large bowel intussusception is less common than small bowel intussusception and is associated with a higher incidence of malignancy.^{1,2} Sigmoidorectal intussusception (SRI), however, is a rare variety with few cases reported in the literature. Despite the general consensus supporting surgical resections for adult intussusceptions, there remains controversy over whether intussusceptions should be reduced before resection.^{3,4}

We herein report on a 76-year-old lady with SRI due to large sigmoid tubulovillous adenoma.

CASE REPORT

A 76-year-old female patient presented with a 2-day history of left lower abdominal pain and blood-streaked loose stools. There was no history of weight loss, recent change in bowel function, or similar abdominal complaints in the past. The patient never had a screening colonoscopy. Abdominal examination was unremarkable; digital rectal examination revealed a large mass at the anterior rectal wall 2cm cephalic to the dentate line. All laboratory tests, including the tumor markers, were within normal limits. Emergent flexible sigmoidoscopy was attempted; however, the scope could not pass the partially obstructing lesion. Computed tomographic scan of the abdomen and pelvis showed a mass within the sigmoid colon and evidence of SRI (**Figures 1 and 2**).

The patient was scheduled for an emergent laparoscopic sigmoid colectomy. Antibiotic prophylaxis included a single intravenous dose of Cefazolin (1 g), and Metronidazole (500 mg) was given prior. Following induction of general anesthesia, all indicated monitoring lines (arterial pressure, pulse-oximetry, electrocardiogram, blood pressure cuff, and esophageal thermometer) were placed and secured. A warm-air upper-body-warming device was laid across the patient's chest and arms to help maintain normothermia. A urinary bladder catheter and an orogastric

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Figure 1. Axial image demonstrates the “target sign” of an intussusception. Normal rectal wall (thin white arrow) is seen surrounding normal sigmoid mucosa (thin black arrow) as well as the enhancing sigmoid lesion (thick white arrow). In the center of the “target” is mesenteric fat (thick black arrow). Again seen is the fluid between the rectal wall and sigmoid and within the sigmoid between the sigmoid mucosa and the mesenteric fat.



Figure 2. Coronal image demonstrates a normal rectal wall (thin white arrow), normal sigmoid mucosa (thin black arrow), the enhancing mucosal lesion of the sigmoid (thick white arrow) acting as the lead point of the intussusception, and mesenteric fat (thick black arrow). Fluid is present within the rectum seen between the sigmoid mucosa and the rectal wall. Fluid can also be seen between the sigmoid mucosa and the mesenteric fat.

suction tube were inserted. Lower extremity pneumatic compression devices were applied. The patient was placed in the modified lithotomy position, with hips and

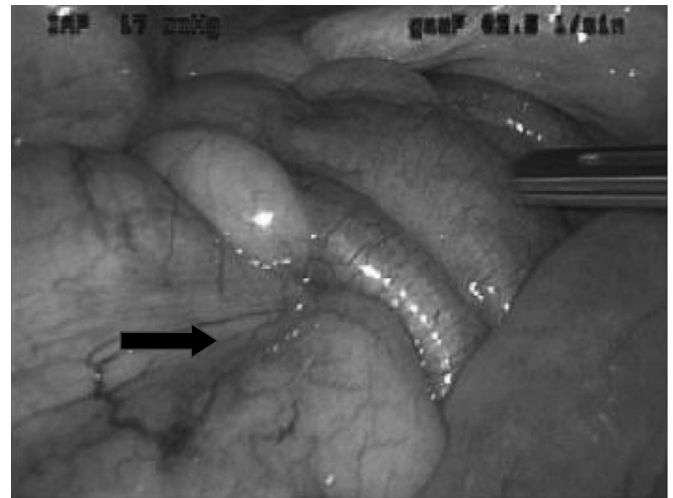


Figure 3. Intussusception of the proximal sigmoid colon (thick black arrow) into the rectosigmoid colon.

knees slightly flexed a maximum 15 degrees to facilitate intraoperative colonoscopy. The patient’s arms were tucked to her sides, and her shoulders were securely taped to the operating table to allow for Trendelenburg, right tilted, or left tilted positioning as needed to enhance laparoscopic visibility in the working area. Four trocars were used; a 5-mm supraumbilical trocar for telescope placement, 12-mm trocar midway between the umbilicus and right anterior superior iliac spine, 5-mm trocar 2 inches above the previous one, and 5-mm trocar in the left lower quadrant. Diagnostic laparoscopy confirmed the diagnosis of intussusception (**Figure 3**). Laparoscopic attempted reduction of the intussusception was unsuccessful; thus, a combined approach was adopted. The assistant manually pushed the rectal mass cephalad within the anal canal while the surgeon simultaneously pulled the intussuscepted colon segment. After several attempts, the intussusception was completely reduced. The reduced segment of the colon was inspected, and there was no evidence of bowel necrosis or demarcation. The inferior mesenteric vessels were divided using the Ligasure device. The sigmoid colon was resected, and primary stapled intracorporeal anastomosis was performed. A 5-cm incision was made in the left lower quadrant for specimen extraction. The blood loss was 50cc; operative time was 190 minutes. The patient was discharged home 4 days after surgery. Histopathology was consistent with a large tubulovillous adenoma (6.0 x 1.0 x 2.5 cm) with no evidence of malignancy.

DISCUSSION

Intussusception is most commonly encountered in children and infants with only 5% of cases occurring in adults.⁵ A pathological lead point is found in 70% to 90% of adult intussusceptions.¹ A primary or secondary malignant lesion is present in about 20% to 50% of cases.^{1,6} The high incidences of malignant lesions in adult cases of intussusceptions lead to the recommendation of en bloc resection without reduction for colonic intussusceptions.^{1,2}

In SRI, resection without reduction often results in extensive resection, ie, abdominoperineal resection or very low anterior resection with its attended morbidity. The limiting factor is direct involvement of the lower rectum which, if present, would justify an extensive resection. On the other hand, if no evidence exists of distal rectal involvement, initial reduction followed by segmental resection is needed, thus avoiding the risk of a colostomy. For patients with intussusceptions and an inflamed, ischemic, or friable bowel wall, attempted operative reduction is inadvisable, and one should proceed with resection.⁶ In SRI cases, extra skill is needed to reduce the intussuscepted segment of the colon without violating the lumen of the bowel, which would increase the risk of septic complications; more importantly, in malignant cases it would result in metastatic disease because of cancer cell dissemination.^{7,8}

Our search identified 2 other case reports of sigmoidorectal intussusception in which patients were treated with laparoscopic resection following reduction.^{3,9} The first case involved a 57-year-old male with a preoperative diagnosis of sigmoidorectal intussusception thought to be secondary to an adenomatous polyp of the sigmoid colon. He underwent successful laparoscopic anterior resection and anastomosis following reduction.³ After failure of initial laparoscopic reduction attempts, the authors utilized a technique similar to ours by pushing the distal segment cephalad with a lubricated sponge on a stick via the anus while simultaneously retracting the proximal portion manually through a 4-cm abdominal incision. The second case is a 56-year-old male with a sigmoidorectal intussusception from a fungating tumor 12cm from the anal verge diagnosed by colonoscopy, ultrasound, and MRI.⁹ The patient underwent laparoscopic reduction of the intussusception followed by laparoscopic sigmoid colectomy. The report, however, did not provide any technical details of the procedure.

We conclude that laparoscopic colectomy is safe and effective for select patients with emergent and urgent

conditions of the large bowel. It also should be stressed, however, that the steep learning curve for elective laparoscopic colectomy must be overcome before these procedures are attempted in the urgent or emergent setting. In SRI, a combined laparoscopic perineal attempted reduction followed by colon resection is justified if there is no evidence of bowel necrosis, inflammation, or tumor invasion.

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