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Case Report

Colonic Intussusception across the Splenic Flexure Due to a Submucosal Tumor in the Transverse Colon Successfully Treated by a Single-Incision Laparoscopic Surgery

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ABSTRACT

A 28-year-old man was referred from a local clinic to our hospital owing to bloody stool and left lower abdominal pain. Computed tomography demonstrated intussusception of the colon in the left lower quadrant which was reduced with a barium enema. A submucosal tumor approximately 6 cm in diameter was found with colonoscopy in the transverse colon and was suspected to be a lipoma. Although an elective operation was planned for the following week, the patient underwent emergency surgery owing to a recurrent intussusception with severe abdominal pain. Observation during single-incision laparoscopic surgery detected a colonic intussusception in the left lower abdomen. After the intussusception was reduced with a laparoscopic procedure, the tumor was found near the splenic flexure of the transverse colon. The splenic flexure was apart from the spleen owing to a loose ligamentous connection between the colon and the spleen which was thought to be the cause of colonic intussusception across the splenic flexure. The patient successfully underwent partial colectomy and reconstruction with a functional end-to-end anastomosis by means of single-incision laparoscopic surgery. (Jikeikai Med J 2015 ; 62 : 69-72)

Key words : invagination, transverse colon, submucoal tumor, single-incision laparoscopic surgery

INTRODUCTION

Intestinal intussusception is rare in adults[1,2]. In adults, the intussusceptum is typically the result of a mucosal, intramural, or extrinsic lead point that acts as a focal area of traction pulling the proximal portion of bowel into the peristalsing distal portion[3]. As the splenic flexure of the colon is fixed in the retroperitoneum by the ligament located between the spleen and the colon, invagination of the transverse colon in the left lower quadrant is extremely rare. Herein we report a patient diagnosed invagination of the transverse colon in the left lower quadrant, who successfully underwent laparoscopic partial colectomy for an invagination of the transverse colon across the splenic flexure by single-incision laparoscopic surgery (SILS).

CASE PRESENTATION

A 28-year-old man was referred from a local clinic to our hospital owing to bloody stool and left lower abdominal pain. Computed tomography demonstrated in the left lower quadrant of the abdomen a colonic intussusception (Fig.

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Fig. 1. Computed tomography demonstrated intussusception in the left lower quadrant (white arrow).

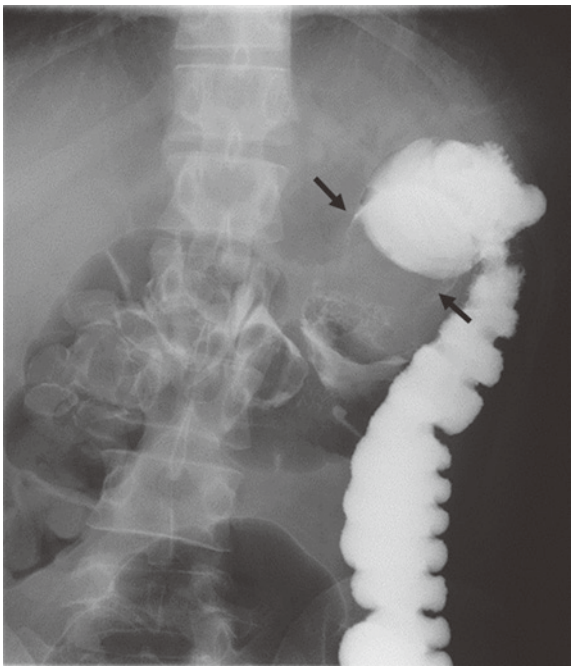

Fig. 2. The invaginated portion of the colon was reduced by barium enema. The tumor leading point of the invagination was located in the transverse colon (black arrows).

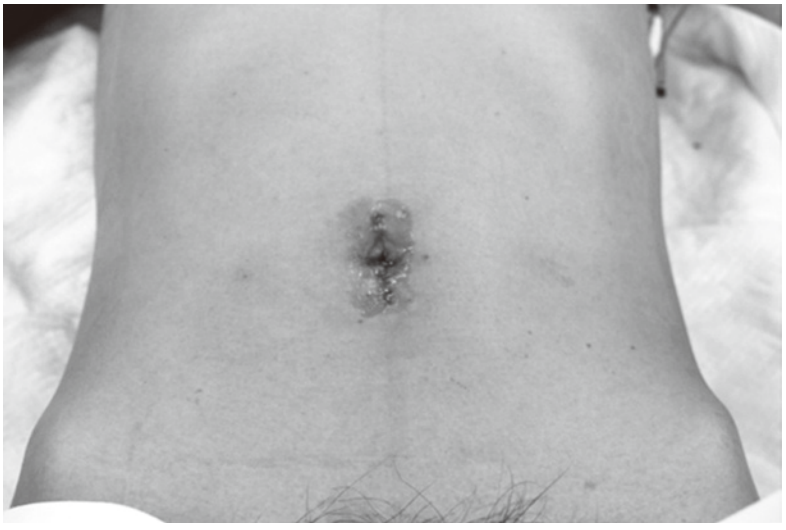

Fig. 3. Abdominal examination immediately after surgery showed the surgical procedure was completed by SILS.

1), which was reduced with a barium enema (Fig. 2). A submucosal tumor approximately 6 cm in diameter was found with colonoscopy in the transverse colon. A biopsy of the tumor was not performed during colonoscopy, but the tumor was suspected to be a lipoma. Although an elective operation was planned for the following week, recurrent colonic intussusception with severe abdominal pain developed and the patient underwent emergency surgery by SILS. During SILS, colonic intussusception was detected in the left lower abdomen. The thickening of the colonic wall was mild, and the proximal intestine was slightly dilated. When the oral side colonic wall of the intussusception was carefully pulled with a laparoscopic forceps, the invagination was easily reduced. After the manipulation,

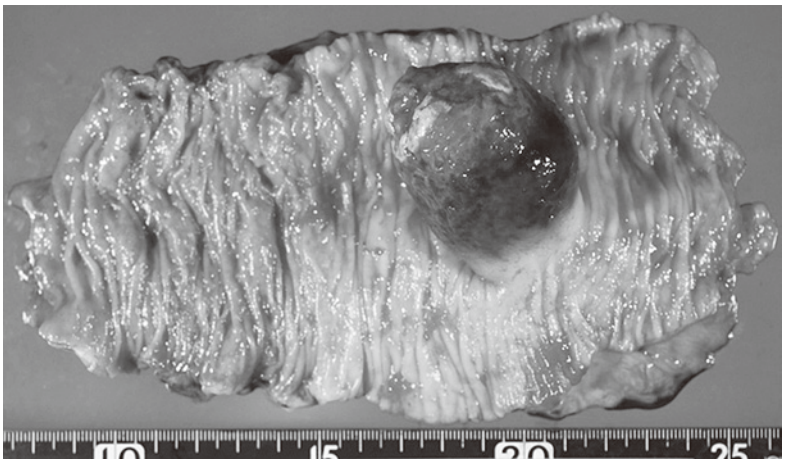

Fig. 4. Resected specimen demonstrated a submucosal tumor with a diameter of approximately 60 mm in the transverse colon

the tumor was found near the splenic flexure of the transverse colon. The splenic flexure was apart from the spleen owing to a loose ligamentous connection between the colon and the spleen which was thought to be the cause of colonic intussusception across the splenic flexure. The patient successfully underwent partial colectomy with reconstruction by means of a functional end-to-end anastomosis with SILS (Fig. 3). Pathological examination revealed the tumor, which measured 60 mm in diameter, to be a lipoma (Fig. 4). The patient had an uneventful postoperative course and was discharged 10 days after surgery.

Discussion

Intussusception is rare in adults, accounting for only 5% of all reported cases of intussusception and only 1% to 5% of all bowel obstructions in adults[1,2]. The mean age at presentation in adults is 50 years for both male and female patients[3-6]. In adult patients, the features of intussusception differ from those in children. The classic triad of intermittent abdominal pain, bloody stools and a palpable abdominal mass presented in children is sporadic in adults[7]. In adults, the intussusceptum is typically the result of a mucosal, intramural, or extrinsic lead point that acts as a focal area of traction pulling the proximal portion of bowel into the peristalsing distal portion[3].

In the present patient, the submucosal tumor in the transverse colon was a lead point for the invagination. Because the splenic flexure of the colon was not close to the spleen owing to the loose ligamentous attachment between the colon and the spleen, the invagination of the transverse colon was located in the left lower abdomen. To detect intussusception the best tool is computed tomography, which has an accuracy with experienced radiologists approaching 80%[3,4,6]. In the present case, computed tomography was a useful method of diagnosis.

We chose SILS as a surgical approach to identify the cause of intussusception ; because SILS was able to shorten the length of the resected specimen, the invagination was reduced. If the intussusception was resected en bloc without the invagination being reduced, intestinal reconstruction might have been difficult because of wide resection of the colon. If the proximal intestinal wall is mildly thickened, an attempt should be carefully made to reduce invagination by pulling the oral side of the colonic wall of an intussusception with a laparoscopic forceps.

To the best of our knowledge, the present report is the first of SILS for the treatment of intestinal intussusception in an adult. The SILS appears to be a safe and feasible alternative when used judiciously by experienced surgeons.

Authors have no conflicts of interest.

References

1. Begos DG, Sandor A, Modlin IM. The diagnosis and management of adult intussusception. Am J Surg. 1997 ; 173 : 88-94.
2. Eisen LK, Cunningham JD, Aufses AH. Intussusception in adults : institutional review. J Am Coll Surg. 1999 ; 188 : 390-5.

3. Cera SM. Intestinal intussusception. Clin Colon Rectal Surg. 2008 ; 21 : 106–13.
4. Azar T, Berger DL. Adult intussusception. Ann Surg. 1997 ; 226 : 134–8.
5. Zubaidi A, Al-Saif F, Silverman R. Adult intussusception : a retrospective review. Dis Colon Rectum. 2006 ; 49 : 1546–51.
6. Goh BK, Quah HM, Chow PK, Tan KY, Tay KH, Eu KW, et al. Predictive factors of malignancy in adults with intussusception. World J Surg. 2006 ; 30 : 1300–4.
7. Alvarez FA, Nicolás M, Goransky J, Vaccaro CA, Beskow A, Cavadas D. Ieocolic intussusception due to intestinal metastatic melanoma : case report and review of the literature. Int J Surg Case Rep. 2011 ; 2 : 118–21.