Case Report

Colorectal Intussusception Caused by Sigmoid Colon Cancer: A Case Report and Literature Review

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Key Words
Rectosigmoid intussusception;
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Adult intussusception, which accounts for less than 5% of all cases of intussusception, is a relatively rare clinical entity compared with its occurrence in children. Almost 90% of cases of adult intussusception are secondary to a pathological condition, and the clinical picture can be highly specific and challenging to obtain. Herein, we present a literature review and report a case of rare rectosigmoid intussusception in a 76-year-old male patient caused by sigmoid colon cancer with intermittent rectal prolapse.
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Intussusception, an urgent condition in which part of the intestine slides into an adjacent part of the intestine, is the most common cause of intestinal obstruction in children. By contrast, adults account for approximately 5% of all cases of intussusception and 1%-5% of cases of intestinal obstruction.[1,4] Lataste et al. reported six cases of this rare condition in 1975,[2] and a PubMed search in August 2020 yielded only 15 relevant publications. Adult intussusception is often caused by as inflammatory bowel disease or organic growths such as postoperative adhesions, Meckel's diverticulum, benign and malignant lesions, or metastatic neoplasms. Herein, we present a case of intussusception caused by sigmoid colon adenocarcinoma that was successfully treated with surgical intervention.

Case Report

A 76-year-old male patient with chronic obstructive pulmonary disease (COPD) and type 2 diabetes mellitus was admitted to our hospital for acute respi-

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ratory failure. Intermittent bloody discharge and a rectal prolapsed mass were noted. Bleeding internal hemorrhoids was suspected, but digital rectal examination revealed a palpable mass. A cross-sectional and longitudinal computerized tomography (CT) scan of the abdomen revealed sigmoid colon cancer (approximately 5.0 cm in size) with colorectal intussusception ((cT3N1Mb, stage IIIB)) (Figs. 1a and 1b, respectively).

Intraoperatively, a rectosigmoid colon tumor with colorectal intussusception was found (Fig. 2a), but no ischemic change in the bowel was noted after reduction (Fig. 2b). Lower anterior resection was performed uneventfully, and a cauliflower-like mass was found after the bowel was opened. The final pathological report specified adenocarcinoma grade 2 (pT3N1cM0, stage IIIB). After operation, the patient's general condition improved, except for the underlying COPD. The patient was transferred to a respiratory care ward upon confirmation of postoperative stability.

Discussion

Intestinal intussusception is rare in adults, accounting for 1%-5% of all mechanical bowel obstructions. In adults, intussusception is categorized according to the leading point of the intussusception as follows: the enteric type, which is limited to the small intestine; ileocolic type, in which the ileum passes the ileocolic segment but the appendix does not invaginate; ileocecal type, in which the ileocecal portion invaginates into the ascending colon; and colocolonic (including colorectal) type, which is limited to the colon and rectum without anal protrusion.[3] In addition, the leading point for adult intussusception is a benign or malignant lesion, and the most common etiology of colonic intussusception is colon cancer.[1,3-6] Therefore, treatment with surgical resection is often unavoidable, and the preoperative examination is crucial.

Adult intussusception has a similar clinical presentation to partial bowel obstruction, with symptoms such as intermittent abdominal pain, nausea, and vomiting.[1,3-10] However, patients with colonic intussusception often experience melena, weight loss, fever, or constipation or other nonspecific symptoms.[5] The patient in our case had a rectal mass and intermittent bloody stool but no other major symptoms, such as abdominal pain or nausea.

Diagnosis of adult intussusception can be made using various methods, including the examination of plain abdominal films, abdominal ultrasonography, upper gastrointestinal (GI) contrast series with barium enema, abdominal CT scans, and colonoscopy. Plain abdominal films can usually reveal signs of intestinal obstruction and may provide information regarding the obstruction site,[7] but an accurate preoperative diagnosis is difficult to make preoperatively.[3]

Upper GI contrast series may show intussusception with a stacked coin or coil-spring appearance. Barium enema examination may be specifically useful in patients with colocolic or ileocolic intussusception, which can characteristically resembles a cup-shaped filling defect, spiral, or coil-spring.[1,7] Although the rate of correct diagnosis exceeds 60%,[3,6] it is contraindicated in the presence of possible bowel perforation or ischemia.[1,8]

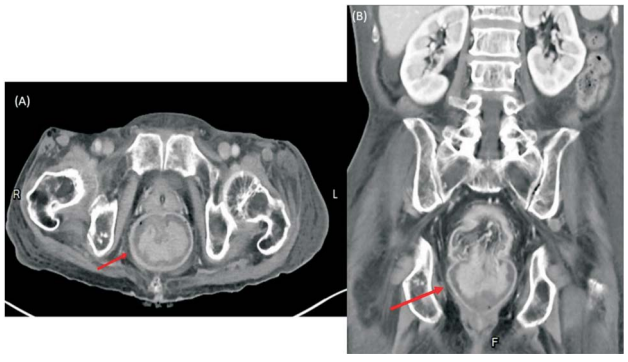

Fig. 1. Preoperative image: abdominal CT scan of the (a) cross section and (b) longitudinal section of a patient with sigmoid colon cancer with colorectal intussusception and proximal bowel dilatation.

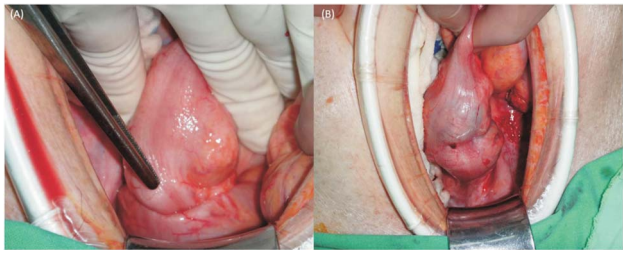

Fig. 2. (a) Sigmoid colon cancer with colorectal intussusception found during operation. (b) After reduction, no ischemic change was noted.

Abdominal ultrasonography has been used to evaluate suspected intussusception with relatively high accuracy of diagnosis.[6,7] The classic features include the target and doughnut and pseudokidney signs in transverse and longitudinal views, respectively.[1,6-8] However, gas-filled loops in the bowel can mask ultrasound images, and accuracy depends on the operator.[1,6,7]

Abdominal CT scanning, which is currently considered the most sensitive radiologic method for confirming intussusception, is often performed as a primary or secondary assessment of acute and subacute gastrointestinal symptoms of unclear origin and can aid in the diagnosis of intussusception in patients with atypical presentation or unreliable history and physical examination findings.[8]

Colonoscopy is a key method in the diagnosis and management of adult colonic or rectal intussusception with or without rectal prolapse,[9] especially in patients who present with signs and symptoms of large bowel obstruction. Colonoscopy provides direct visualization of intussusception and associated intraluminal lesions, which allows for biopsy and tissue diagnosis.[8] In addition, colonoscopy can also identify multiple cancers otherwise difficult to identify on a CT scan. Therefore, colonoscopy is highly recommended before surgery.[10]

In conclusion, colonic adult intussusception is a mechanical bowel obstruction caused by tumors with high malignant potency and low likelihood of spontaneous reduction and thus requires prompt and accurate diagnosis and surgical intervention.

References

1. Yakan S, Calıskan C, Makay O, et al. Intussusception in adults: clinical characteristics, diagnosis and operative strategies. *World J Gastroenterol* 2009;15:1985-9.
2. Lataste J, Albou JC, Boeuf A. Colo-anal invaginations in adults. *J Chir (Paris)* 1975;109:489-94.
3. Honjo H, Mike M, Kusanagi H, et al. Adult intussusception: a retrospective review. *World J Surg* 2015;39:134-8.
4. Hong KD, Kim J, Ji W, et al. Adult intussusception: a systematic review and meta-analysis. *Tech Coloproctol* 2019; 23:315-24.
5. Gollub MJ. Colonic intussusception: clinical and radiographic features. *AJR Am J Roentgenol* 2011;196:W580-5.
6. Kim JW, Lee BH, Park SG, et al. Factors predicting malignancy in adult intussusception: an experience in university-affiliated hospitals. *Asian J Surg* 2018;41:92-7.
7. Marinis A, Yiallourou A, Samanides L, et al. Intussusception of the bowel in adults: a review. *World J Gastroenterol* 2009; 15:407-11.
8. Takeuchi K, Tsuzuki Y, Ando T, et al. The diagnosis and treatment of adult intussusception. *J Clin Gastroenterol* 2003;36: 18-21.
9. Filiberto AC, Loftus TJ, Tan SA, et al. Sigmoido-rectal intussusception. *SAGE Open Med Case Rep* 2019;7:2050313 X19856242.
10. Subramaniam D, Culshaw N, Langlands F, et al. Intussusception in the elderly. *BMJ Case Rep* 2013;2013:bcr2012 006185.
11. Kaida S, Nishida J, Kishikawa H, Ichikawa H, Morishita T, Takayama S, Sato M, et al. A case of adult intussusceptions with multiple colon cancer. *Nihon Shokakibyo Gakkai Zasshi = The Japanese Journal of Gastro-enterology* 2010;107:77-83.

病歷報告

乙狀結腸癌引起的大腸直腸腸套疊之案例報告及文獻回顧

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摘要 成人也會發生腸套疊，但僅佔所有腸套疊病例的 5% 以下，是相對罕見的臨床疾病。本論文我們結合了文獻回顧並提出一位 76 歲男性患者具有乙狀結腸癌間歇性直腸脫垂引起罕見的乙狀結腸直腸腸套疊之病例。

介紹 參考 Lataste 等人在 1975 年報導的 6 個病例，我們於 2020 年 8 月進行 PubMed 搜索也僅獲得 15 篇相關文獻，顯示文獻中由乙狀結腸腺癌引起的腸套疊之病例報告相當罕見，我們也成功地通過外科手術治療此位病人。

病例報告 一名患有慢性阻塞性肺部疾病 (COPD) 和第二型糖尿病的 76 歲男性患者因急性呼吸衰竭入院，而被注意到有間歇性的出血性分泌物和直腸脫垂腫塊，起初懷疑是內痔出血，但經肛門指診時可觸及腫塊，進行腹部橫向及縱向切面的電腦斷層掃描 (CT) 後，其報告顯示可能為乙狀結腸癌 (大小約 5.0 厘米) 並伴隨著大腸直腸套疊 (cT3N1Mb，第 IIIB 期)。於手術中，進行復位後未見到腸缺血變化，之後順利地進行低前位切除術，而在打開腸道後發現類菜花腫塊，最後的病理報告結果為腺癌第三期 (pT3N1cM0，第 IIIB 期)。術後，患者除了潛在的 COPD 其總體狀況有所改善，確認術後穩定後，患者被轉移到呼吸病房。

關鍵詞 直腸乙狀結腸腸套疊、脫肛、乙狀結腸癌。