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Case Report

A case of a colo-colic intussusception secondary to adenocarcinoma of the sigmoid colon

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ABSTRACT

When a more proximal section of the bowel (intussusceptum) invaginates into the more distal bowel (intussuscipiens), it results in intussusception. Changes in intestinal peristalsis at the intraluminal lesion, which serves as a lead point for the intussusceptum, is assumed to be the mechanism. Adult cases of intestinal intussusception are uncommon; they make up about 1% of all bowel obstructions. We describe a case of a colo-colic intussusception caused by an adenocarcinoma of the sigmoid colon. The most frequent urgent condition in children is intussusception, although it is extremely uncommon in adults. It is challenging to make the diagnosis based only on the history and physical exam results. Since a malignant pathology typically serves as a lead point in adulthood, as opposed to childhood, treatment of this pathology still raises questions. Accurately identifying and comprehending relevant symptoms, signs, and imaging results is crucial for an adult intussusception's early diagnosis and proper treatment. It's not always obvious how to treat adult intussusception appropriately. Regarding the reduction prior to resection in sigmoido rectal intussusception cases, there is disagreement. A useful diagnostic marker of colorectal intussusception in bowel-within-bowel configuration cases is the target-like sign on CT images, which shows the bowel's layers duplicated to form concentric rings. Quick and precise diagnosis will be facilitated by a high index of suspicion combined with radiological investigation. A high degree of suspicion of a malignant etiology is important in cases of adult intussusception.

Keywords: Intussusception, Colo-colic intussusception, Colorectal malignancy, Lead point

INTRODUCTION

Adults rarely experience intussusception, despite it being a common condition in children. The etiology and clinical features of adult intussusception are different from those of pediatric intussusception. Enteric, ileocolic, ileocecal, and colic are the four categories used to categorize intussusceptions based on the intestinal tract involved. Unlike intussusception in children, adult intussusception is linked to cancerous lesions, especially in the large intestine as opposed to the small intestine. Adult patients rarely present with the standard clinical features of a triad comprising vomiting, abdominal pain, and blood passing through the rectum, making preoperative diagnosis and treatment challenging. An enteric intussusception was defined as an intussusception involving only the ileum or jejunum. Ileocolic intussusception: an intussusception involving both the colon and the ileum.[1] A sigmoido-rectal intussusception involved both the colon and the rectum, while a colocolic intussusception involved only the colon. An antegrade intussusception is a proximal colon segment that telescopes into the lumen of the adjacent distal segment. A retrograde intussusception was a distal colon segment

that telescoped into the adjacent proximal segment's lumen. We exclusively reviewed colonic surgery in our review, which also covers the best preoperative diagnosis and surgical management strategies. A subtype of intestinal intussusception called sigmoido-rectal intussusception happens when the rectum or distal sigmoid prolapse through the anal canal, forming an intussusceptum.

CASE REPORT

We present the case of an 84 years old gentleman who presented to our OPD with chief complaints of chronic constipation associated with per rectal bleeding and mucus discharge post defecation since, 1 month. It was associated with a sense of incomplete evacuation of bowels. He gave no history of abdominal pain, tenesmus, fever, nausea, vomiting, jaundice, loss of appetite or a significant weight loss. He was evaluated at a local hospital for the same where a sigmoidoscopy revealed an ulcer proliferative growth which bled on touch and located 20 cm from the anal verge, occluding the lumen of the sigmoid colon. A biopsy from the growth was suggestive of a Maltoma.

On examination, the abdomen was soft, non-tender without any palpable lump. A digital rectal examination revealed a firm mass about 7 cm from the anal verge. A Contrast Enhanced MRI of the pelvis showed an extensive colo-colic intussusception of the sigmoid colon extending upto the lower rectum with evidence of a focal, rounded, nodular enhancing lesion of 5.5×5 cm at the apex of the intussusception.

The sigmoid mesocolon was seen extending along the intussusception with prominent vasa recta without ischemic changes. No significant colonic obstruction was identified. The lead point was 2.4 cm proximal to the anorectal junction. The lesion showed intense heterogenous enhancement with lobulated margins on a post contrast scan. It showed mildly restricted diffusion with dark signals on a T2 weighted images suggestive of a malignant polypoidal lesion. The peri rectal fat planes were preserved.

A F18-FDG whole body PET CT revealed an FDG avid (SUV max- 30.84) focal nodular lesion measuring 4×3 cm in size at the apex of the intussusception. Diffuse FDG uptake was seen along the rectosigmoid walls adjacent to it. Mildly FDG avid (SUV mx 6.57) small left lower para-aortic and mesenteric lymph nodes were noted.

A left limited colonoscopy showed a large ulcer proliferative pedunculated growth extending proximally at 7-8 cm from the anal verge. The scope could not be passed proximally. Biopsies from the growth were suggestive of an Adenocarcinoma. Sr CEA value was 7.4. The patient was posted for an open anterior resection with a colo-rectal anastomosis and a diversion ileostomy.

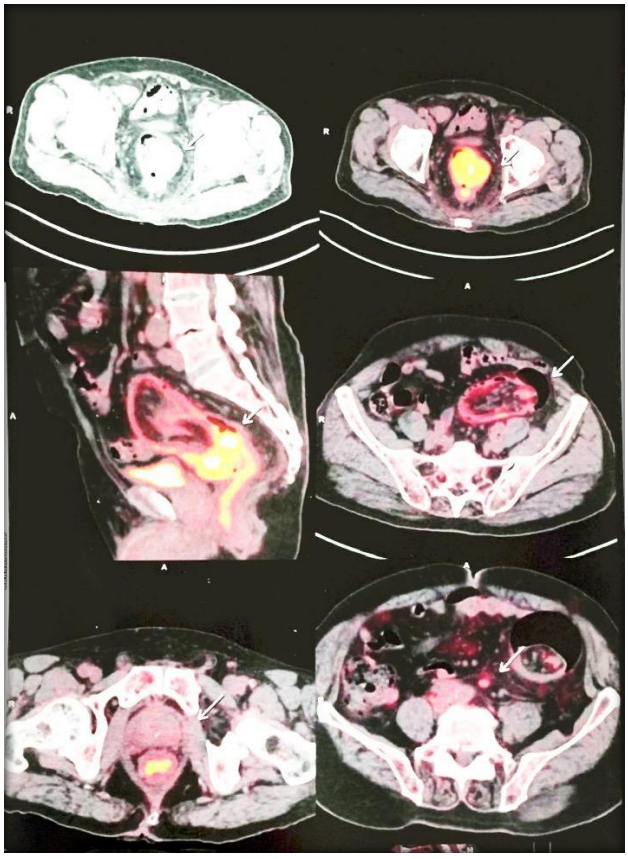

Figure 1: PET-CECT demonstrating the FDG avid lesion at the apex of the intussusception at the recto-sigmoid.

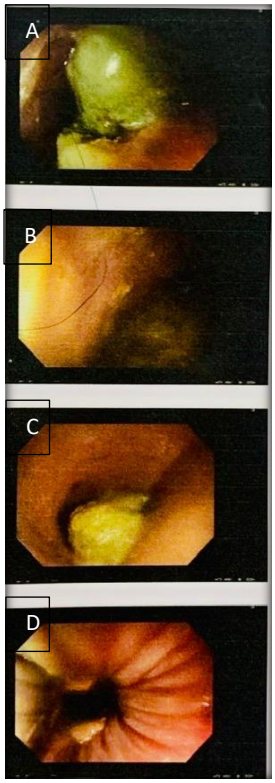

Figure 2 (A-D): Colonoscopic image showing lead point.

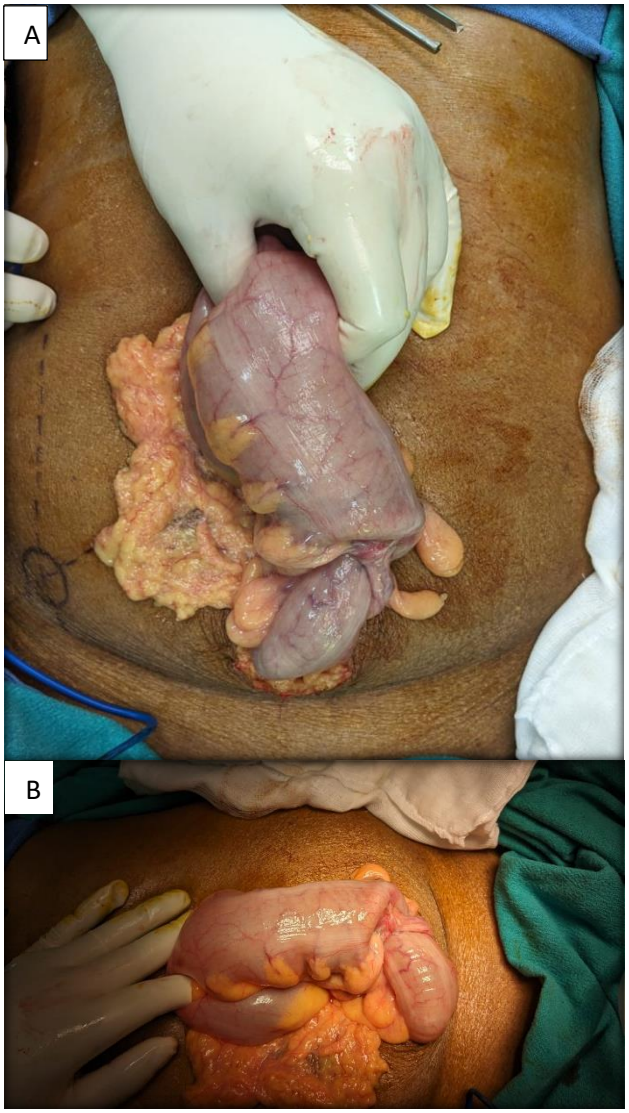

Figure 3 (A and B): Intra-operative image showing colo-colic intussusception.

The intra- operative findings included absence of omental, peritoneal and liver surface deposits, absence of ascites, a colo-colic intussusception of the sigmoid colon with the lead point being the tumour mass and presence of mesenteric lymphadenopathy which was resected with the primary tumour. The post operative period was uneventful. The final histopathology report was suggestive of a moderately differentiated adenocarcinoma of size 6×5×5 cm in the sigmoid colon causing a colo-colic intussusception. The proximal, distal and radial margins were free of the disease and all 28 lymph nodes which were resected were uninvolved. The tumour was seen to extend through the muscularis propria into the peri colorectal tissue with absent perineural and lymph vascular invasion, thus making it a p T3 N0 disease.

The case was discussed in the multi-disciplinary tumor board, in view of advanced age he was not deemed fit for chemotherapy and was planned for watchful observation. 6 weeks after the initial surgery, he underwent ileostomy closure for restoration of gastro intestinal continuity. 2 months after the ileostomy closure the patient was followed up in the out-patient department and is currently doing well. Latest CEA is 2.3 and he continues to be under surveillance as per protocol.

DISCUSSION

Incidents of intussusception are often emergencies for children under three years old; however, adults represent only 5 percent of cases. The mean age of adult presentation is 45 years old, and the median age is 70 years old.[2] While a tumor acts as a lead point in 66%–75% of adult cases, small bowel intussusception is more common than colonic intussusception.[3]

Polyps, leiomyomas, hemangiomas, lipomas, and lymphoid hyperplasia make up about 50% of the benign lesions. A sizable portion of small bowel intussusceptions may have malignant origins, such as gastrointestinal tumors, carcinomas, and lymphomas.[4] Moreover, the majority of tumors that result in small bowel intussusception are indicative of metastatic illness.[5] Meckel diverticulum, granulomas, infections, adhesions, and inflammatory bowel disease (IBD) are some additional uncommon causes. Extremely few cases of colocolic intussusceptions occur, while more than 80% are linked to malignant aetiologies.[6]

Adults with intussusception may experience generalized gastrointestinal symptoms like nausea, vomiting, diarrhea, constipation, or bloody stools. cases that typically manifest as bowel obstruction and in which organic lesions serve as the lead point. Adults typically experience non-specific, periodic, or even asymptomatic symptoms, in contrast to children who typically experience abdominal pain or a palpable abdominal mass.[2,5,7] When diagnosing intestinal intussusception in pediatric patients, ultrasound is a common non-invasive cost-effective method for identifying a target sign. It loses effectiveness, though, because the air in the intestinal lumen prevents ultrasonic wave transmission. When adults have thick abdominal walls and a larger distance between the skin and the target anatomy, the results of abdominal ultrasonography can also be challenging to interpret. Compared to children, adults react less favourably to hydrostatic reduction under radiologic control, and there is a small but discernible chance of perforation during the procedure.[8] Since CT can pinpoint the precise location as well as the surrounding tissue and determine whether a lead point is present or absent, it is the most sensitive diagnostic test available for this disease.

Since adults with intussusception often do have a lead point that can cause obstruction and ischemia, surgery is usually the first course of treatment. When there isn't a physical lead point, though, most situations have a tendency to work themselves out.[9] Peristalsis and feeding force the lesion with the surrounding bowel during the

pathogenesis of intussusception, causing it to telescope into the relaxed intestinal segment distal to it.[10,11] A colonoscopy permits tissue diagnosis and biopsy in addition to direct visualization of the intussusceptum and related intraluminal pathology. Making the distinction between benign and malignant underlying pathology is crucial-and a controversial one-when determining whether to have an operation to remove the affected tissue.

Here are a few cases of colonic intussusception and the lead-point therapies that were used. In their review, Maldonado et al, present the case of a 27-year-old patient who had giant pseudopolyp and ulcerative colitis recently, and who had intestinal blockage as a result of colon intussusception at the splenic flexure.[12]

The patient underwent surgery to remove the invaginated colon tract without any bowel reduction after CT imaging confirmed the diagnosis. Draganic et al, did report colon invagination in a Crohn's disease patient, though. Following conservative treatment with a contrast enema, the patient showed no signs of recurrence at the 6-month follow-up. A subsequent endoscopy revealed that the point of derivation was probably a polypectomy site in the sigma. In patients with IBD, invagination is rare. For giant pseudopolyps or oedematous mucosa following polypectomy, some authors have recommended conservative management; surgical resection is only necessary in cases of intestinal obstruction or when conservative measures are ineffective.

A patient with colon invagination due to metastatic melanoma is described by Kasuga et al. Endoscopic reduction was carried out, and surgery was postponed as an elective procedure. The 64-year-old patient was receiving chemotherapy and immunotherapy at the moment after undergoing multiple melanoma surgeries. In the latter, he claimed to have bloody stools and stomach pain connected to diarrhea. A physical examination and lab tests yielded no results that necessitated immediate surgery. At the level of the descending colon, computed tomography showed intestinal perforation and intussusception, but not necrosis. The intussusception was lessened with endoscopy.

De Figueiredo et al. report a rare case of transverse colonic intussusception caused by a large lipoma. An intraluminal lipomatous mass measuring approximately 6 cm was the cause of the colon's invagination and partial lumen obstruction seen on the abdominal CT scan. After three days, the patient underwent an endoscopic examination and conservative therapy since there were no indications of an intestinal blockage. A lipomatous mass that was consistent with fibroelastic consistency was revealed during the colonoscopy. Any attempt at reduction was deemed unnecessary due to the risk of perforation resulting from the presence of an area of necrotic tissue within the mucosa. The patient then had the affected tract surgically removed via laparoscopy without the need for a reduction maneouvre. Depending on the degree of inflammation and the extent of invagination, surgical management of intraluminal lipomatous lesions of the colon may allow for selective resection. Surgery in the aforementioned case could wait because of his ongoing good health and the lack of any indications of an intestinal blockage. A 34-year-old patient presented with acute abdominal pain, according to Tatsuta et al. The transverse colon's intussusception was discovered by computed tomography in the absence of intestinal obstruction, bowel wall oedema, or tumor.

An abdominal laparoscopy was done for diagnostic purposes due to intense pain. There were no indications of an abdominal tumor, intestinal wall ischemia, or perforation The diagnosis was idiopathic anterograde colo-colonic invagination.

By gently applying direct pressure to the anal side of the transverse colon and light traction to the oral side, laparoscopic surgical reduction was accomplished. A partial resection of the intussuscepted bowel was done because of intestinal wall edema. A macroscopic examination revealed the absence of any tumor. Oedema and submucosal vasodilatation were found during the histopathological examination. Because of the risk of intestinal perforation, surgical reduction of the intestinal invagination before resection is generally not advised in adults. However, since idiopathic intestinal invagination accounts for the majority of pediatric cases, the benefits of laparoscopic surgical reduction in these cases are well established. As the case study shows, not all adult cases of intestinal invagination are associated with cancer. Therefore, if preoperative imaging confirms idiopathic intestinal invagination, laparoscopic surgical reduction is a viable treatment option. Laparoscopy had a reduction success rate of approximately 70%, with ileo-colonic intussusception experiencing an especially high success rate. The reduction makes it possible to avoid a bowel resection that is too lengthy. For adult intussusception, surgical reduction techniques are not always effective.

These techniques, which are frequently used on pediatric patients, entail gently pulling on the transverse colon's oral side while putting light direct pressure on its anal side. As this example shows, these methods are also applicable to adults. Patients with malignant tumor-induced sigmoid rectal intussusception may have varying surgical options depending on the extent of lower rectum involvement. Should the latter become infiltrated, it is recommended to undergo an abdominoperineal resection. As recommended by Matsuda et al, an initial reduction may permit sphincter salvage in the absence of evidence of distal disease. Patients suspected of having a benign polypoid mass may undergo enterotomy, polypectomy, and initial reduction. Although manual reduction is an option, there have also been documented cases of laparoscopic reduction. A thorough evaluation to assess for malignant etiologies must be performed and in the

presence of one, upfront surgery must be opted for due to the risk of complications like obstruction and perforation of the bowel as was done in our case. An accurate assessment of the cause of the intussusception followed by the site of malignancy and appropriate clinical staging is of paramount importance to enable adequate oncological resection in the first attempt itself.

CONCLUSION

Colo colic Intussusception is common in pediatric population and the incidence is relatively less in the adults. In elderly population, underlying malignancy can be a common lead point which needs to be thoroughly evaluated. Management involves surgical resection of the involved segment following the oncological principles of resection. There is no room for conservative management or watchful observation.

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