

**INTUSSUSCEPTION OF THE SIGMOID COLON INTO THE RECTUM CAUSING
LARGE BOWEL OBSTRUCTION**

Hollie Clements, Dhanya Sebastian, Darren J. Porter* and Zorica Vujovic

Ninewells Hospital and Medical School, Dundee, Scotland, United Kingdom.

*Corresponding Author: Dr. Darren J. Porter

Ninewells Hospital and Medical School, Dundee, Scotland, United Kingdom.

Article Received on 25/09/2018

Article Revised on 15/10/2018

Article Accepted on 05/11/2018

ABSTRACT

Adult intussusception occurs infrequently and differs from childhood intussusception in its presentation, aetiology, and treatment. Diagnosis can be delayed because of its longstanding, intermittent, and non-specific symptoms and most cases are diagnosed at emergency laparotomy. With more frequent use of computed tomography (CT) in the evaluation of patients with abdominal pain, the condition can be diagnosed more reliably. Treatment involves simple bowel resection in most cases. Reduction of the intussusception before resection is controversial, but there is a shift against this, especially in colonic cases. Surgery is the mainstay of treatment in adult colo-anal intussusception. This paper presents the clinical presentation, the investigations and the management of an adult patient with intussusception of the sigmoid colon into the rectum secondary to a sigmoid colonic polyp.

KEYWORDS: Intussusception, Sigmoid Colon Polyp, Large Bowel Obstruction.**INTRODUCTION**

Intussusception is the telescoping of one segment of the gastrointestinal tract into an adjacent one. This condition is a major cause of intestinal obstruction in children, but it is relatively uncommon in adults. The diagnosis in adults is usually made at laparotomy, as most patients present as an emergency with intestinal obstruction.

In non-emergency patients the diagnosis can be challenging as symptoms are often non-specific. Clinical signs and investigations are frequently non-specific in adult intussusception. Surgery is the usual treatment in most cases and in those with colo-anal intussusception, the operative management can be challenging.

We present a case of an adult patient who presented with a large bowel obstruction secondary to intussusception of the sigmoid colon into the rectum due to a sigmoid colonic polyp.

The investigation and management of adult intussusception are discussed and a review of the literature of this rare condition is undertaken.

CASE REPORT

A 47-year-old female with no previous medical or surgical history presented with a 10-day history of absolute constipation, colicky generalised abdominal pain, abdominal distension and vomiting. There were no 'red flag' symptoms prior to this presentation. The

patient was not on any regular medications. Significantly there was a family history of a first degree relative with colonic polyps.

Admission observations were stable. On initial examination the abdomen was grossly distended, there were no obvious abdominal scars, nor herniae. On palpation, the abdomen was tense but non-tender. Percussion demonstrated hyperresonance and high pitched tinkling bowel sounds were elicited on auscultation. Per rectal examination excluded palpable masses and bleeding, however the rectum was found to be empty.

Admission bloods were normal. An abdominal x-ray demonstrated significantly dilated large and small bowel loops with an empty rectum, which was highly suggestive of a large bowel obstruction with an incompetent ileocecal valve (Fig. 1).



Figure 1: Abdominal X-ray demonstrating dilated large and small bowel loops and no gas in the rectum.

A CT scan of the abdomen and pelvis confirmed dilated large and small bowel loops with intussusception of the sigmoid colon into the rectum with bowel wall oedema (Fig. 2 and 3). No definite lead point could be identified on the CT scan.



Figures 2 and 3: CT scan with coronal and axial views respectively demonstrating intussusception of the sigmoid colon into the rectum with proximal large bowel dilatation.

Flexible sigmoidoscopy was attempted and demonstrated ulceration of the upper rectal mucosa, but the sigmoidoscope could not be passed beyond this point due to the obstruction and the high risk of iatrogenic perforation.

A laparotomy was performed on the day after admission and this demonstrated large bowel distension from the distal sigmoid colon to the caecum and small bowel dilatation from the ileocaecal junction to the duodenal-jejunal flexure. The sigmoid colon was ischaemic with a serosal tear but no perforation at the site of intussusception. The entire large and small bowel were healthy proximal to the point of intussusception. A thickening within the distal sigmoid colon was felt to represent either a polyp or an adenocarcinoma and this was thought to be the lead point for the intussusception.

The small bowel was milked proximally and decompressed through the NG tube. An appendectomy was performed and a purse-string suture applied at the caecum at the base of the appendix and the large bowel was decompressed at this point using suction, with closure of the caecal opening with the purse-string suture. The sigmoid colon was then reduced per rectum. The patient was haemodynamically stable throughout the procedure but because she had been malnourished for ten days prior to presentation, and due to the extent of the sigmoid dilatation a decision was made not to perform an anastomosis and a Hartmann's procedure was considered prudent. A long rectal stump was left to facilitate restoration of bowel continuity at a future date.

Post - operatively the patient made an uneventful recovery and was discharged home on the thirteenth day. Histopathological analysis of the sigmoid colon specimen confirmed a 22mm pedunculated polyp with surrounding congested and oedematous mucosa consistent with intussusception. Histologically the polyp was confirmed as a villous adenoma with focal high - grade dysplasia but no evidence of invasion into the stalk of the polyp and no evidence of malignancy.

DISCUSSION

Intussusception is defined as the prolapse of one part of the intestine into the lumen of the adjoining distal part. This condition is a major cause of intestinal obstruction in children, but it is relatively uncommon in adults. Adult intussusception accounts for only 1% of all bowel obstructions and 5% of all intussusceptions.^[1]

Most general surgeons will never manage an adult patient with colonic intussusception during their careers, and in many cases this condition will be undiagnosed prior to laparotomy.^[2]

Although intussusception has a low prevalence, it is essential that surgeons are aware of the possibility of this pathology as a delay in diagnosis could result in potentially serious complications such as bowel necrosis, perforation and rarely death.^[3]

In the patient presented in this study the intussusception of the sigmoid colon into the rectum was secondary to a sigmoid colonic polyp, but on reviewing the literature sigmoid intussusception has also been associated with a sigmoid lipoma,^[4] a sigmoid colonic liposarcoma^[5] and a sigmoid colonic adenocarcinoma.^[6]

Presenting symptoms of adult intussusception of the sigmoid colon into the rectum are non specific and include colicky abdominal pain, nausea and vomiting, abdominal distension and constipation as demonstrated in the patient presented in this case report. A study by Lindor et al. that investigated the presenting symptoms, management and outcomes of 148 adult patients with intussusception demonstrated that abdominal pain is the most common presenting symptom with this condition.^[7]

Ultrasonography has been used to evaluate suspected intussusception and findings include the target and doughnut signs on the transverse view and the pseudo - kidney sign on the longitudinal view.^[8] Recent papers report that CT is the most accurate and sensitive imaging modality for diagnosing intussusception and in the case presented CT clearly demonstrated the intussusception of the sigmoid colon into the rectum. The characteristic CT findings of intussusception include an early target mass with enveloped, eccentrically located areas of low density.^[9] Barium enema may also be used to diagnose intussusception and characteristically a cup - shaped filling defect with a spiral or coil - spring appearance is demonstrated.^[3]

In the case described here, a flexible sigmoidoscopy was performed and this demonstrated inflamed sigmoid colonic mucosa. A decision was made to perform a laparotomy and resect the ischaemic sigmoid colon and bring out an end colostomy due to the degree of proximal sigmoid colonic dilatation and the size discrepancy with potential for an anastomotic leak if an anastomosis was performed.

Upon review of the literature surgical resection is the management of choice for this condition. It is recommended that in the presence of inflamed, ischaemic or friable bowel wall not to attempt operative reduction, but to proceed directly to resection.^[10] Even when a benign polyp is suspected before surgery, careful reduction is advised to avoid perforating the strangulated bowel with prior to surgery.^[3]

Laparoscopic surgery is now widely used for the resection of benign and malignant gastrointestinal tumors; however, its application for intussusception is still controversial.^[11] The usefulness of laparoscopic surgery in emergency situations, particularly for non-decompressed intestinal obstruction, remains controversial because adequate intraperitoneal visualization is virtually impossible in such cases.

In the case presented, the small and large bowel were so dilated that laparoscopic manipulation would have been difficult and the likelihood of iatrogenic injury would have been unacceptably high. The choice of a laparoscopic or open approach depends on the clinical condition of the patient, the location and extent of the intussusception, the possibility of underlying disease, and whether the surgeon has sufficient laparoscopic expertise.^[12]

CONCLUSION

Intussusception in adults is a relatively uncommon condition. Adult intussusception accounts for only 1% of all bowel obstructions and 5% of all intussusceptions.^[1] Although intussusception has a low prevalence, it is essential that surgeons are aware of the possibility of this pathology as a delay in diagnosis could result in potentially serious complications such as bowel necrosis, perforation and rarely death.^[3]

Diagnosis of intussusception can be difficult as symptoms are often non-specific. It is therefore important to have a high index of suspicion for this condition. The most useful investigation is abdominal CT scan. Treatment requires resection of the involved bowel without attempted reduction in colonic lesions especially where the bowel is non-viable or when malignancy is suspected.

With coloanal intussusceptions the surgical technique may need modification according to the situation and can be challenging.

GRANT

None.

CONFLICTS OF INTEREST

We the authors of this case report have no conflicts of interest to declare.

REFERENCES

1. Eisen LK., Cunningham JD., Aufses AH. Intussusception in adults: Institutional Review. *J Am Coll Surg*, 1999; 188: 390-395.
2. Begos DG., Sandor A., Modlin IM. The diagnosis and Management of Adult Intussusception. *Am J Surg*, 1997; 173: 88-94.
3. Yalamarthi S., Smith RC. Adult Intussusception: Case Reports and Review of The Literature. *Postgrad Med J.*, 2005; 81: 174-177.
4. M'Rabet S., Jarrar MS., Akkari I., Abdelkader AB., Sriha B., Hamila F., Jazia EB. Colonic Intussusception Caused By A Sigmoidal Lipoma: A Case Report. *Int J Surg Case Rep.*, 2018; 50: 1-4.
5. Fernandes SR., Gonçalves AR., Lopes J., Santos PM. Da Silva HL., Crujo C. Velosa J. Primary Liposarcoma of The Sigmoid Presenting As Colonic Intussusception - A Case Report. *Rev Esp Enferm Dig.*, 2016; 108: 9. 591-594.
6. Ochiai H., Ohishi T., Seki S., Tokuyama J., Osumi K., Urakami H., Shimada A., Matsui A., Isobe Y., Murata Y., Endo T., Ishii Y., Hasegawa H., Matsumoto S., Kitagawa Y. Prolapse of Intussusception Through The Anus As A Result of Sigmoid Colon Cancer. *Case Rep Gastroenterol*, 2010; 4: 346-350.
7. Lindor RA., Bellolio MF. Sadosty AT., Earnest F. Cabrera D. Adult Intussusception: Presentation, Management and Outcomes of 148 patients. *J Emerg Med.*, 2012; 43(1): 1-6.
8. Begos DG., Sandor A., Modlin IM. The Diagnosis And Management of Adult Intussusception. *Am J Surg*. 1997;173:88-94
9. Lorenzi M., Iroatulam AJ., Vernillo R., Banducci T., Mancini S., Tiribocchi A., Ferrari FS., Mancini S. Adult Colonic Intussusception Caused By A Malignant Tumor of The Transverse Colon. *Am Surg*, 1999; 65: 11-14.
10. Nagorney DM., Sarr MG., McIlrath DC. Surgical Management of Intussusception In The Adult. *Ann Surg*, 1981; 193: 230-236.
11. Chiu CC., Wei PL., Huang MT., Wang W., Chen TC., Lee WJ. Laparoscopic Treatment of Ileocecal Intussusception Caused By Primary Ileal Lymphoma. *Surg Laparosc Endosc Percutan Tech.*, 2004; 14: 93-95.
12. Vishwas D., Desouza A., Bhandare M., Saklani A.P. Laparoscopic Management of Sigmoidorectal Intussusception Caused By Sigmoid Carcinoma. *South Asian J Cancer*, 2015; 4: 1.45.