CASE REPORT

Adult intussusception presenting as rectal prolapse

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SUMMARY

We present a case of an elderly man with what appeared to be an episode of rectal prolapse following straining while defaecating. Laparotomy revealed the prolapse to be an intussusception of large bowel with a villous adenoma as its lead point. Reduction resection was performed with primary anastomosis, and the patient recovered well from the surgery. Rectal prolapse has often been viewed as a benign condition in the elderly, but more thought needs to be put into the diagnosis in patients with risks of malignancy. Prolapse of an intussuscepted bowel segment in adults is an exceedingly rare presentation, often signifying a risk of malignancy. Appropriate investigations and surgical techniques need to be employed in effectively resolving symptoms while minimising the chances of tumour seeding.

BACKGROUND

Rectal prolapse is not often consciously associated with malignancy especially in the elderly population and it is infrequent for large bowel malignancy to first present via an incident of prolapse through the anus. To have an adult intussusception of the sigmoid colon mimic that of a rectal prolapse is even rarer in occurrence. The attention this case brings to the diagnosis of cancer in presentations of rectal prolapse is very useful for clinicians managing acute surgical patients. The approach to the diagnosis and surgical techniques considered in these cases where information is often limited in the acute setting is very worthy of collective input. Furthermore with pictorial record of intraoperative manoeuvres, the case is made complete with accurate visual identification of the lesions involved which immaculately coincides with histology reports of villous adenoma.

CASE PRESENTATION

A fit and healthy 84-year-old man came to A&E department with a symptom of bowel prolapse while straining on the toilet. It is the first time he experienced the symptom, and he revealed being constipated earlier in the day, leading him to perform a voluntary valsalvar manoeuvre that resulted in the prolapse which he felt through his anus. There was no previous history of bowel habit changes. However, he did undergo a laparoscopic resection of a gastrointestinal stromal tumour measuring 2.2 cm in the fundus of the stomach in 2004, from which he made an excellent recovery. His medical history consisted of hypercholesterolaemia and haemorrhoids, which he adequately manages with over-the-counter preparations.

At presentation he was systemically well and haemodynamically stable with mild discomfort in the perineal region. A 12 cm irreducible, prolapsed bowel (initially perceived to be the rectum) was noted on examination which appeared extremely oedematous (figure 1). He later rapidly developed increasing lower abdominal pain, accompanied by distension, nausea and vomiting. Opioid analgesia was needed for pain management and a nasogastric tube was inserted to control the vomiting. Intravenous fluid was given in the light of hypotensive episodes, and he responded adequately to fluid resuscitation.

INVESTIGATIONS

Chest X-ray performed in A&E department was unremarkable and abdominal plain film showed diffusely prominent small and large bowel loops without clear evidence of distension. The blood test was completely unremarkable with normal inflammatory markers and liver function.

DIFFERENTIAL DIAGNOSIS

Rectal prolapse, polyp.

TREATMENT

A surgical approach was taken and a laparotomy was performed for sigmoid colectomy with primary anastomosis. Intraoperatively, a colo-colic intussusception was identified with the sigmoid colon being pulled into the distal sigmoid/rectal segment of the bowel. A mid-sigmoid villous adenoma was found to have served as the focus of intussusception and subsequent prolapse through the anus. Reduction of the prolapsed intussusception was achieved externally through the anal canal (figure 2), and 30 cm of sigmoid colon was resected together with the villous adenoma (figures 3 and 4). Primary end-to-end anastomosis was

Figure 1 Prolapsed colo-colic intussusception with villous adenoma.

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Figure 2 Reduction of colo-colic intussusception by hand.

successfully completed. Histology later demonstrated that the sigmoid resection contained a villous adenoma, 7 cm in size, displaying low-grade dysplastic changes. A separate small villous adenoma of 1.4 cm removed from the colon through colonoscopy during the same laparotomy demonstrated high-grade dysplasia.

OUTCOME AND FOLLOW-UP

The patient's postoperative status was complicated by pneumonia and atrial fibrillation and on discharge, he was started on digoxin and bisoprolol. There was no complication related to the surgical technique itself and he made a quick recovery subsequently.

DISCUSSION

Intussusception is an uncommon condition in adults and results from the invagination of one segment of the gastrointestinal tract into an adjacent segment.¹ Unlike in children where most cases of intussusception are idiopathic, 70% of cases of intussusception in adults are due to an underlying neoplasm, and usually malignant if located in the large bowel.² Rectal prolapse as a first presentation of underlying malignancy is by itself uncommon with only a handful of cases being reported.³ Prolapse of more proximal segments of bowel masqueraded as a full-thickness rectal prolapse is even less frequently seen.^{4,5} The anatomy is only fully appreciated at laparotomy, and the pathology in the bowel segment driving the prolapse is not always

clearly visualised. This case illustrates a clearly identifiable villous lesion serving as the intussusceptum at the sigmoid-rectal junction, leading the prolapsing segment through the anus. Owing to its unusual presentation on examination, prolapsed intussusception can be easily misdiagnosed as a simple rectal prolapse, especially in the initial stages where symptoms of bowel obstruction have not been fully materialised.¹ Therefore, surgeons have to be astute in managing acute admissions of obstruction when there are hints of a malignant or pre-malignant large bowel lesion(s).

The surgical management of intussusception is largely dependent on the site of occurrence and the pathological characteristic of the lead point. It is believed that most benign aetiologies of the disease manifest in the small bowel, which comprise adhesions, Meckel's diverticula and endometriosis in the appendix among others.⁶ With that in mind, literatures have recommended reduction as the primary measure unless there is doubt of malignancy.^{6,7} In contrast, over 60% of colo-colic intussusceptions are malignant.^{6,8-10} The view of preoperative or on-table colonoscopy has therefore been practised to limit the need for bowel resection in identifiable benign lesions.¹¹ Following visual verification of the lesion, the decision is then made on whether to perform reduction. Indications against reduction include chronic disease which results in adhesions between the intussusceptum and the intussusciptions, and a high risk of seeding and embolisation in cases of malignancy.^{6,7} In the above scenarios, en bloc resection would be the procedure of choice, with formation of a temporary colostomy for left-sided disease. However, in scenarios requiring extensive large bowel resection in a relatively young patient (<60 years), reduction resection can be undertaken to preserve bowel length in order to maximise the quality of life.¹²

In this study, we elected to proceed with the strategy of reduction resection in the context of premalignant lesions visualised intraoperatively. As the patient presented at midnight, rapid deterioration in the clinical picture led to a decision to perform a laparotomy without preoperative CT or colonoscopy. It was therefore purely based on the surgeon's clinical acumen in proceeding with a manual reduction without prior knowledge of the culprit lesion(s), which turned out not having the potential as yet to seed or metastasise (villous adenomas). This practice is not uncommon and is frequently seen in acute cases of adult intussusception.^{7,13} In contrast, individuals exhibiting relapsing symptoms of chronic disease almost always receive extensive preoperative investigations. After achieving bowel continuity

Figure 3 Resected sigmoid colon with villous adenoma.

Figure 4 Resected sigmoid colon with villous adenoma 2.

postreduction, flexible sigmoidoscopy was used to ascertain further polyps in the large bowel. This is therefore loosely consistent with the collective recommendations in literatures.¹⁴ Having recognised the sigmoid lesions being villous adenomas, a segmented resection of 30 cm of sigmoid colon was then performed followed by primary anastomosis of the colon and rectosigmoid junction. This was undertaken despite the patient being 84 years of age as there was no sign of perforation on laparotomy, and that the patient had a perfect performance score preoperatively. Although the patient developed a chest infection during the course of recovery, there was no complication of leaks or collection postprimary anastomosis. He subsequently made good progress and was discharged with excellent bowel function.

Villous adenomas are known potential risks of malignant transformation and a strict regime of follow-up colonoscopy is advised on most surveillance guidelines.^{15 16} Its immediate metastatic potential is largely dependent on concurrent development of adenocarcinomas within the same bowel lesion, and its propensity to spread to regional lymph nodes is well documented.¹⁷ Histological findings of non-invasive adenomas with low-

grade and high-grade dysplastic changes in hindsight support the surgical approach of segmental resection of the sigmoid colon postreduction, allowing maximum preservation of the large bowel length.

Competing interests None.

Patient consent Obtained.

Provenance and peer review Not commissioned; externally peer reviewed.

REFERENCES

- 1 Yalamarathi S, Smith RC. Adult intussusception: case reports and review of the literature. *Postgrad Med J* 2005;81:174–7.
- 2 Beleato-González S, Vilanova JC, García-Figuerias R, et al. Intussusception in adults; what radiologists should know. *Emerg Radiol* 2012;19:89–101.
- 3 Chen CW, Hsiao CW, Wu CC, et al. Rectal prolapse as initial clinical manifestation of colon cancer. *Z Gastroenterol* 2008;46:348–50v.
- 4 Yamazaki T, Sakai Y, Sekine Y, et al. Sigmoid colon cancer presenting as complete rectal prolapse: report of a case. *Surg Today* 1999;29:266–7.
- 5 Bounova A, Polychronidis A, Laftsidis P, et al. Sigmoid colon cancer presenting as complete rectal prolapse. *Colorectal Dis* 2007;9:665–6.
- 6 Gupta RK, Agrawal CS, Yadav R, et al. Intussusceptions in adults. *Health Renaissance* 2010;8:158–65.
- 7 Arkianoglu Z, Onder A, Taskesen F, et al. Surgical alternatives in the treatment of intestinal intussusceptions resulting from polyps in adults. *Am Surg* 2013;79:933–8.
- 8 Sachs M, Encke A. Entero-enteral invagination of the small intestine in adults. A rare cause of 'uncertain abdomen'. *Langenbecks Arch Chir* 1993;378:288–91.
- 9 Eisen LK, Cunningham JD, Afse AH Jr. Intussusception in adults: institutional review. *J Am Coll Surg* 1999;188:390–5.
- 10 Kitamura K, Kitagawa S, Mori M. Endoscopic correction of intussusception and removal of a colonic lipoma. *Gastrointest Endosc* 1990;36:509–11.
- 11 Wang LT, Wu CC, Hsiao CW, et al. Clinical entity and treatment strategies for adult intussusceptions: 20 years' experience. *Dis Colon Rectum* 2007;50:1941–9.
- 12 Olakolu SS, Lloyds CL, Wellington PM. Adult intussusception: managed by reduction-resection; a case report. *The Internet Journal of Third World Medicine* 2012;10.
- 13 Teyha PS, Chandika A, Kotecha VR. Prolapsed sigmoid intussusception per anus in an elderly man: a case report. *J Med Case Rep* 2011;5:389.
- 14 Pezzolla A, Lattarulo S, Caputi O, et al. Colonic lipomas. Three surgical techniques for three different clinical cases. *G Chir* 2012;33:420–2.
- 15 US Preventive Services Task Force. Screening for colorectal cancer: US preventive services task force recommendation statement. *ANN Intern Med* 2008;149:627–37.
- 16 Leddin DJ, Enns R, Hilsden R, et al. Canadian Association of Gastroenterology position statement on screening individuals at average risk for developing colorectal cancer:2010. *Can J Gastroenterol* 2010;24:705–14.
- 17 Stulc JP, Petrelli NJ, Herrera L. Colorectal villous and tubulovillous adenomas equal to or greater than four centimeters. *Ann Surg* 1988;207:65–71.

Learning points

- Rectal prolapse (including occult prolapse) in adults must be worked up for bowel malignancy.
- Large bowel intussusception in adults is frequently associated with large bowel malignancy, warranting laparotomy for diagnosis and therapy.
- Colonoscopy and flexible sigmoidoscopy are useful investigations preoperative and intraoperative in identifying the nature and extent of lesion(s) for subsequent surgical therapy.
- Strategy of reduction resection can be employed in managing intussusception where risk of malignant lesions is low, and where bowel preservation is essential for function.

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