Adenocarcinoma of the Colon: An Uncommon Cause of Adult Colonic Intussusception

The Editor

Sir,

Colon cancer is the third most common malignancy in Jamaica, with age standardized rates per 100 000 per year of 9.9 and 9.4 in males and females respectively (1). Intussusception in adults is an uncommon presentation, representing less than 1% of all cases of intestinal obstruction (2). The majority of patients present with nonspecific symptoms that can delay diagnosis, resulting in the majority of cases being diagnosed at laparotomy. However, the increased use of computed tomography (CT) scans to evaluate patients with abdominal pain has improved preoperative diagnosis (3). Surgical resection of the intussusception without reduction is the preferred treatment in adults because in greater than 50% of cases the lead-point is a colonic neoplasm which is best resected with minimal manipulation, thus reducing the theoretical risk of tumour dissemination (4, 5). We report on our experience at the University Hospital of the West Indies, in managing two cases of colonic intussusception caused by adenocarcinoma of the colon.

The first case is that of a 22-year old man who presented to the gastroenterology clinic at the University Hospital of the West Indies with a five-month history of intermittent, cramping left-sided abdominal pain. This was associated with the passage of altered and bright red blood mixed with stool per rectum. There was no history of weight loss and no personal or family history of inflammatory bowel disease or cancer. Physical examination was normal and he had colonoscopy which revealed a 5 cm diameter friable polypoid mass occupying 60% of bowel lumen 40 cm from the anal verge. This was biopsied. A colonic malignancy was suspected and he was sent for an abdominal CT scan. Computed tomography revealed colo-colic intussusception at the level of the descending colon.

An emergency laparotomy was performed after resuscitation. An antegrade intussusception of the distal transverse and splenic flexure of the colon was found, without evidence of ischaemic bowel or metastatic disease. A left hemicolectomy with primary anastomosis was done. The postoperative course was uneventful and he was discharged on the fifth postoperative day.

The histology report noted a moderately differentiated mucinous adenocarcinoma, with involved serosal margin and 2/7 lymph nodes positive for metastases (Dukes' C).

Chemotherapy was scheduled, however, he defaulted from treatment and was seen one year later at which time surveillance colonoscopy was performed and was normal. Clinically he was doing well with normal CEA and no evidence of metastatic disease on ultrasound.

Index case two is that of a 67-year old male previously diagnosed with diabetes and hypertension who presented to his private physician with a three-month history of intermittent diarrhoea, the occasional passage of altered blood mixed with stool and generalized weakness. He was found to be pale and tachycardic and haemoglobin was 4.8g/dL. He was transfused with packed red cells and later investigated with colonoscopy, which revealed a large, fungating, exophytic mass, 25 cm from the anal verge. Biopsy confirmed a moderately differentiated adenocarcinoma.

Examination revealed an elderly male whose abdomen was soft and non-tender, without organomegaly or a mass. There was a filliform mass 6 cm from the anal verge on digital rectal exam. A CT done reported a 1 cm hypodense lesion in segment II of the liver, suggestive of a solitary metastasis and the CEA was normal.

The diagnosis of sigmoid cancer with a possible synchronous rectal cancer was made.

At laparotomy, a sigmoido-rectal intussusception (Figure) was found with the sigmoid cancer as the lead point. There was no evidence of metastases. Sigmoid colectomy with primary anastomosis was done. He recovered well.

The histology report noted a well-differentiated adenocarcinoma with 11/11 lymph nodes negative for metastases (Dukes' B). After six months, he was doing well.

Unlike intussusceptions in children, 70% to 90% of all adult intussusceptions have a demonstrable underlying cause (2). Malignant tumours are documented in 20% to 50% of adult intussusception (4−6). Intussusceptions occurring in the large bowel are more likely to have a malignant aetiology (5). Large polypoid adenomas and lipomas are the most benign lead-points found in adult colo-colic intussusception (6, 7).

Intussusception is the telescoping of one segment of the intestine into another adjacent distal segment of the intestine. Early diagnosis and appropriate treatment are essential, because the mesentery of the involved segment is trapped between the overlapping layers of the bowel and its vascularity may be compromised (8). Intussusception of the sigmoid colon is often misdiagnosed as a very large polyp or as a rectal prolapse due to the wide variety of nonspecific abdominal symptoms, including pain, obstruction and rectal bleeding (6, 9). Unfortunately, a precise preoperative diagnosis is established in less than half of the cases (4, 6).

Radiological studies may be helpful in the preoperative diagnosis. The characteristic appearance of intussusceptions on barium enema is "a cup-shaped filling defect". Ultrasound findings include the "target sign" or "doughnut sign" on the transverse view and the "pseudokidney sign" on the longitudinal view. Computed tomography scans have 78% to 100% accuracy in the diagnosis of intussusception. The most

common CT finding is an early target mass with enveloped, eccentrically located areas of low density (10).

Surgical resection without reduction is the treatment of choice in colo-colic adult intussusception (4, 5). However, in uncomplicated sigmoido-rectal intussusceptions, an initial reduction may permit a sphincter-saving resection, without increased morbidity or mortality to the patient, as was done for the second index case. If there is rectal wall necrosis, an abdominoperineal resection is indicated (8).

Intussusception is not an adverse prognostic indicator for the underlying malignancy (2). In the study by Azar and Berger (6), no positive lymph nodes were found in six patients with intussusception and colonic carcinoma and the majority of lesions extended only through the muscularis propria with no penetration into the serosa. Bulky tumours with serosal and intraperitoneal extension prevent the bowel from intussuscepting. The first index case may have been an exception to this general logical rule, as serosa was involved and lymph nodes positive for metastases were present.

Our cases highlight this uncommon presentation of colonic adenocarcinoma. In our opinion, colon cancer presenting with intussusception is usually indicative of a lower

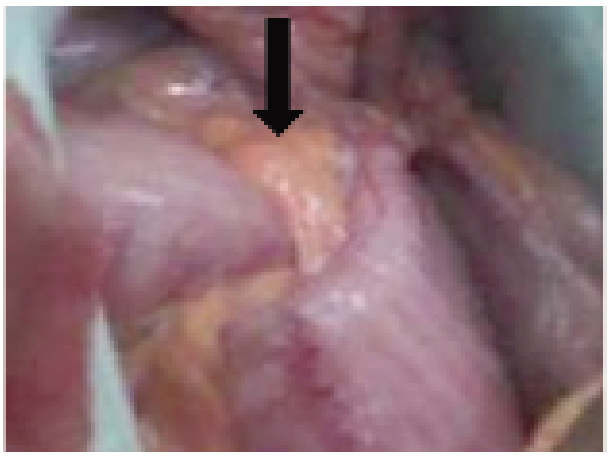

Figure: Intra-operative picture showing sigmoido-rectal intussusception.

T- stage (T1 or 2) and an oncologic resection is usually required without reduction. However, reduction before resection to prevent a more extensive operation such as an abdomino-perineal resection is safe, once the rectum is viable.

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REFERENCES

1. Gibson TN, Blake G, Hanchard B, Waugh N, McNaughton D. Age-specific incidence of cancer in Kingston and St Andrew, Jamaica, 1998–2002. West Indian Med J 2008; **57:** 81−9.
2. Lewis D, McCarty TM, Kuhn JA, Lamont JP. Colon cancer presenting with intestinal intussusception. J Clin Oncol 2004; **22:** 4853−4.
3. Byrne AT, Geoghegan T, Govender P, Lyburn ID, Colhoun E, Torreggiani WC. The imaging of intussusception. Clin Radiol 2005; **60:** 39−46.
4. Begos DG, Sandor A, Modlin IM. The diagnosis and management of adult intussusception. Am J Surg 1997; **173:** 88−94.
5. Nagorney DM, Sarr MG, McIlrath DC. Surgical management of intussusception in the adult. Ann Surg 1981; **193:** 230−6.
6. Azar T, Berger DL. Adult intussusception. Ann Surg 1997; **226:** 134−8.
7. Carter CR, Morton AL. Adult intussusception in Glasgow, UK. Br J Surg 1989; **76:** 727.
8. Mohamed E, Mohamed A, Mohamed E, Mahjoub E, El Hassan Faricha E, Abdelkader E et al. Colorectal intussusception secondary to sigmoid carcinoma in an adult. Southern Medical J 2007; **100:** 1039−41.
9. Matsuda K, Suda K, Tamira K, Deguchi T, Yamazaki E, Yago H et al. Surgical management of adult sigmoid colon intussusception caused by a malignant tumor: Report of a case. Surg Today 2003; **33:** 768−71.
10. Huang BY, Warshauer DM. Adult intussusception: Diagnosis and clinical relevance. Radiol Clin North Am 2003; **41:** 1137−51.