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Case Report

Colo-colic intussusception in an adult: case report and review of the literature

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ABSTRACT

Intussusception is rare in adults and is clinically distinct to its occurrence in the paediatric population. Appreciation of these differences by general surgeons is important in guiding management in the adult population. We report the case of a 37 year old presenting with abdominal pain and per rectal bleeding who was found to have transverse colonic intussusception on computed tomography (CT). Colonoscopy and biopsy confirmed a transverse colon adenocarcinoma for which he underwent laparoscopic extended right hemicolectomy. The existing literature around adult intussusception was reviewed. Intussusception presents non-specifically and often subacutely in adults, frequently being overlooked as a diagnosis in this population. Increased use of imaging, in particular CT, have improved preoperative diagnosis. Compared to the paediatric population where intussusception is overwhelmingly idiopathic, in adults it is often due to a pathological lead point, with a significant risk of underlying malignancy. Consequently, surgery without reduction is the mainstay of management in the adult population, in comparison to hydrostatic or pneumatic reduction in the paediatric population. Intussusception is a rare presentation in the adult population. It is commonly caused by a pathologic lead point and should raise suspicion of malignancy particularly when involving the colon. As a result, within the adult population, surgery is the mainstay of management, which can safely be performed laparoscopically.

Keywords: Adult intussusception, Intestinal invagination, Colocolic intussusception, Colorectal neoplasms

INTRODUCTION

Intussusception refers to the invagination or telescoping of a more proximal part of bowel (intussusceptum) into a more distal segment (intussuscipiens). It is a rare and often overlooked diagnosis in the adult population, with adults only accounting for 5% of cases.[1] Intussusception in adults overwhelmingly relates to lesions which act as a lead point, resulting in abnormal peristaltic activity at the intussusceptum that can progress to obstruction, ischaemia, perforation and peritonitis. In comparison, within the paediatric population, intussusception predominately occurs without a lead point, informing a vastly different management compared to adults. We herein discuss the case of a 37 year old diagnosed with intussusception of the transverse colon who was found to have an underlying colonic adenocarcinoma.

CASE REPORT

ME is a 37 year old male who presented with a three week history of intermittent abdominal pain and per rectal bleeding. He had some nausea but no episodes of vomiting. This was associated with 6 kilograms of unintentional weight loss and poor appetite. He had no prior medical or surgical history. On examination, his abdomen was soft and non-tender. Bloods were unremarkable. Computed tomography (CT) demonstrated a 5.5cm segment of telescoped transverse colon within the upper abdomen without a discrete lesion and without

features of obstruction, mesenteric ischaemia or hollow viscous perforation (Figure 1 A-B).

ME underwent a colonoscopy which demonstrated an intussuscepted, fungating, non-obstructing mass in the transverse colon (Figure 1 C). He underwent elective laparoscopic extended right hemicolectomy and had an uncomplicated post operative recovery (Figure 1 D). Histopathology confirmed mucinous adenocarcinoma pT3 pN2a with metastatic carcinoma in 6 lymph nodes following which he was referred for adjuvant chemotherapy.

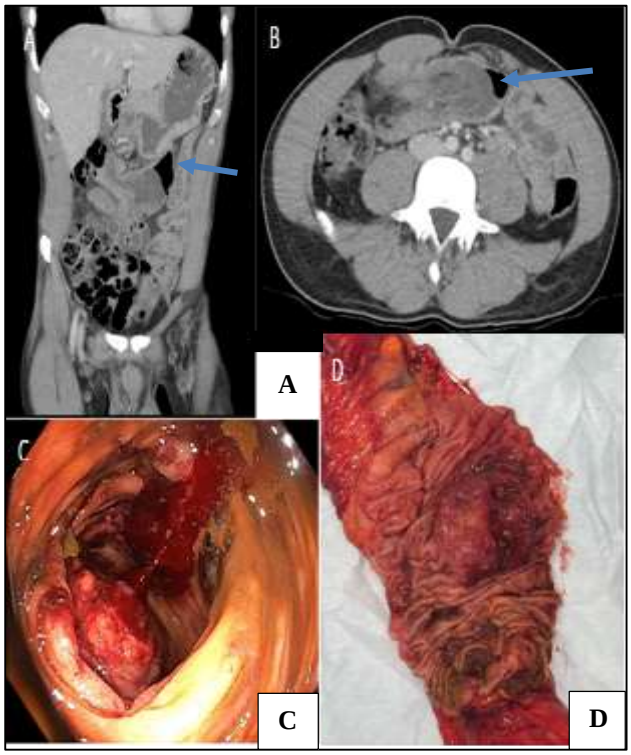

Figure 1 (A-D): Contrast tomography images demonstrating colo-colic intussusception in coronal view and axial view. Colonoscopic and operative images demonstrating underlying pathologic colonic malignancy lead point.

DISCUSSION

Intussusception predominately affects the paediatric population and is often overlooked as a diagnosis in adults. Importantly, paediatric intussusception is clinically distinct from that in adults and appreciation of these differences by general surgeons is important in informing the management in the adult population.

Adult intussusception relates to a pathologic lead point in up to 90% of cases.[1,2] This compares to only 10% in children where idiopathic intussusception predominates.[3] One systematic review looked at the underlying aetiology of adult intussusception finding benign lesions accounted for 37%, malignant lesions for 33% and idiopathic causes 15%.[4] Entero-enteric intussusception was the most common, followed by ileocolic and colo-colic intussusception.[4] When considering the aetiology based on location, malignant lead points account for only 30% of small bowel intussusception, but this reaches 65% in cases of intussusception involving the colon.[5] Therefore, diagnosis of a colonic intussusception in an adult should raise suspicion of an underlying malignancy.

The clinical presentation of intussusception in adults is non-specific and often subacute making pre-operative diagnosis challenging.[6] Abdominal pain is the predominant symptom.[7] Patients may also present with nausea, vomiting, diarrhoea, anorexia, constipation, per rectal bleeding, abdominal distension and weight loss. Eliciting constitutional symptoms may direct diagnosis of underlying malignant pathology as in this case.[6] Comparatively, in the paediatric population, children often present with the triad of intermittent colicky abdominal pain, red currant jelly stool and palpable abdominal mass.[3] Subacute presentations defined as those presenting with greater than 14 days of symptoms are associated with a greater risk of underlying malignant lead points.[7] Other factors that are associated with an increased risk of underlying malignant lead points include gastrointestinal bleeding and anaemia, the former which our patient demonstrated.[8]

Historically intussusception was commonly diagnosed at laparotomy, however, increased use of CT has improved preoperative diagnosis. Earlier studies reported preoperative diagnostic rates of 40-50% compared to more modern series which record pre-operative diagnosis in 80%.[2,6,9,10] Pre-operative imaging typically involves CT or abdominal ultrasound. CT has a sensitivity reaching 100% for detecting intussusception and has the advantage of distinguishing the presence of a lead point and assessing for complications such as obstruction, ischaemia and perforation.[4,10,11]

Intussusception classically appears as a target sign in the axial view and sausage shaped mass in the coronal view, with the intussusceptum in the centre and intussuscipiens forming the outer ring.[10,11] Ultrasound can also demonstrate a target sign in the transverse view and pseudo-kidney sign in the longitudinal view.[10,11] Its sensitivity reaches 72% with limitations including sonographer skill and technical difficulties related to overlying bowel gas and body habitus.[12] Other radiologic methods that have been used to diagnose intussusception include small bowel series and barium studies but these have fallen out of favour due to the accessibility and sensitivity of CT. Colonoscopy can be used, as in this case, to identify a mass, in the case of colonic intussusception.

The recommended approach for managing adult intussusception accounts for the predominance of underlying pathologic lead points and difficulty in differentiating between malignant and benign lead points

preoperatively. Given this, pre-operative reduction is not endorsed due to the risk of dissemination or seeding of tumour cells from bowel manipulation.[1] Reduction should also not be attempted if there are concerns regarding the integrity of the bowel.[6] Exceptions include when the intussusception is confirmed to be caused by post operative adhesions, a staple line, a confirmed benign lesion or where there is concern about causing intestinal failure or affecting quality of life as from extensive resection.[5,13] Definitive surgical resection is the mainstay of managing adult intussusception and following oncologic principles is advised when a benign lesion has not been confirmed.[11] Surgical management can safely be undertaken laparoscopically as has been demonstrated previously and in this case.[14-16]

Higher rates of CT use in adults with non-specific abdominal symptoms has led to increased detection of incidental and transient intussusception. These are not related to pathologic lead points and are a result of transient peristaltic aberrations. They tend to involve a short segment of small bowel (<4 cm). Because they are likely to spontaneously resolve, these patients can be managed expectantly.[10,11] This does, however, raise to the surgeon the question about which cases of adult intussusception should be expectantly managed. Consensus appears to favour expectant management for short segment small bowel intussusception, not associated with a lead point, and without symptoms of obstruction or ischaemia.[7,17] Where concerned, it seems reasonable to undertake diagnostic laparoscopy to confirm persistent versus transient intussusception and rule out a pathologic lead point.[14]

CONCLUSION

Intussusception is a rare presentation in the adult population. It is overwhelmingly associated with a pathologic lead point and should raise suspicion of malignancy particularly when involving the colon. These differences in the adult population are why surgery is considered the mainstay of management, which can safely and effectively be performed laparoscopically.

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