Benign Causes of Adult Intussusception

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Benign Causes of Adult Intussusception

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Abstract

Intussusception is a rare cause of adult intestinal obstruction and can sometimes be a surprise finding at laparotomy. We describe five cases of adult intussusception with interesting clinical and radiological findings. We also provide a review of the current literature with respect to presentation, diagnosis and management.

KEYWORDS: Intussusception, Benign intussusception, Causes of Intussusception, Adult intussusception
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Report of five cases and literature review

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Intussusception is a rare cause of adult intestinal obstruction and can sometimes be a surprise finding at laparotomy. We describe five cases of adult intussusception with interesting clinical and radiological findings. We also provide a review of the current literature with respect to presentation, diagnosis and management.

**Case 1**

A previously fit 60-year old Greek Cypriot lady was admitted with a 3-month history of colicky abdominal pain associated with nausea and intermittent vomiting. She was anorexic and had lost one and a half stones in weight. During this time she attended her GP’s surgery on at least four occasions and 4 weeks prior to admission an abdominal and pelvic ultrasound scan revealed multiple slightly dilated fluid/gas filled loops of small bowel.

On admission she was unwell and dehydrated. Her abdomen was distended, diffusely tender and demonstrated ‘erythema-ab-igne’ due to application of a hot water bottle for chronic pain (Figure 1). There were no signs of peritonism. Bowel sounds were present and a plain abdominal film revealed dilated small bowel loops. Blood tests were unremarkable. A rigid sigmoidoscopy to 16 cm was normal. At laparotomy she was found to have jejuno-jejunal intussusception (Figure 2) of a 5 x 5cm midjejunal tumour, which was resected with a segment of jejunum (Figure 3). Histology revealed a benign inflammatory fibroid polyp. She was discharged on the fifth postoperative day having made an uncomplicated recovery.

**Case 2**

A 37-year old Chinese lady presented with a 2-year history of increasing peri-umbilical colicky pain and associated nausea, but not vomiting. Over the 8-10 weeks prior to admission the pain had increased considerably. She was able to eat and drink and pass normal stools every day, although eating seemed to increase the pain.

On admission, she had peri-umbilical erythema-ab-igne and admitted to using a hot water bottle for her pain. A soft mass was palpable in the right iliac fossa. Abdominal x-ray revealed slightly dilated loops of small bowel, but no signs of acute obstruction. An abdominal CT scan revealed a mixed attenuation soft tissue mass in the right flank, which had the typical radiological appearance of an intussusception (Figure 4). A multi-lobulated lesion suggestive of a lipoma or low-grade liposarcoma was evident at the lead point.

At laparotomy, an ileocaecal intussusception was found with ileum intussuscepting up to the transverse colon. This could be milked back leaving a large mass in the caecum. A limited right hemicolecctomy was performed. The histopathological examination revealed a
lipoma in the submucosa of ileocaecal valve (Figure 5 & 6). The patient recovered well and was discharged on 6\textsuperscript{th} day.

**Case 3**

A 34 years old Caucasian male presented with abdominal pain and diarrhoea of 3 weeks duration. He had visited the emergency department twice in these 3 weeks at two different hospitals and discharged with diagnosis of gastroenteritis on both occasions. Pain was intermittent, colicky in nature and was associated with diarrhoea, anorexia and nausea. There was no other significant past medical or surgical history. On examination, he was tachycardic, normotensive and afebrile. The abdomen was soft, non distended with tenderness in the right iliac fossa and lumbar region without signs of peritonism. Bowel sounds were present and digital rectal examination was unremarkable. Plain film of chest and abdomen did not reveal any abnormality. CT scan was obtained (Figure 7) which showed colocolic intussusception. On laparoscopy colocolic intussusception was confirmed and right hemicolectomy was performed due to presence of ischaemic bowel. There was no apparent cause found for intussusception intraoperatively. Histological examination of the specimen revealed foci of florid lymphoid hyperplasia in the submucosa of terminal ileum and ileocaecal valve with marked enlargement of the regional lymph nodes in the area of the caecum and ascending colon. The entire colonic mucosa showed a prominent brush order of the surface epithelium indicating intestinal spirochetosis. No focal lesion was identified, however, the localised infection and hyperplastic regional pericolic lymph nodes due to intestinal spirochetosis were found to be the traction point of the intussusception. The patient recovered uneventfully and was discharged on sixth postoperative day.

**Case 4**

53 years old male presented with worsening abdominal pain of two weeks duration. The pain was in RIF pain with radiation to LIF and was associated with bloating and two episodes of vomiting. He also complained of diarrhoea which started with the pain and settled for few days after taking anti diarrhoeals, but then recurred. There was no similar history of such pain in past. There was no h/o recent travel, trauma, previous abdominal surgeries or anything suggesting malignancy. He was otherwise fit and well and was not on any regular medications. On examination his abdomen was rigid with generalised tenderness. There were no mass, hernia or expansile pulse noted. Bowel sounds were reduced and digital rectal examination revealed an empty rectum. Blood test showed raised
leukocyte count of 21.4 and CRP of 40. Rest of the FBS, U&E’s and LFT’s including amylase were within normal limits. CXR showed free sub diaphragmatic gas and AXR revealed dilated small bowel loops and air outlining the bowel wall. Subsequent CT scan reported marked dilatation of ascending and transverse colon up to splenic flexure at which point there was a focal wall thickening and stenosis extending over 9.6 cm. The overall features were suggestive of perforated obstructing neoplasm in splenic flexure. Patient was taken to theatres and had laparotomy and extended right hemicolectomy for a non viable perforated caecum in addition to intussusception at the splenic flexure.

**Case 5**

50 year old Caucasian female presented with central abdominal pain of two weeks duration associated with and diarrhoea and bilious vomiting for one week. Pain was crampy in nature and in waves initially but became constant on day of presentation. There was no history of sinister symptoms of weight loss, change in bowel habit or appetite prior to this episode. Apart from two C-sections in the past there was no other significant past medical history and the patient was not any regular medications. Systemic examination was insignificant and abdominal examination revealed a palpable bowel loop with central abdominal tenderness. There was no evidence of any hernia. Digital rectal examination revealed loose stools but no blood or mass. CT scan reported large intramural colonc lipoma with associated intussusception and caecal dilatation up to 7 cm. Patient underwent an extended right hemicolecetomy and ileo colic anastosmosis. Histology reported 20x60x40mm lipoma at ileo caecal valve in addition to intussusception of large bowel into the distal portion. There was no evidence of malignancy or atypia noted. Patient had an uneventful post operative period and was discharged on day 5 post op.

**Literature review and discussion**

Intussusception is a common cause of intestinal obstruction in the paediatric age group. It is rare in adults accounting for only 5% of all intussusceptions. Forty five cases were found within a cohort of 58000 operations performed from 1986-1998 in a surgical unit in Taiwan, i.e., about 4 cases per 5000 cases seen every year. They noted that intussusception caused 3% of all adult cases of intestinal obstruction.

In contrast to paediatric intussusceptions, 90% of which are idiopathic, there is reportedly an underlying cause in around 90% of adult cases, with a neoplastic lesion being the
commonest aetiology\(^3\). Non-neoplastic processes constitute 15-25\% of cases, and idiopathic or primary intussusception about 10\%\(^4\). Intussusception of the small bowel is the commonest presentation with the majority due to benign aetiology. Colonic intussusception is more likely to have a malignant aetiology with primary malignant lesions, adenocarcinoma and lymphoma accounting for 50-60\% of documented cases\(^5\). Inflammatory fibroid polyps are a well described, although rare, benign cause of small bowel obstruction\(^6, 7, 8, 9, 10, 11, 12\). A report of a series of 12 cases from South Africa\(^13\) revealed that the earlier cases were only diagnosed at laparotomy whilst more recent cases were diagnosed more precisely pre-operatively using ultrasonography, barium meal, CT and MRI scans.

Although intussusception typically presents as an acute surgical emergency in children the presentation in adults is more varied and adult intussusception can present with a broad spectrum of non-specific symptoms. A number of patients with chronic intermittent intussusceptions describe long histories of varying symptoms including intermittent abdominal pain, nausea, vomiting, weight loss and constipation\(^14, 3\). The symptoms in many cases are of long duration and diagnosis is often very difficult to detect clinically.

Radiological studies have a significant role to play in the diagnosis of these patients and the appearances of an intussusception on abdominal ultrasound, CT and MRI scans are virtually pathognomonic and are well documented\(^3, 15, 16, 17\), although the clinical presentation may not always allow accurate preoperative diagnosis. The classically described “target sign” is easily visualised in the CT scans obtained in our second case.

The treatment of intussusception in the paediatric age group has traditionally involved using hydrostatic enemas or pneumatic reduction with surgery being reserved for those cases in which these methods fail. More recently successful laparoscopic reduction has been described in children\(^18, 19\). There is very limited evidence of the efficacy of laparoscopic surgery for adult intussusceptions. Case reports have been published describing successful reduction of the intussusceptions laparoscopically but removal of the precipitating factor has been performed extracorporeally\(^20, 21, 22, 23\). But the authors accept that formal laparotomy is required for malignant causes.
The cases we have presented are excellent examples of the often insidious onset of this disease and the diagnostic problems which it poses. In our second case, the diagnosis was suggested pre-operatively, by clinical findings and confirmed by the characteristic images obtained on abdominal CT scanning.

It is important to keep in mind, this rare but important cause of subacute intestinal obstruction. Due to the insidious onset of the disease, characterised by vague abdominal symptoms and late clinical signs the diagnosis of is often elusive. Early consideration of this diagnosis may allow more prompt diagnosis and significantly reduce patient morbidity. Benign lesions are the commonest cause of intussusception overall but there is a significant association between colonic intussusception and malignancy. Identification of a colonic intussusception pre-operatively has significant implications in the counselling of the patients undergoing emergency laparotomy as it enables the surgeon to provide more accurate information on the likely procedure, risks and long-term prognosis to patients.
References

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