RECURRENT INTUSSUSCEPTION IN AN ADULT WITH VARIABLE APPEARANCES ON CT SCAN AND LAPAROTOMY FINDINGS

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SUMMARY

Intussusception in adult is a rare and the management of this is still controversy. We report such a case of recurrent proximal small bowel intussusception in an adult which has variable appearances on Computed Tomography and laparotomy findings. Intussusception can recur again if underlying caused was not treated or removed. Surgical intervention with treatment or removal underlying cause of intussusception in adult is suggested to prevent recurrent of intussusception.

Key words: Computed Tomography, adult, recurrent intussusception, laparotomy

1.0 Introduction

Intussusception of the bowel is defined as the invagination of the proximal segment of the gastrointestinal tract within the lumen of the adjacent segment. It is frequently seen in the children and presents with the classic triad. However, bowel intussusception in adults is a rare condition and about 5% of all cases of intussusceptions and almost 1%-5% of bowel obstruction (1). We report a rare case of proximal small bowel intussusception in adult which has variable appearances on Computed Tomography (CT) and laparotomy findings and can recur again if underlying caused was not treated or removed.

2.0 Case Report

A 33-year-old man was referred for abdominal pain for 6 months duration. Oesophagogastroduodenoscopy (OGDS) showed a duodenal mass with HPE suggestive of adenoma.

An urgent CT scan was performed and noted a long segment multiple concentric rings mass starting from the third part of the duodenum (D3 junction) (Figure 1). As contrast was seen in the distal jejunum and ileum until rectum, findings are in keeping with intussusceptions at D3 junction with partial obstruction. No lead point or bowel related mass was seen. Upper
gastrointestinal barium study was done on the next day also confirmed similar findings (Figure 2).

Patient was underwent urgent exploratory laparotomy. The intussusception was reduced and a 4cm mass was seen at D3 junction. However, the duodenal mass was not removed as it involved a complicated surgery. Patient was then referred to hepatobiliary center for removal of the duodenal mass, however, he defaulted.

Few months later he presented again with one day history of severe abdominal pain. Abdominal radiograph revealed dilated small bowel loops (Figure 3a). Another urgent CT abdomen was done and showed a long segment duodenojejunal intussusception with dilated small bowel and minimal free fluid (Figure 3b and 3c).

Emergency laparotomy was performed with the findings of duodenojejunal intussusception secondary to duodenal polypoidal mass and small bowel volvulus. Reduction of the intussusception and submucosal resection of polypoidal mass with released of volvulus and wedge resection of ischaemic ring was done. Microscopic examination revealed low grade tubulovillous adenoma. He was discharged well one week later.

**Figure 1.** Axial CECT abdomen (Figure 1a and 1b) just below to the level of mesenteric artery shows multiple concentric rings mass (white arrows) at the right lumbar region. Coronal reconstruction image (Figure 1c) at the same level showed ‘bowel within bowel’ appearance in keeping with intussusception (white arrows).
Figure 2. Spot images were taken from the upper gastrointestinal barium study (Figure 2a and 2b) showing free flow of contrast from stomach to the D3 level with abrupt termination of the contrast flow at D3 level. The stomach and proximal duodenum were dilated. No contrast seen distally. Supine plain abdominal radiograph (Figure 2c) was taken few hours later showing contrast seen filling up the distal jejunum and ileum until the rectum.
Figure 3. Supine plain abdominal radiograph (Figure 3a) shows multiple small bowel loops dilatation. Axial CECT abdomen (Figure 3b and 3c) shows abnormal bowel mass with multiple concentric rings extending inferiorly to the left iliac fossa suggestive of long segment duodenojejunal intussusception (white stars).

3.0 Discussion

Intussusception occurs when there is invagination of the segment of bowel and its mesentery (intussusceptum) into the downstream lumen of the same loop of bowel (intussuscipiens). The mechanism is unknown and it is believed that any lesion in the bowel wall or irritant within the lumen may alter normal peristaltic activity which leads to invagination (2). The most common locations where an intussusception can take place in the gastrointestinal are the junctions between freely moving segments and retroperitoneal or adhesion fixed segments (3).

There is an underlying trigger or nidus for the intussusception in adult about 90-95% of the cases (4). The majority of lead points in the small intestine consist of benign lesions such as benign neoplasms, inflammatory lesions, Meckel’s diverticuli, appendix and adhesions. Up to 30% of cases of intussusception in the small intestine are from malignant lesion (2). Mostly intussusception occurring in the large bowel is a malignant aetiology and represents up to 66% of the cases (2).
The adult clinical presentation in intussusception is often chronic and most patients presented with non-specific symptoms for intestinal obstruction. Abdominal pain is the most common symptom followed by vomiting and nausea. Abdominal masses are palpable in 24%-42% of patients (2).

Plain abdominal x-rays are the first modality of choice which signs of intestinal obstruction may provide information regarding the site of obstruction (5). Upper gastrointestinal contrast study may show a “stacked coin” or “coil-spring” appearance in patients with colo-colic or ileo-colic intussusception (5). The ultrasound features include the ‘target’ or ‘doughnut’ signs in the transverse view, and the ‘pseudo-kidney’ sign or ‘hay-fork’ signs in the longitudinal view. However, this requires handling and interpretation by an experienced radiologist, in order to confirm the diagnosis. Obesity or the presence of large amounts of air in the distended bowel loops may limit the image quality and the subsequent diagnostic accuracy.

Abdominal CT Scan is the most sensitivity radiological method to confirm intussusception with accuracy of 58%-100% (1). CT scan findings of intussusceptions have been reported extensively, but there are only few cases on CT of proximal small bowel intussusceptions. The features of CT scan include an inhomogeneous “target” or “sausage” shaped soft tissue mass with a layering effect and mesenteric vessels within the bowel lumen (2). A CT scan can define the location, the nature of the mass, its relationship to surrounding tissues and as well as it may help staging the patient with suspected malignancy which causing the intussusception (5).

Variability in clinical presentation and imaging features often make the preoperative diagnosis of intussusception is challenging and difficult task. Most surgeons accept that adult intussusception requires surgical intervention because of the large proportion of structural anomalies and the majority of patients have intraluminal lesions. However, the extent of resection and whether the intussusception should be reduced remains controversial (2). In contrast to paediatric patients, where intussusception is primary and benign, preoperative reduction with barium or air is not suggested as a definite treatment for adults (5).

4.0 Conclusion and recommendation

In conclusion, recurrent intussusception in adult is a challenging condition and dilemma for clinician and radiologists. A more holistic approach is recommended for proper management of this uncommon entity to prevent serious complications such as haemorrhage, intestinal gangrene, perforation or volvulus. Surgical intervention with treatment or removal underlying causes of intussusception in adult is suggested to prevent recurrent of intussusception.
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Declaration

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References


