

Simultaneous multiple intussusceptions in an adult patient caused by multifocal non-Hodgkin's lymphoma: The role of imaging

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ABSTRACT

Intussusception in adults is a rare but well-known cause of intestinal obstruction and is secondary to an underlying pathological bowel lesion in majority of cases. In adults, as the intussusception presents with atypical clinical features, accurate clinical diagnosis is not often possible, resulting in delayed treatment with serious complications. However, imaging can be of excellent help to the clinician in diagnosing the condition. Ultrasound can be used to diagnose the intussusception, whereas CT is of gold standard to detect the presence and location of intussusception and to characterize the causative lesion with its classical imaging appearance. Multiple simultaneous intussusceptions are rare. Here, we report a case of simultaneous jejuno-jejunal and ileo-ileal intussusception in an adult patient caused by multifocal non-Hodgkin's Lymphoma.

Key words: Adult; computed tomography; imaging; intussusception; lymphoma; multifocal; multiple; ultrasound

Introduction

Intussusception is invagination of a bowel segment into the next distal segment. Being recognized as one of the frequent causes of bowel obstruction in children, it is still a relatively infrequent cause of mechanical bowel obstruction in adults.^[1] In contrast to pediatric intussusception, which is idiopathic in 95% of cases, adult intussusceptions is associated with an underlying cause/pathology in 80% to 90% of cases.^[2]

In stark contrast to the childhood form, the adult intussusceptions almost always require surgery. More importantly, the lesion at the apex (lead point) may escape detection on clinical examination. Imaging is invariably needed in the evaluation of adult patients with intussusception.^[3]

Although the diagnosis of intussusception can be suggested

by ultrasound in most of the cases, contrast-enhanced computed tomography (CECT) is the imaging modality of choice in demonstrating the location of lesion, the presence of underlying cause, the characterization of the causative lesion, and the presence of any other associated pathology.^[4]

Simultaneous occurrence of multiple intussusception is a rare condition. Here, we report a case of simultaneous jejuno-jejunal and ileo-ileal intussusception caused by multifocal lymphoma.

Case Report

A 40-year-old male patient presented to the surgical out-patient department with diffuse abdominal pain of 3 months duration. On clinical examination, a vague mass was felt in right lumbar region. The initial clinical impression was mass per abdomen. The patient was referred for ultrasound for confirmation of the diagnosis and for further characterization of mass.

On ultrasound, there was a well-defined lobulated mixed echogenic mass of size 4.9 × 4.0 cm in right lumbar region [Figure 1] with associated intussusception in the form of multiple concentric echogenic layers of bowel on transverse section. In the peri-umbilical region, there was another area

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of intussusception, showing a 'target'-like appearance on transverse section [Figure 2] and a 'Sandwich'-like image on longitudinal section. In addition, there was mesenteric lymphadenopathy and mild ascites [Figures 1 and 2].

Abdominal CT with oral, rectal, and IV contrast confirmed the results of ultrasonography (USG) and showed jejuno-jejunal and ileo-ileal intussusception with a large heterogeneously enhancing mass in distal ileum [Figures 3 and 4]. Multiple enlarged mesenteric lymph nodes are seen with mild amount of free fluid in abdomen.

Laparotomy was done and during surgical exploration, there was a polyp in jejunum with jejuno-jejunal intussusception. In addition, a polypoidal mass was present in distal ileum, which resulted in ileo-ileal intussusception. Multiple enlarged mesenteric lymph nodes were found in abdomen with mild amount of free fluid in peritoneal cavity [Figures 5 and 6].

Histological examination revealed the ileal mass as

intermediate grade non-Hodgkin's lymphoma. The jejunal polyps also showed evidence of lymphoid infiltration with same appearance.

Discussion

Intussusception occurs when a proximal segment of bowel telescopes into an adjacent distal segment. It is the second most common abdominal emergency in children after appendicitis, and is idiopathic in 95% of cases.^[5] In contrast, intussusception in adults is rare, making up only about 1% of patients with bowel obstructions.^[1] About 80-90% of intussusceptions in adults are secondary to an underlying pathological lead point or pre-disposing condition, with approximately 65% due to benign or malignant neoplasm.^[2] Non-neoplastic processes constitute 15% to 25% of cases, while idiopathic or primary intussusceptions account for about 10%.^[2]

Intussusception can be classified according to the location

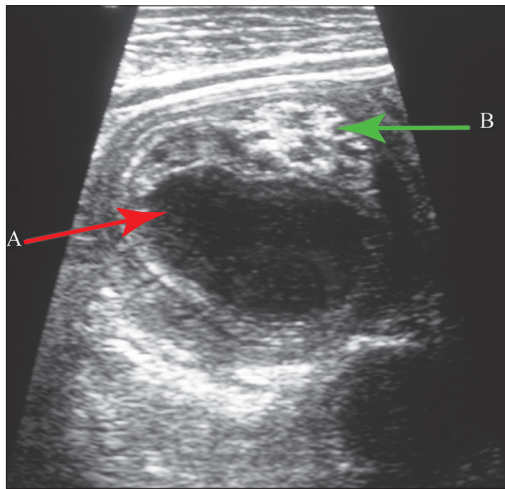


Figure 1: USG showing intussusception in periumbilical region with trapped mesenteric fat (arrow B) and enlarged mesenteric lymphnode (arrow A)



Figure 2: USG showing an area of intussusception in right lumbar region

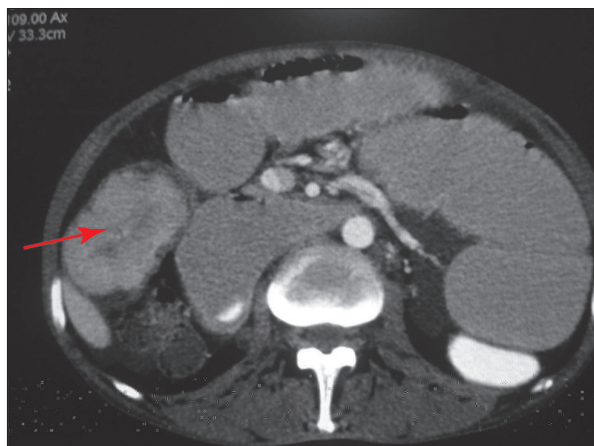


Figure 3: CECT abdomen showing a heterogeneously enhancing mass at the tip of intussusception in right lumbar region

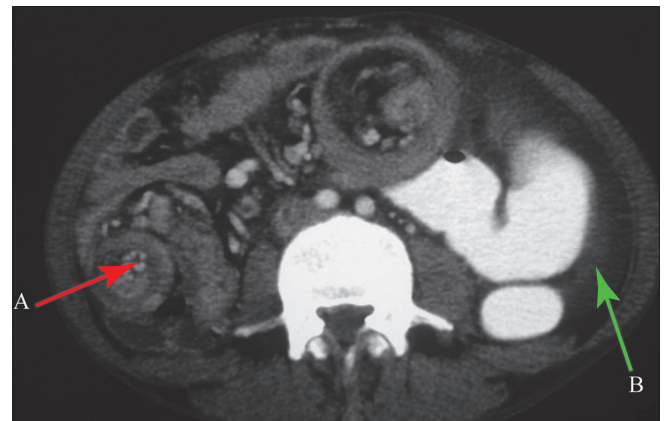


Figure 4: CECT abdomen showing intussusception in right lumbar region (arrow A) and in periumbilical region with mild ascites (arrow B)

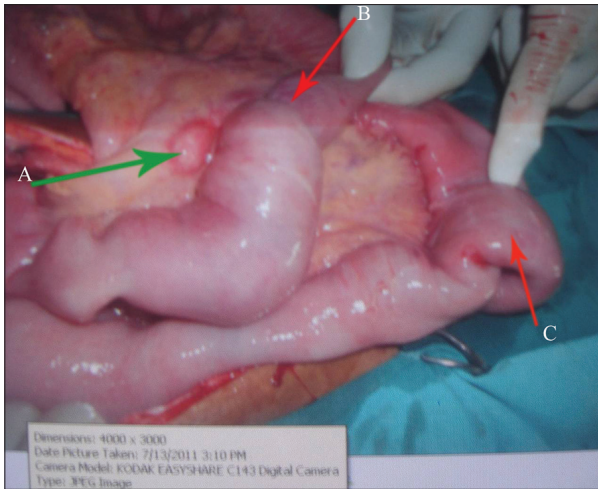


Figure 5: Intraoperative image showing two separate intussusceptions (arrows B and C) with enlarged mesenteric lymph node (arrow A)

(small bowel or colon). In 2/3rd of cases, intussusceptions arise in small bowel, and most of them are secondary to benign lesions. These include benign neoplasms (lipoma, leiomyoma etc.), adhesions, Meckel's diverticulum, lymphoid hyperplasia and adenitis, trauma, celiac disease, intestinal duplication cyst, and Henoch-Schonlein purpura. Malignant lesions causing intussusception account for about 15% of cases and are often metastatic; melanoma being by far the most common metastasis to cause intussusceptions.^[3] About 20% of all small bowel intussusceptions are idiopathic.

Intussusception in the large bowel is more likely to have a malignant etiology (50% to 60%). Primary malignant lesions like adenocarcinoma and lymphoma are the most common underlying malignant lesions in the colon. Benign lesions constitute about 30% and include neoplasms such as lipoma, adenomatous polyp, endometriosis (appendiceal), and previous anastomosis. Idiopathic intussusception occurs less often than in the small bowel (about 10%).^[2]

Multiple simultaneous intussusception is a rare peculiar variety of intussusception. This condition has been reported in patients with secondary melanomata,^[6] submucous lipoma,^[7] metastatic lung cancer,^[8] Peutz-Jegher syndrome,^[9] Rapunzel syndrome,^[10] following aneurysmal repair^[11] and in metastatic pleural mesothelioma.^[12]

Intussusceptions caused by lymphoma's involvement of small bowel are rare, and only a few cases were reported in literature.^[13] However, the incidence of this disease has been rising in recent years, particularly among immunocompromised patients. Associations of small bowel B-cell lymphomas with post-transplantation, inflammatory bowel disease, and some immunodeficiency syndromes have been reported. Intestinal T-cell non-Hodgkin's lymphomas have been described as often multifocal and most frequently localized in the jejunum or proximal ileum.

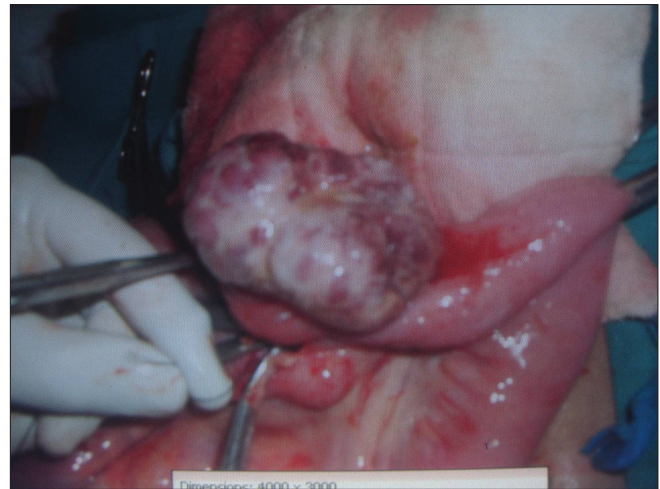


Figure 6: Intraoperative image showing lobulated mass in right lumbar region, at the apex of intussusception

The clinical presentation of primary small bowel non-Hodgkin's lymphoma includes non-specific abdominal pain, ileus, and weight loss. Diarrhea and fever may occur in 'T' cell NHL. Palpable abdominal mass is present in only 15% of cases. Lymphomas may also present with initial complications like perforation, bleeding, and obstruction, especially intussusception (as is the case of our patient).

Radiological diagnosis of intussusception can be suspected by ultrasonography (US). CT is needed to confirm the diagnosis of intussusception because of its virtually pathognomonic appearance. CT detects the presence of intussusception, its precise location, cause, obstructive syndrome and its mechanism. It can detect the organic cause in 71% of cases.^[10] It appears as a complex soft tissue mass, consisting of the outer intussusciens and the central intussusceptum. There is an eccentric area of fat density within the mass, representing intussuscepted mesenteric fat, and mesenteric vessels are often visible within it. A rim of orally administered contrast medium is seen at the periphery of mass representing coating of opposing walls. Intussusception appears either as an oblong sausage-shaped mass or as a target-like mass. CT can be useful to demonstrate the mass in case of lymphoma and the presence of abdominal adenopathy.

The treatment of intussusception in adult is always surgical, and resection may be necessary to some extent. Appropriate management of lymphoma includes surgery in combination with chemotherapy.

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