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Idiopathic Perforated Intussusception in Adult; Case Report

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ABSTRACT

Adult intussusception is typically less common as compared to paediatric population. Adult intussusception makes 5% of all the cases of intestinal obstruction and it may be primary or secondary in nature. Mostly patients present with abdominal pain in emergency department. CT scan is the preferred diagnostic imaging modality. Unlike in the pediatric population, where conservative management is often attempted, surgical intervention with formal resection is the preferred treatment approach in adults with intussusception because of high incidence of some associated pathology. We present a case report of a middle-aged woman who presented with signs and symptoms of intestinal obstruction and was diagnosed with intussusception and peritonitis. Exploratory laparotomy and formal resection of the affected bowel segment with ileostomy was performed, and no underlying pathology was identified that makes this case an unusual one.

Keywords: Idiopathic Intussusception, Ileostomy, Intestinal obstruction.

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Introduction

Intussusception is the medical term used to describe the condition where a section of the bowel (known as intussusceptum) invaginates or telescopes into the lumen of a neighboring section of the bowel (known as intussuscipiens).[1] Adult intussusception is a relatively infrequent occurrence, representing around 5% of all cases of intussusception, and accounting for 1% of cases of intestinal obstruction. Intussusception can be classified into two types: primaryor idiopathic, and secondary, which is usually associated with an underlying pathology. In adults,intussusception is typically of the secondary type, with up to 50% of cases involving a pathologiclead point, which may be malignant in nature.[2] The gastrointestinal tract's lead points are commonly associated with either malignant or benign conditions, such as lipomas, leiomyomas,adenomas, and neurofibromas. Postoperative adhesions, Meckel's diverticulum, foreign bodies,vascular anomalies, lymphoid hyperplasia, trauma, Celiac disease, cytomegalovirus colitis, lupus-related lymphoid hyperplasia, Henoch-Schönlein purpura, Wiskott-Aldrich syndrome, appendiceal stump, and inflammatory fibroid polyps are other potential causes of lead points.[4]

Intussusception can cause various complications, such as small bowel obstruction, bowel ischemia, necrosis, bowel perforation with peritonitis, and sepsis, which require urgent medical attention.[3] When intussusception occurs, it can block the mesentery's venous drainage, which can result in congestion and swelling of the tissue. This can impair peristalsis. Without timely treatment, intussusception can advance to bowel ischemia, necrosis, and eventually perforation.[5]

We present a case report of a middle-aged woman who presented with acute intestinal obstruction secondary to ileo-ileal intussusception that perforated. She underwent surgery, and formal resection of the affected bowel segment with ileostomy was performed. No underlying pathology was identified.

Case Report

A 42-years-old female presented in emergency department withabdominal pain and absolute constipation for two days. She also had abdominal distension for last one day. This was associated with bilious vomiting and decreased appetite. There was no associated fever.

The abdominal pain was generalized, gradual in onset, colicky in character, non-radiating, and constant. A systemic review revealed no significant findings. She had no known co-morbidities or significant past medical history. Her family history was also insignificant, especially in terms of colorectal carcinoma or intestinal polyps. There was no history of allergies, addiction, or drug intake.

Upon examination, the patient was lying supine and was well-oriented in terms of time, place, and person. Her GCS was 15/15, blood pressure was 110/70, pulse rate was 110/min, respiratory rate was 20/min, and she maintained SpO2 at room air. Chest auscultation showed bilateral equal air entry. The abdomen was distended with generalized guarding and tenderness. Percussion note was resonant, and bowel sounds were not audible. A digital rectal examination revealed an empty rectum and normal anal tone.

All baseline hematological investigations were within normal limits. An erect abdominal X-ray showed multiple air-fluid levels. On a supine abdominal X-ray, there was dilated small bowel. The patient was initially managed conservatively for approximately 24 hours, during which a nasogastric tube was inserted, resuscitation was performed, and she was continuously monitored. A CT scan of the abdomen was carried out with IV contrast, revealing a characteristic target sign with an edematous bowel wall and mild ascites. As the obstruction was not relieved with conservative treatment and due to peritonitis, the patient was counseled, and an exploratory laparotomy was planned.

On exploration, there was ileoileal intussusception with perforation in intussuscipien. (Figure1) Perforation was of approximately 0.5x0.5cm and there was about 200 ml of ascitic fluid. Approximately 8-10 cm of bowel segment was involved. (Figure 2) As manual reduction of the intussusception was not possible therefore resection of the involved small bowel segment was done and both the ends were brought out as stoma. Bowel wall was edematous due to which end to end anastomosis was not possible at that time.

Patient was shifted to intensive care unit and transferred to surgical ward after 24 hours. She was allowed oral intake on 1st post-operative day when stoma started to function. Patient had uneventful recovery and was discharged after four days. She was followed up in surgical OPD. After a month, early stoma reversal was done and patient recovered from it without any complication.

Figure 1: Ileoileal intussusception with perforation.

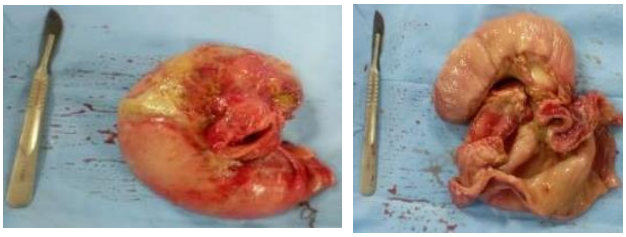

Figure 2: Resected segment of involved ileum

Discussion

Intussusception is a medical emergency that requires prompt surgical intervention. It wasfirst described by Paul Barbettein in 1674.[1] Intussusception is a condition where a proximal segment of the bowel and its mesentery invaginate into an adjacent distal segment, that leads to obstruction, impairs peristalsis and vascular flow. Although the exact mechanism is not completely understood, it is recognized that any abnormality within the bowel wall or an irritantwithin the lumen that disrupts normal peristaltic activity can serve as a lead point for the intussusceptum and initiate the invagination process into the intussuscipiens.[6] Food taken in and peristaltic activity that follows, results in constriction proximal to the the stimulus and relaxation distal to it, thus telescopes the lead point into the distal bowel lumen. Surgical intervention is necessary in cases where complications such as bowel necrosis, perforation, and peritonitis occur.[7]

Adult intussusceptions are rare, occurring at an incidence of 1 in 1,000,000 cases per year worldwide.[8] It is more common for adult intussusception to occur in the small bowel, accounting for 50%-88% of cases, as compared to the large bowel.[4] This is consistent with our case where it was ileoileal intussusception. Diagnosing intussusception

prior to surgery can be challenging at times. For accurately diagnosing the disease we need to take a comprehensive medical history and do detailed physical examination. The investigations that can be helpful include specific imaging techniques such as abdominal X-ray, ultrasonography (US), computed tomography (CT). Other imaging techniques that can be useful include magnetic resonance imaging (MRI), endoscopic procedures, angiography, and capsule endoscopy.

Abdominal X-ray is usually the first diagnostic test performed, as obstructive symptoms are typically prominent in most cases.[4] Ultrasonographyis a commonly used diagnostic test in cases of intussusception due to its affordability, availability, and non-invasive nature. On ultrasonography, intussusception shows typical signs i.e., target sign and doughnut sign on transverse view and the pseudokidney sign on longitudinal view. However, there are some limitations to this diagnostic tool, such as its dependence on the operator and difficulty in interpreting images when air is present due to obstruction. The accuracy of ultrasonography in diagnosing intussusception is reported to be around 78.5%, although it can be as high as 86.6% in cases where an abdominal mass can be palpated.[2] Computed tomography (CT) scan is considered the preferred imaging method for diagnosing intussusception, with sensitivity of 58% to 100% and a specificity of 57% to 71%.[2] CT scan canalso reveal pathognomonic signs of intussusception such as *target* or *sausage-shaped masses.* We performed CT scan of our case that showed characteristic target sign with edematous bowel wall and mild ascites.

The surgical removal of the affected part of the bowel is the standard treatment for adult intussusception. Non-operative reduction through enemas can also be used in some cases of adult intussusception, although surgical intervention is more commonly required. Additionally, some cases of pediatric intussusception may also require surgery if conservative measures are unsuccessful or if complications like bowel necrosis or perforation occur. Surgical intervention is often recommended by most surgeons for adult intussusception due to a significant incidence of malignancy and structural anomalies.[7] There is a lack of consensus among surgeons regarding the extent of bowel resection and manipulation during reduction. Unlike in children where intussusception is typically benign or idiopathic, non-operative reduction with barium or air is not preferred as a definitive treatment for adults because it is usually associated with an underlying pathology.[8]

It is rare to find idiopathic intussusception in an adult patient, as in this case where no cause was identified. Intussusception with perforation was confirmed per-operatively and the confirmed by histopathological examination of the resected segment.

Conclusion

Adult intussusception is uncommon and often caused by a lead point. Abdominal pain is the commonest symptom, so can be considered in differential diagnosis. CT scan is the preferred imaging technique to diagnose it. Formal surgical resection of the affected bowel segment is the treatment in adult intussusception with perforation. However, if the intussusception is in the small bowel and the segment is healthy without suspicion of malignancy, reduction can be attempted.

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