

## Adult intussusception caused by small bowel lipoma: A case study

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### ABSTRACT

Intussusception in the adult population is an uncommon condition that can present with nonspecific signs and symptoms, both acute and chronic. We present a case of small bowel intussusception due to an underlying submucosal lipoma in an otherwise well 64-year-old lady who presented to the emergency department with a 5-day history of central abdominal pain, nausea, and vomiting with decreasing bowel motions and flatus over the past 2 days. Computed tomography suggested a small bowel obstruction secondary to an intussusception and a small bowel resection was performed. The histopathology revealed a benign submucosal lipoma of the small bowel as a lead point for a small bowel intussusception. Small bowel intussusception is not often considered in the context of a patient presenting with abdominal pain. Its treatment in the adult population, as opposed to the pediatric population, is surgical resection as it is important to exclude an underlying malignancy.

**Key words:** *Intussusception, Small bowel, Obstruction, Lipoma*

Intussusception of the bowel is defined as a condition whereby a segment of proximal bowel (intussusceptum) invaginates into an adjacent distal segment (intussusciens) causing a bowel obstruction [1]. Although the entity is common in children, intussusception in the adult population accounts for only 1% of intestinal obstructions and 5% of all intussusceptions [2]. The clinical presentation in adults often includes nonspecific signs and symptoms and is, therefore, generally not considered in the initial differential diagnosis and a correct pre-operative diagnosis is made in only about 30% of cases [3,4]. With appropriate surgical management, the mortality rate is <1% [2]. We present a case of small bowel intussusception due to an underlying submucosal lipoma necessitating surgical resection.

### CASE REPORT

A 64-year-old lady presented to the emergency department with a 5-day history of central abdominal pain, nausea, and vomiting with decreasing bowel motions and flatus over the past 2 days. She was otherwise well, with no previous similar symptoms and had a history of a cesarean section. On examination, she looked unwell and was febrile with a temperature of 38°C, was tachycardic with a rate of 100 beats/min and blood pressure of 140/70. Her abdomen was tender centrally with evidence of peritonism.

A provisional diagnosis of a perforated viscus was considered. Blood investigations were within normal limits: Hemoglobin-11.0 g/L, white blood cells-9.0×10<sup>9</sup>/L, and platelets 200×10<sup>9</sup>/L. The patient was resuscitated and as she was clinically

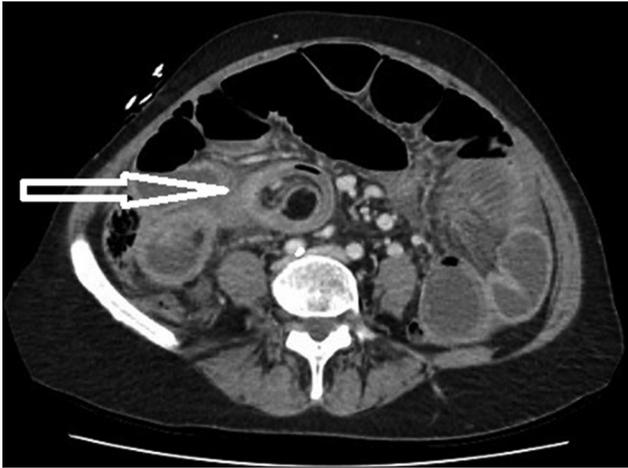
stable, a computed tomography (CT) of her abdomen was performed which showed an acute small bowel obstruction likely secondary to an intussusception with an associated mass with free intraperitoneal gas and fluid (Figs. 1 and 2).

The patient was taken to the operation theatre, and a laparotomy was performed. Dilated small bowel was found with a transition point associated with an intussusception 20 cm from the terminal ileum. An adjacent area of small bowel necrosis was evident with associated perforation and free fluid. The area of affected small bowel was resected and a stapled anastomosis performed. The pathology of the specimen showed a submucosal lipoma measuring 40 mm × 25 mm × 25 mm as the lead point of an intussusception with an adjacent area of necrosis with full thickness defect (Fig. 3).

The patient made a slow post-operative recovery complicated by an ileus and was discharged on day 10 postoperatively. She was subsequently reviewed in the clinic a month later and was asymptomatic.

### DISCUSSION

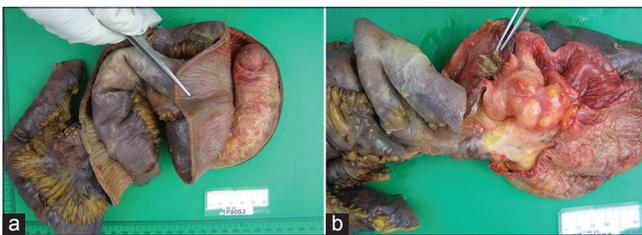
Intussusception is common in children, being the most common abdominal emergency in early childhood, particularly in children younger than 2 years of age [5]. It usually presents between 6 and 36 months of age as it is the most common cause of intestinal obstruction in this age group [4]. In children, intussusception is usually idiopathic or secondary to a viral illness. In experienced centers, nonoperative reduction using hydrostatic or pneumatic techniques is successful in approximately up to 80% of cases [6].



**Figure 1:** Computed tomography scan showing bowel-within-bowel configuration, in which the layers of the bowel are duplicated forming concentric rings



**Figure 2:** Intussusception viewed at right angles to the lumen showing a soft tissue “sausage” when imaged longitudinally



**Figure 3:** (a and b) Macroscopic view of small bowel with lipoma

Intussusception in the adult population accounts for only 1% of intestinal obstructions and up to 5% of all intussusceptions [2]. In adults, idiopathic intussusception only accounts for 8–20% of cases [7]. In the majority of cases in adults, a pathologic cause is identified which causes a lead point with up to 60% due to neoplasm (60% malignant and 40% benign) [8]. The vast majority of cases are secondary to benign polyps, enlarged lymph nodes, lipomas and malignant tumors including lymphomas, gastrointestinal stromal tumors, and adenocarcinomas [4,9]. It is, therefore, important that in any case of adult intussusception, malignancy be ruled out.

Intussusception can be classified into four types depending on its location: Enteroenteric or involving the small intestine; colocolic or involving the large intestine; ileocolic or involving the terminal ileum, ascending colon; and ileocecal or involving the ileocecal valve as the lead point [10].

Lipomas are rare benign tumors, representing 2.6% of nonmalignant tumors of the intestinal tract [11]. They can occur throughout the gastrointestinal tract but are most common in the colon (65–75% especially on the right), small bowel (20–25%), and foregut (5%) and can cause a diagnostic challenge, needing formal resection to obtain a definitive diagnosis [11].

Adult intussusception may present with nonspecific signs and symptoms (acute or chronic) including nausea, vomiting, abdominal distension, and gastrointestinal bleeding or may present with bowel obstruction and perforation (as was the case in our case report). The differential diagnosis may be varied and wide-ranging depending on the acuity and severity of the symptoms and may include complicated peptic ulcer disease, enteritis, or malignancy. The classic triad of intermittent abdominal pain, currant jelly stools, and a palpable tender mass was normally seen in children but is rare in adults, and it is not often considered in the differential of abdominal complaints.

Although adult intussusception can be detected using various imaging modalities including abdominal film, ultrasound, barium studies, colonoscopy, and magnetic resonance imaging, CT scan is the most commonly used and sensitive investigative modality showing “target” or “sausage”-shaped lesions as identified in our case report (Fig. 1), while also defining the location, nature, and relationship of the lesion to surrounding tissues with an accuracy that ranges from 60% to 100%.

In contrast to pediatric patients, where intussusception is primary and benign, pre-operative reduction with barium or air is not suggested as a definite treatment for adult [12]. Endoscopic resection has been more frequently reported in recent years for benign lesions confined to the terminal ileum and colon with promising results. However, it can result in an unfavorable complications including perforation or hemorrhage.

As adult intussusception is associated with a pathological lesion involving a lead point, most surgeons accept that adult intussusception requires surgical intervention. However, the extent of bowel resection and the manipulation of the intussuscepted bowel during reduction have been controversial [13]. Due to the risk of tumor spillage and dissemination, it is generally recommended that manual reduction not be attempted and an *en bloc* resection undertaken with anastomosis where feasible. However, when a pre-operative diagnosis of a benign lesion is safely established, the surgeon may reduce the intussusception by milking it out in a distal to proximal direction, allowing for a more limited resection [14].

Surgery becomes necessary if the lesion is symptomatic, if it is larger than 25 mm, or if the lesion exhibits signs of malignancy [7], which can be performed in an open fashion or laparoscopically.

**CONCLUSION**

Small bowel intussusception is an uncommon condition, often not considered in the context of a patient presenting with abdominal pain, both acute and chronic. Gastrointestinal lipomas are rare and pose a diagnostic challenge. Imaging and tissue biopsy, where feasible, are often inconclusive, and therefore, surgeons, endoscopists, and radiologists need to be aware of this entity in the evaluation of the patient with abdominal pain.

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