

# Intestinal Lipoma: A Rare Cause of Intestinal Intussusception

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## **Abstract:**

*Intussusception is the condition wherein there occurs invagination of one segment of bowel loop in to the adjacent bowel loop. It is an abdominal condition seen commonly among pediatric patients than in adults. Intussusception as a cause for intestinal obstruction is rare in adults and if present it is invariably suspected to be due to an organic pathology, acting as the lead point. Here we are reporting two cases of intestinal intussusception in adult patients, among whom one patient had presented with signs of intestinal obstruction. Their clinical presentation was in the form of abdominal pain, vomiting with or without abdominal distension and/or melena. Both the cases underwent laparotomy, which revealed intussusception and thereby underwent resection and anastomosis of the involved ileal segment. Histopathologically the leading point for the intussusception was a benign mass with features suggestive of a lipoma, submucosal in location. Intestinal submucosal lipoma which often remains as a silent pathology, presenting in the form of lead point for small bowel intussusception in adults is a rare presentation and thereby the need to consider it in the differentials, rather than malignancy as the cause for intussusception.*

**Keywords: Intussusception; Intestinal lipoma; Intestinal obstruction, Submucosal Lipoma**

## **Introduction**

Intussusception is invagination or telescoping of an intestinal segment (intussusceptum) into the lumen of another adjacent intestinal segment (intussusciens). The pathophysiologic mechanism is the peristaltic movement of a 'lead point'. It usually presents with typical features of intestinal obstruction and is more common in pediatric patients than in adults, accounting for less than 5% of cases.<sup>[1]</sup> In adult intussusception, a malignant small bowel tumor/ mass is often suspected to act as lead point and result in intussusception. Gastrointestinal lipomas are benign tumors occurring more commonly in the colon but also can be seen in small bowel. We describe an unusual presentation of 2 cases of intussusception occurring due to ileal lipoma, in adult patients and review some aspects of diagnosis and treatment.

## **Case profile**

### **Case 1:**

A 24 year young female presented with complaints of right lower abdominal colicky pain since 1 month and melena since 2-3 days. Vital parameters were normal. She had tenderness in the right iliac fossa and a normal per rectal examination. CT scan showed ileo-ileal intussusception with circumferential thickening and small volume mesenteric lymphadenopathy. Exploratory laparotomy revealed findings of ileo-ileal intussusception with minimal free fluid. An intraluminal mobile lump was palpable causing invagination and depression over serosa due to pulling from inside which was the pathological lead point (Figure 1a). Intraoperative reduction was attempted but could not be accomplished successfully. Subsequently, Resection & Anastomosis of the involved ileal segment, approximately 12cm in length was done.

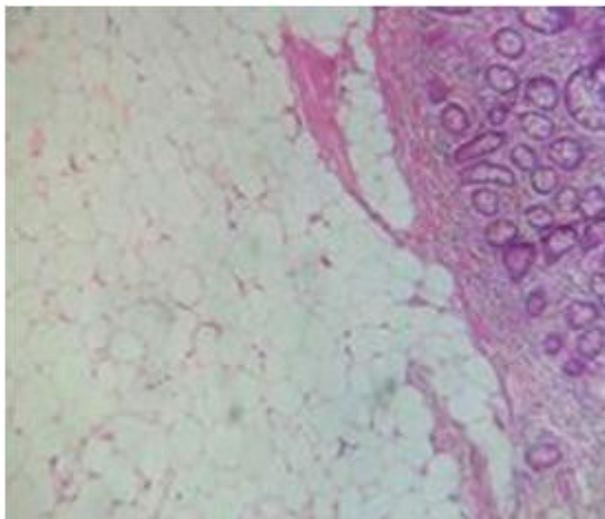


**Fig. 1** Intraoperative gross view (1a) and cut surface view (1b).

### Case 2:

A 20 year young male patient presented with complaints of right sided abdominal colicky pain along with vomiting for two days. He had normal vital parameters and a tender lump in the right iliac fossa. Per rectal examination was normal. X-ray of the abdomen revealed air fluid levels suggestive of intestinal obstruction. CT revealed a fat density inside the small bowel lumen with bowel in bowel appearance in the right iliac fossa. Features were of a small intestinal lipoma with query intussusception. Laparotomy revealed an ileo-ileal intussusception near the terminal ileum (Figure 1a). Resection & Anastomosis was the final surgical outcome.

Histopathological examination in both the cases showed a pedunculated polyp with intact overlying mucosa, on cut section. The lesion was submucosal, circumscribed with yellowish and fatty cut surface and without any heterogeneous, hemorrhagic or necrotic areas (Figure 1b). Histology showed thinned ileal mucosa with submucosal lesion composed of lobules of benign adipocytes separated by thin fibrous septae with features consistent with lipoma (Figure 2). Postoperative course was uneventful for both the patients and they were asymptomatic on 3 months of follow up.



**Fig. 2:** H & E stain showing lobules of benign adipocytes separated by thin fibrous septae

### Discussion

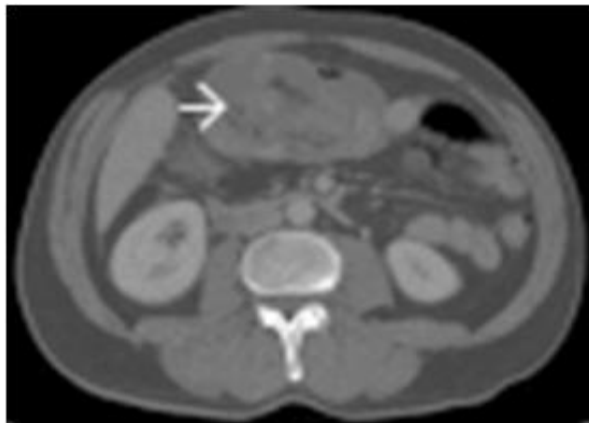
Intussusception is defined as the invagination of an intestinal loop in to the adjacent loop. Intussusception in children is classically associated with lethargy, sausage shaped abdominal mass, emptiness in right iliac fossa (Dance sign) and red currant jelly stools. In adult patients it is an uncommon condition, accounting for approximately 5% of total cases of intussusception and 1% of total cases of intestinal obstruction in adult patients.<sup>[2,3,4]</sup> Depending upon the site of involvement, intussusceptions are of three type's viz. ileoileal, ileocolic/ileocecal and colocolic intussusception.

Intussusception within due time precipitates into venous and lymphatic congestion at the lead point or the constriction point, leading to intestinal edema which hampers the propagation of the peristalsis in forward direction. This ultimately results in intestinal obstruction. Later ischemia, perforation and peritonitis can occur. In 90% of adult cases a predisposing lesion is identified, while intussusception in pediatric patients is less likely to be associated with an organic lesion. Differentiation between the small bowel and colonic intussusception is of vital importance in adult patients, as small bowel intussusception is associated with benign underlying lesion in 63% of cases while malignant etiology is expected in 58% cases of colonic intussusception.<sup>[5]</sup> The different benign entities can be lipoma, polyp, Meckel's diverticulum, lymph nodes or adhesions.

Gastrointestinal lipomas are benign tumors of mesenchymal origin. They are the second commonest small intestinal benign tumors.<sup>[6]</sup> They are predominantly submucosal in location and often protrude into the lumen, posing risk to develop into a lead point. Intestinal lipomas are most commonly located in the colon (65% to 75%, especially on the right side), small bowel (20% to 25%) and occasionally in the foregut (<5%).<sup>[7]</sup> Along the small intestine, ileum is the commonest site for lipoma.<sup>[2]</sup> Intestinal lipomas are generally asymptomatic; however, those larger than 2 cm may give rise to complications such as obstruction, intermittent nonspecific abdominal pain, diarrhea or bleeding.

The preoperative diagnosis is often difficult, because of the lack of specific clinical signs and problems in examining the small bowel.<sup>[3]</sup> CT and US of the abdomen are helpful radiological modalities. Histopathological evaluation plays vital role in excluding malignancy, especially in adult patients. On US, lipoma appears as a round, echogenic mass while intussusception is seen as pseudo-kidney sign.<sup>[3]</sup> In our case, on CT, lipoma was seen as well-circumscribed, ovoid or round, homogenous mass with an attenuation values between -40 and -120HU. The CT findings of

intussusception are of a “target” sign or a “sausage” mass.<sup>[2,8]</sup> (Figure 3)



**Fig. 3: CT scan image of abdomen showing the sausage mass appearance of the bowel loops.**

The treatment for lipomas depends on the clinical manifestations. Indications for surgery include obstruction, hemorrhage and malignant potential. A theoretical risk of sarcomatous change does exist, though less documented in the literature. Inherent risk of perforation is enhanced by its submucosal location. Furthermore, lipomas have high water content, making cautery less effective. Several thoughts prevail regarding the trial of intraoperative reduction of the intussusception; however it stands the risk of perforation and malignancy dissemination, especially in adults. Resection and Anastomosis of the involved segment is thereby the surgical treatment of choice. The extent of resection depends upon the location, bowel wall integrity, and vascular supply of the lipoma. Resection and anastomosis was done in both our cases, considering the symptomatology of respective patients and the age of the patients to exclude the malignancy risk.

## Conclusion

Intussusception is a rare presentation among the adult population and is often considered to be due to a malignant etiology. However as evident from our two case reports, small intestinal benign etiology, like lipoma, can also manifest as intussusception in adult patients. The nonspecific and often sub-acute symptoms make the preoperative diagnosis difficult, as against the typical presentation in children. Abdominal CT is considered the most sensitive imaging modality in the diagnosis of intussusception and identifying the presence of a lead point. Due to the strong association of adult intussusception with malignant organic lesions, surgical intervention is necessary.

## Abbreviations

CT: Computed Tomography

US: Ultrasonography

## Informed consent

Informed consent was obtained from all individual participants included in the study.

## Conflict of Interest

Authors declare that they have no conflict of interests and no financial support.

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