

# TWO DIFFERENT LEAD POINTS CAUSING ADULT INTUSSUSCEPTION: TWO CASE REPORTS WITH REVIEW OF LITERATURE

Sheeza Imtiaz,<sup>1</sup> Imran Shoukat<sup>2</sup>

<sup>1</sup> Department of Radiology, Patel Hospital, Karachi, Pakistan.

<sup>2</sup> Department of Surgery, Patel Hospital, Karachi, Pakistan.

PJR October - December 2016; 26(4): 365-369

## ABSTRACT

Intestinal invagination or intussusception is the leading cause of intestinal obstruction in children, but in adults it accounts for only 5% of all intussusceptions, and 0.003% - 0.02% of all adult hospital admissions. In contrast to childhood intussusception, which is idiopathic in 90% of cases, adult intussusception has a demonstrable lead point, which is a well-definable pathological abnormality in 70% - 90% of cases. This paper presents the diagnosis and management of two cases of adult intussusceptions caused by two different pathologies followed by review of literature.

**Key words:** Intussusception, Intestinal obstruction, Vanek's Tumor, Inflammatory Fibroid Polyp, Intestinal lipoma.

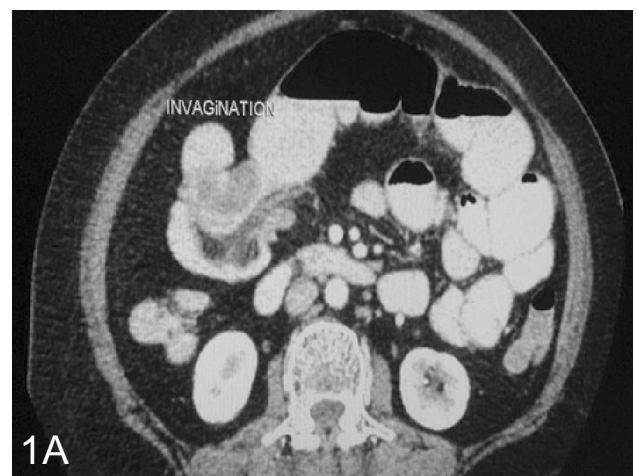
## Introduction

Intestinal invagination or intussusception is the leading cause of intestinal obstruction in children, but in adults it accounts for only 5% of all intussusceptions, and 0.003% - 0.02% of all adult hospital admissions. In contrast to childhood intussusception, which is idiopathic in 90% of cases, adult intussusception has a demonstrable lead point, which is a well-definable pathological abnormality in 70% - 90% of cases.<sup>1,2</sup>

## Case 1

A 56-year-old female was admitted with a one week history of intermittent and generalized abdominal colics. Abdominal examination revealed abdominal distension and sluggish intestinal sounds. Digital rectal examination did not show presence of feces, mucus or blood. Laboratory investigations were normal except for leukocytosis (12,600/mm<sup>3</sup>). Plain abdominal radiograph and Ultrasonography showed multiple dilated small bowel loops suggesting features of obstruction. A provisional diagnosis of intestinal obs-

truction was made and CT scan abdomen was recommended to rule out site of obstruction. CT scan abdomen with contrast showed dilated small bowel loops with invagination of a segment of ileum into ileum along with mesentery representing ileo-ileal small bowel Intussusception. (Fig.1A,1B). At the distal end of intussusceptions, a well defined rounded lesion is seen as a lead point. (Fig.1C) A diagnosis of sub



**Figure 1A:** Axial section of CT Abdomen with contrast showing ileo-ileal invagination with proximal dilatation of small bowel loops.

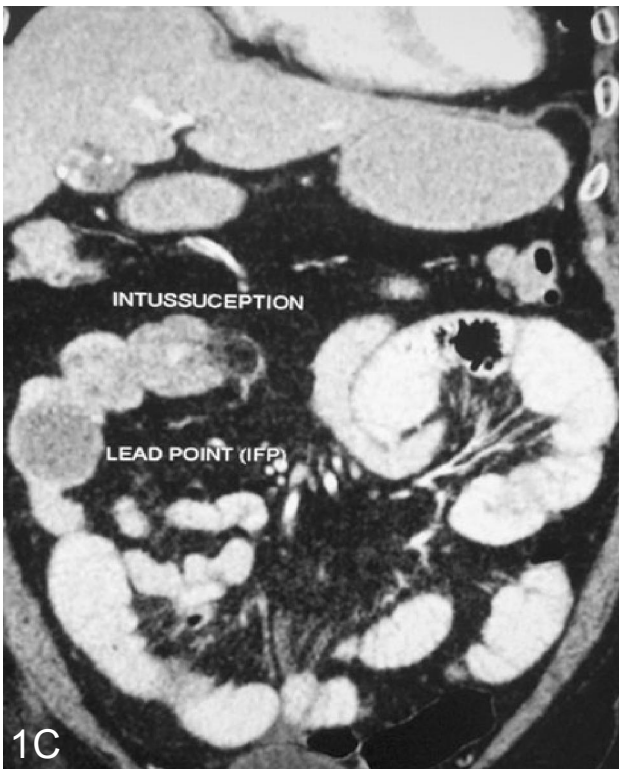
**Correspondence :** Dr. Sheeza Imtiaz

Department of Radiology,  
Patel Hospital, Karachi, Pakista.

Mobile: +92 333 3459851

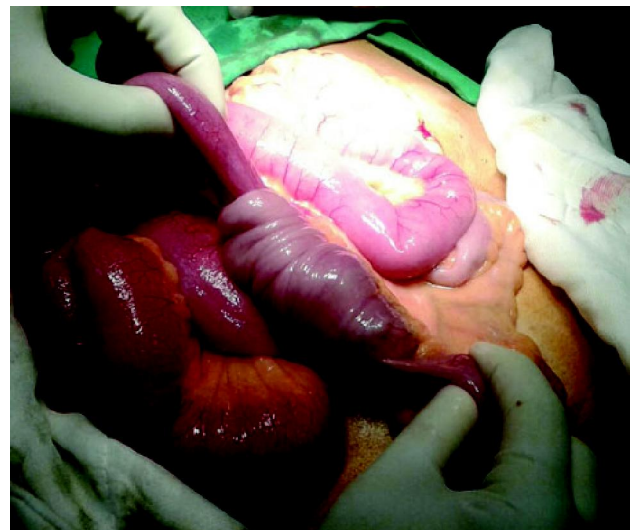
Email: dr.sheeza.imtiaz@gmail.com

Submitted 2 April 2016, Accepted 31 May 2016



**Figure 1B & 1C:** Sagittal and coronal sections of CT Abdomen showing a well defined soft tissue lesion as a lead point causing ileo-ileal intussusception. Biopsy proven inflammatory fibroid polyp (Vanek's tumor).

acute small bowel intestinal obstruction due to ileo-ileal Intussusception was made. Diagnosis was confirmed on exploratory laporotomy showing ileo-ileal intussuception approximately 40 cm proximal to illeocecal junction with an intraluminal mass of 5-6 cm as a lead point. (Fig. 2) Ileal resection and end to end anastomosis was performed. Histopathological evaluation revealed a polypoidal lesion with extensive surface ulceration representing an inflammatory fibroid polyp.

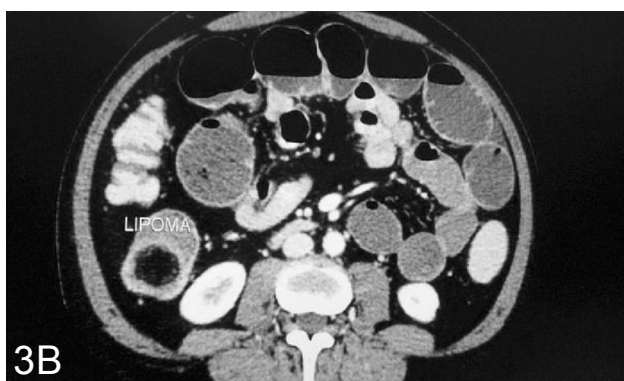


**Figure 2:** Per-operative view of ileo-ileal intussusception during exploratory laporotomy.

## Case 2

A 63 year old female presented in the emergency department with severe abdominal pain with absolute

constipation for one day. Patient was diabetic with impaired blood sugar levels. On examination, she had tense abdomen with tenderness over right iliac fossa region. CT Scan Abdomen with contrast was done that showed invagination of terminal ileum into cecum at ileo-cecal junction caused by a fat attenuation hypodense lesion in the cecum causing proximal dilatation of the small bowel loops resulting in intestinal obstruction. Mild amount of free fluid was also present in the lower abdomen. (Fig. 3A, 3B) A diagnosis of intussusception caused by intestinal lipoma was made and patient went for exploratory laparotomy. On per-operative finding, a well defined rounded, yellow colo-



**Figure 3A & 3B:** Axial sections of CT Scan Abdomen with contrast showing ileo-cecal intussusception caused by a fat attenuation hypodense intraluminal lesion causing intestinal obstruction. Biopsy proven intestinal lipoma.

red lesion was seen at ileo-cecal junction (Fig. 4) that was confirmed on histo-pathology as lipoma.

## Discussion

Adult intussusception remains a rare cause of persistent or intermittent chronic abdominal pain in con-



**Figure 4:** Per-operative view showing intraluminal lipoma as a lead point for ileo-cecal intussusception.

trast to its paediatric counterpart which is a well described and frequently reported entity.<sup>3</sup> The clinical presentation in adult intussusception is often chronic, and most patients present with non-specific symptoms that are suggestive of intestinal obstruction. As in these cases, patient presented with abdominal pain. Abdominal pain is the most common symptom followed by vomiting and nausea.<sup>1,2</sup> Abdominal masses are palpable in 24% - 42% of patients.

Intussusceptions may be classified as ileocolic, ileocecal, colo-colic and ileo-ileal.<sup>4</sup> Intussusception can also be classified according to the underlying etiological factors as primary (idiopathic) or secondary (benign or malignant lesion). Primary or idiopathic adult intussusception accounts for about 10% of cases and is more likely to occur in the small intestine. Secondary intussusception, which is more common in the adult population, is associated with a pathological condition involving a lead point. The etiologies of intussusception in the small bowel and the colon are quite different. In the small intestine, there is a predominance of benign processes, with up to 90% of cases, including hamartomas, lipomas, inflammatory fibroid polyp, leiomyoma, neurofibromas, adenomas, Peutz-Jeghers syndrome, adhesions, Meckel's diverticulum, lymphoid hyperplasia, trauma, celiac disease, intestinal duplication, Henoch-Schönlein-purpura, appendiceal stump, and tuberculosis. Malignant lesions (either primary or metastatic) account for 14% - 47% of cases of intussusception in the small intestine. On the other hand, intussusception occurring in the large bowel is more likely to have a malignant etiology and accounts for 43% - 80% of cases.<sup>5,6</sup>

Inflammatory fibroid polyps (IFP) have been reported as a rare cause of adult intussusception.<sup>7</sup> IFP are rare, benign, tumor-like lesions of the gastrointestinal tract. The lesion was first described by Vanek in 1949. Most frequently, they are localized in the gastric antrum, but can develop anywhere in the gastrointestinal tract. In the small intestine, the ileum is the most common site where these polyps cause intussusception. An IFP is a benign reactive lesion that occurs predominantly in adults. Most IFPs are polypoid masses smaller than 5 cm, although sizes up to 20 cm have been reported.<sup>8</sup> In this case size was 5-6 cm. Gastric and colon IFPs are typically identified incidentally, whereas small intestinal lesions can present with chronic abdominal pain, lower gastrointestinal bleeding, anaemia and rarely small bowel obstruction due to intussusception.<sup>9</sup>

Gastrointestinal lipomas are benign tumors that can occur anywhere along the gut in the small bowel. Their incidence ranges from 0.2% to 4.4%.<sup>10</sup> A preponderance for the female gender between 4th and 7th decade of life has been reported. They are more often located in the right hemicolon. Cecal lipomas account for approximately 20% of the colonic lipomas. The most common site for lipoma in the small bowel is the ileum. Intestinal lipomas larger than 2 cm may cause complications such as obstruction and bleeding. Intussusception is a common complication of intestinal lipoma. On CT, lipomas are seen as well-circumscribed, ovoid or round with sharp margins, and homogenous mass. In addition, they demonstrate characteristic attenuation values between -40 and -120 HU typical of the fatty composition.<sup>11</sup> An accurate diagnosis is based on a good medical history, thorough physical examination, and specific imaging modalities. Plain abdominal X-rays are typically the first diagnostic tool and show signs of intestinal obstruction, and may provide information regarding the site of obstruction.<sup>12</sup> Contrast studies can help to identify the site and cause of the intussusception, particularly in more chronic cases. Upper gastrointestinal series may show a "stacked coins" or "coiled spring" appearance. Barium enema examination may be useful in patients with colonic or ileocolic intussusception in which a "cup-shaped" filling defect is a characteristic finding.<sup>17</sup> Barium studies are obviously contraindicated if there is the possibility of bowel perforation or ischemia. Colonos-

copy is also a useful tool for evaluating intussusception, especially when the presenting symptoms indicate a large bowel obstruction.<sup>13</sup>

In recent years, CT has become the first imaging method performed, after plain abdominal X-rays, in the evaluation of patients with non-specific abdominal complaints. The characteristics of intussusception on CT are an early "target mass" with enveloped, eccentrically located areas of low density. Later, a layering effect occurs as a result of longitudinal compression and venous congestion in the intussusceptum. Abdominal CT has been reported to be the most useful tool for diagnosis of intestinal intussusception and is superior to other contrast studies, ultrasonography, or endoscopy.<sup>14</sup> The reported diagnostic accuracy of CT scans was 58% - 100%, especially in recent series.<sup>15</sup>

MRI is not applied routinely in diagnosis of intussusception in either children or adults. However, MRI can contribute to the radiological diagnosis of intussusception by demonstrating the "bowel-within-bowel" or "coiled-spring" appearance.

Surgery is the treatment of choice in adult intussusception. Exploratory laparotomy is frequently recommended as a treatment for fibroid polyps. The lesion seems to lack malignant potential and recurrence of the polyp has been reported only once.<sup>5</sup> For lipomas, surgical resection is indicated if symptomatic or to rule out liposarcomas by performing their histological examination.<sup>11</sup>

## Conclusion

Intussusception in adults is a rare entity and diagnosis may be challenging because of non-specific symptoms. A more careful approach is recommended in colonic intussusception because of a significantly higher chance of malignancy. CT is the most useful imaging modality of choice in the diagnosis and to properly delineate the lead point in adult intussusception. Treatment usually requires resection of the involved bowel segment.

## References

1. Azar T, Berger DL. Adult intussusception. *Ann Surg.* 1997; **226**: 134-8.

2. Begos DG, Sandor A, Modlin IM. The diagnosis and management of adult intussusception. *Am J Surg.* 1997; **173**: 88-94.
3. Taranez A and David L Berger: Adultintussuception. *Annals of surgery* 1997, **226(2)**: 134-138
4. Minaya Bravo AM, Vera Mansilla C, Noguerales Fraguas F, GranellVicent FJ. Ileocolic intussusception due to giant ileallipoma: Review of literature and report of a case. *Int J Surg Case Rep* 2012; **3(8)**: 382-4.
5. Yakan S, Caliskan C, Makay O, Denecli AG, Korkut MA. Intussusception in adults: clinical characteristics, diagnosis and operative strategies. *World J Gastroenterol.*2009; **15**: 1985-9.
6. Mohamud SO, Motorwala SA, Daniel AR, Tworek JA, Shehab TM. Giant ileal inflammatory fibroid polyp causing small bowel obstruction: a case report and review of the literature. *Cases J.* 2008; **1**: 341.
7. Singhal M, Singh P, Misra V, DhingraV, Bhatia R. Inflammatory fibroid polyp of small intestine: Report of two cases with review of literature. *JCDR.*2010; **4**: 3241-4.
8. Wysocki AP, Taylor G, Windsor JA: Inflammatory fibroid polyps of the duodenum: a review of the literature. *Dig Surg* 2007, **24**: 162-8.
9. Jacobs TM, Lambrianides AL. Inflammatory fibroid polyp presenting as intussusception. *J Surg Case Rep.* 2013; 2013(2).
10. T. Yao. "Primary small intestinal tumors," *Stomach and Intestine.* 2001; **36(7)**: p. 881.
11. M. A. Rogy, D. Mirza, G. Berlakovich, F. Winkelbauer, and R. Rauhs. "Submucous large-bowel lipomas-presentation and management. An 18-year study," *ActaChirurgica,* 1991; **157(1)**: 51-5.
12. Eisen LK, Cunningham JD, Aufses AH Jr. Intussusception in adults: institutional review. *J Am Coll Surg.* 1999; **188**: 390-5.
13. Hurwitz LM, Gertler SL. Colonoscopic diagnosis of ileocolic intussusception. *GastrointestEndosc.* 1986; **32**: 217-8.
14. Bar-Ziv J, Solomon A. Computed tomography in adult intussusception. *GastrointestRadiol.* 1991; **16**: 264-6.
15. Karamercan A, Kurukahvecioglu O, Yilmaz TU, Aygencel G, Ayta B, Sare M. Adult ileal intussusception: an unusual emergency condition. *Adv Ther.* 2006; **23**: 163-8.