



## Adult Sigmoid Colo-colic Intussusception Due to Polypoidal Lipoma: A Rare Case Report

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### Authors' contributions

This work was carried out in collaboration between all authors. Authors DA and VG designed the study, wrote the protocol and wrote the first draft of the manuscript. Authors Rahul Jain, SN and Ruchi Jain managed the literature searches, analyses of the study and performed the spectroscopy analysis. All authors read and approved the final manuscript.

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Case Study

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## ABSTRACT

**Aim:** Intussusception is defined as invagination or telescoping of proximal bowel loop (intussusceptum) into distal loop (intussusceptiens). More than 90% of adult colonic intussusceptions are associated with a mass acting as lead point. It is required for all treating surgeons to know about presentation and management of adult intussusception.

**Case Report:** A 40 year old man presented with pain in left iliac fossa and obstipation. Ultrasonography reveals target sign in left iliac fossa and CT scan showed sigmoid colo-colic intussusception with polypoidal submucosal lipoma as lead point. Patient was managed with en bloc resection and anastomosis in continuity.

**Discussion:** Intussusceptions are very rare in adult population and less than 50 cases has been reported till now of colo-colonic intussusception with lipoma as lead point. About 60% of adult colonic intussusception are caused by malignant growth. CT scan is able to diagnose correctly in about 95% cases and role of colonoscopy is debatable for reduction of intussusception.

**Conclusion:** Although rare, pathophysiology of adult intussusception should be understood clearly

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for proper management. Early CT scan should be used in doubtful cases to diagnose intussusception.

**Keywords:** Adult intussusceptions; submucosal lipoma; colo-colonic intussusception.

## 1. INTRODUCTION

Intussusception is defined as invagination or telescoping of proximal bowel loop (intussusceptum) into distal loop (intussusceptens). Intussusception, primarily a pathology of infancy, is rare in adults comprising less than 5% of total cases [1]. It is cause for intestinal obstruction in only 1-5% of cases in adults [1]. Most common sites for intussusception among adults is entero-enteric followed by ileo-colic, colo-colic and sigmoido-rectal [2]. More than 90% of adult colonic intussusceptions are associated with a mass acting as lead point, which is malignant in 60% cases and a lipoma in 10-20% cases [3]. We present a case of sigmoid colo-colic intussusception caused by polypoidal lipoma and managed by sigmoidectomy. About 50 cases have been reported in indexed literature of colo-colic intussusception caused by lipoma [4].

## 2. CASE REPORT

A 40 year old man presented to Surgery OPD with complaints of pain in left lower abdomen and obstipation for 10 days. There was no history of vomiting or bleeding per rectum. Patient was stable hemo-dynamically and showed tenderness in left iliac fossa. There was no guarding or rigidity and no mass was palpated with exaggerated bowel sounds. Hemoglobin was 11.5 gm/dl, TLC 10400 cells / cumm,

platelets counts 2.40 lacs/cumm. Blood urea was 27 mg/dl and serum creatinine 0.9 mg/dl, serum sodium 144 meq/L and serum potassium was 3.8 meq/L. Carcino-embryonic antigen (CEA) was 1.7 ng/ml. On ultrasonography, there was evidence of a bowel loop entering into another bowel loop giving target sign in left iliac region. Abdominal radiography did not show any abnormality. Patient was kept nil per oral with IV fluid supplementation.

Computed tomography of abdomen revealed colo-colic intussusception involving sigmoid colon with polypoidal lipoma of size 3.2 X 5.1 cm as lead point (Fig. 1). Colonoscopy was performed and a large polypoidal mass of size 4.5 cm with smooth overlying mucosa was seen in sigmoid colon, no other synchronous lesion was identified and biopsy from mass showed inflammatory necrotic tissue. No intussusception was identified at the time of colonoscopy. Patient underwent laparotomy with sigmoidectomy followed by decending colon -- distal sigmoid colon anastomosis in continuity. Biopsy from resected segment confirmed diagnosis of lipoma with surface ulceration.

## 3. DISCUSSION

Intussusception is a process in which a proximal segment of bowel telescopes or invaginates into adjacent distal bowel segment. The pathology is not clearly understood and a number of



**Fig. 1. CECT images showing lipoma with intussusception**

hypothesis has been given including lesion in bowel wall acting as foreign body initiating violent peristalsis causing contracted central part to move into dilated distal part. Another theory mentions altered normal peristaltic activity which promotes invagination of bowel wall [5,6]. Intussusception is most common cause of intestinal obstruction in children aged 3 months to 6 years, but is extremely rare in adult age group comprising only 5% of total cases [1]. About 90% of adult intussusception is caused by definite underlying organic cause and only 10% are idiopathic, while its vice versa for paediatric age group. Entero-enteric variety is most common involving jejunum or ileum (40-50%) followed by ileo-colic, colo-colic and sigmoido-rectal [2]. In the small intestine, benign lesion represents most of lead point (60-70%) and malignant only 20-25%. Conversely in large bowel malignant lesion constitute 60-70% of lead points and benign lesion only 10-20% [7]. Lipoma are 2<sup>nd</sup> most common benign lesion of large bowel with incidence rate of 0.035-4.4, after adenomas, but are most common benign lesion to cause intussusception [8].

Classic triad of abdominal pain, palpable mass and bleeding per rectum which is seen in intussusception in paediatric age group, is seldomly present in adult patients. In adults intussusception presents with subacute or chronic nonspecific symptoms or obstruction with vomiting. Rarely tip of lipoma may ulcerate presenting as bleeding.

Intussusception may be diagnosed with ultrasonography showing bowel within bowel lesion (target sign) or barium enema depicting claw sign, but computed tomography (CT) scan is considered superior to all other modalities. CT scan shows characteristic features of a target or sausage shaped soft tissue mass with a layering effect. Identification of lead mass is often possible and lipoma shows an ovoid mass with fat attenuation in CT scan which confirms diagnosis [9,10]. Sensitivity of CT scan is 70-90% and specificity of 100%. Colonoscopy had also been used in evaluating intussusception mainly when large bowel obstruction symptoms are present. It may allow direct visualization of pedunculated or sessile based smooth mass of lipoma. Colonoscopy may show tent sign (mucosa easily lifted above mass) and cushion sign (depression seen on pressing with colonoscope over mass) in case of lipoma [11]. It may help in distinguishing benign lesion from malignant lead points before contemplating reduction.

Management of colo-colic intussusception involves en-bloc resection and anastomosis of intussusception segment without reduction. Reduction may cause intraluminal seeding or venous dissemination of malignant cells and may also cause perforation during manipulation and bowel wall edema [12]. If the underlying lead point is suspected to be malignant or if resected segment ( without reduction) is not massive, en-bloc resection should be considered in all adult intussusception, mainly colonic intussusceptions. Lipoma <2 cm size generally are asymptomatic and does not require intervention, but lipoma > 2 cm usually require resection. Endoscopic removal of lipoma may cause bowel perforation [13]. In our case if it would have been an isolated lipoma with symptoms of obstruction we could have removed only a small part of sigmoid containing the lipoma, but as the lipoma led to intussusception hence we considered removing part of sigmoid containing intersusseptum and intussusception. Surgery done was not a radical resection but limited resection of the sigmoid colon.

#### **4. CONCLUSION**

The rare possibility of intussusception in adults should always be kept in mind while treating patients with intestinal obstruction and treating doctors should be well-versed with pathophysiology of the same. Early CT scan should be considered in atypical cases whenever facilities are available for optimum management.

#### **CONSENT**

All authors declare that 'written informed consent was obtained from the patient for publication of this paper and accompanying images'.

#### **ETHICAL APPROVAL**

All authors hereby declare that all experiments have been examined and approved by the appropriate ethics committee and have therefore been performed in accordance with the ethical standards laid down in the 1964 Declaration of Helsinki.

#### **COMPETING INTERESTS**

Authors have declared that no competing interests exist.

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