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# Adult Intussusception Caused by a Sigmoidal Lipoma: Case Report and Literature Review

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**Abstract** **Case Report**

***Introduction*:** Intussusception is defined as the telescoping of one intestinal segment into the adjacent segment. It is rare in adults and most often secondary to an underlying cause, but the exact mechanism remains undefined. It is classified based on location and etiology. Malignant pathology is the most common, particularly for colonic intussusception. Lipoma is a rare cause of intussusception. ***Case Report*:** In this article, we report the rare case of a patient who presented with sigmoid intussusception due to a lipoma, treated by surgical resection. ***Discussion*:** Intestinal intussusception in adults is different from that in children, which is most often idiopathic. Malignant tumor pathology represents two-thirds of colonic intussusceptions. Colonic lipoma is a rare cause of intussusception; the diagnosis is established through CT scans and colonoscopy, but it is often difficult to differentiate it from cancer. This is why the case we present is interesting due to its location in the sigmoid colon, which is not common, and the diagnostic uncertainty poses a challenge for therapeutic management. ***Conclusion*:** The management of colonic intussusception in adults is not universally accepted; in cases of diagnostic uncertainty regarding the histological nature of the causal pathology, en bloc surgical resection without prior disinvagination seems to be the most appropriate approach given the high risk of malignancy.

**Keywords:** Adult Intussusception, sigmoidal lipoma, management, surgery.



## 1. INTRODUCTION

Intussusception is defined as the telescoping of one segment of the digestive tract into an adjacent segment [1].

The exact mechanism which precipitates intussusception intestine is still unknown, but, It is generally believed that any lesion in the bowel wall or irritant normal within the bowel lumen which alters the peristaltic pattern is capable of starting an invagination [2].

A lead point is common and can be found in 70–90% of adult intussusceptions, contrary to pediatric intussusception, which is idiopathic in 90% of cases [3].

Intussusception is classified based on location, as well as malignant, benign, or idiopathic etiology.

For invaginations secondary to a benign etiology, lipoma ranks third after hyperplastic and adenomatous polyps [3].

Lipoma is the most common nonepithelial benign tumor that occurs in the colon; it makes up 65% of the lipomas of the gastrointestinal tarct. The incidence of lipomas of the colon in routine autopsy of all cases has been reported to vary between 0,035 to 4,4% [4].

Here, we report the case of a 70-year-old female patient who presented with sigmoid intussusception due to a lipoma, treated by surgical resection.

## 2. PRESENTATION OF CASE

This is a 70-year-old female patient with no significant medical history, who presented with recurrent subocclusive syndromes that resolved spontaneously over the past 3 months, associated with episodes of mild rectal bleeding. There were no other associated symptoms, notably no abdominal pain or vomiting. Clinical examination was unremarkable except for slight tenderness in the left iliac fossa. All of this occurred in the context of preserved general condition.

A colonoscopy was performed and revealed a large pedunculated polypoid formation with endoluminal development located 20 cm from the anal margin, obstructing the lumen. The pathological study showed no specific or tumoral lesion within the limits of the communicated sample.

The patient also underwent an abdominal-pelvic CT scan, which revealed a sigmoid-to-sigmoid and meso-sigmoid intussusception, creating a target sign appearance associated with diffuse wall thickening, micronodular infiltration of the perilesional fat, and infiltration of the mesorectal fat (Fig 1).


**Fig 1 (A, B): Axial CT scan images showing the sigmoid-to-sigmoid intussusception with diffuse wall thickening**

The biological assessment was normal, with no anemia or biological inflammatory syndrome, and the tumor markers were negative.

The patient was presented at a multidisciplinary consultation meeting, and given the persistence of symptoms and the potential malignancy of the mass causing the intussusception, the decision to operate on the patient was made.

The patient was approached laparoscopically, and intraoperative exploration revealed a large invaginated mass in the sigmoid loop measuring approximately 8 cm, associated with colonic and ileal dilation upstream, making dissection under laparoscopy difficult, hence the decision to convert. There were no other lesions, notably no hepatic lesions or peritoneal carcinomatosis nodules.

Despite the preoperative pathological examination which did not show signs of malignancy, and given the suspicious macroscopic appearance of the tumor (Fig 2), we decided to perform a carcinological resection of the tumor. Thus, a low segmental left colectomy was performed, respecting safety margins of 5 cm on either side of the invaginated mass without prior disinvagination, with lymph node dissection at the base of the sigmoid trunk; and the continuity was restored by a mechanical colorectal anastomosis using a circular stapler.

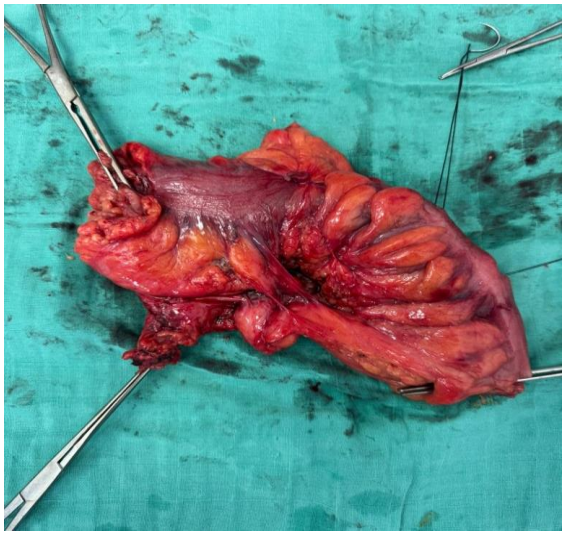

**Fig 2: Surgical specimen of low segmental left colectomy removing the intussusception**

The postoperative course was uncomplicated, with good clinical and biological progress. Bowel function resumed on day 3, and the patient was able to start eating again on day 4. She was discharged on day 5.

The pathological examination of the surgical specimen revealed a remodeled colonic lipoma.

With a follow-up of 4 months, the patient is doing well and no longer reports subocclusions or rectal bleeding. A follow-up colonoscopy is scheduled 6 months postoperatively to explore the rest of the colon.

## 3. DISCUSSION

Adult intussusception is entirely different from the pediatric form in its clinical, pathological, and therapeutic aspects. Pediatric intussusception is a common disease, generally idiopathic without an identified lead point. The clinical presentation is often acute and easily recognized by the classic triad of abdominal pain, rectal bleeding, and a palpable abdominal mass. Most cases can be successfully treated by hydrostatic or pneumatic reduction without surgical intervention [5].

On the other hand, adult intussusception is a rare disease, accounting for only 1% of intestinal obstructions and nearly 5% of all intussusception cases [6-8].

Depending on the location, intussusceptions are classified as ileo-ileal, ileo-colic, and colo-colic [9]. Colonic intussusception is rarer and accounts for 19.9% of all intussusceptions [10].

According to the etiology of adult intussusception, the rates of malignant tumors, benign tumors, and idiopathic causes are 32.9%, 37.4%, and 15.1% respectively [10].

Two thirds of adult colo-colonic intussusceptions are secondary to a primary colonic cancer. The remaining third are secondary to polyps, adenomas, endometriosis, previous anastomosis and lipomas [11].

Lipoma is the third most common benign tumor after hyperplastic and adenomatous polyps and the most nonepithelial benign tumor that occurs in the colon ; the majority (90%) are sobmucosal in location, the remaining ones are subserosal in location and related to the appendices epiploicae [12].

Lipoma of the colon is predominantly localized in the ascending colon (61% of cases), followed by the descending colon (20.1%), the transverse colon (15.5%) and the rectum (3.4%) [13].

They are more common in women with a peak incidence between 50 and 60 years of age [14].

Symptoms, when present, seem to be related to the size of the lipoma. Lipomas less than 2 cm in diameter rarely produce symptoms, whereas lipomas greater than 2 cm in diameter are more likely to be symptomatic. Fifty percent of the patients with lipomas 3 to 4 cm in diameter have symptoms, and if the lipoma is greater than 4 cm in diameter, 75% of the patients have symptoms [12].

The most common symptoms are abdominal pain followed by change in bowel habits, bleeding, signs of obstruction, signs of intussusception, or, rarely, a palpable mass [12].

The diagnosis can be made by imaging methods, particularly CT scans, which show a fatty density mass, but its performance is reduced for lipomas smaller than 2 cm. Colonoscopy allows direct visualization of the tumor, and biopsies can confirm the histological nature of the lipoma [14].

However, the diagnosis of lipoma usually is not made preoperatively. These lesions are often confused with carcinoma and adenomas because of the age range of patients and the similarity in the roentgenologic appearance [12].

Until now, there is no universally accepted approach to the optimal treatment of adult intussusceptions. Given the large proportion of underlying pathological lesions, surgical management continues to be the mainstay treatment modality for most patients, and en bloc resection without reduction is recommended for colonic intussusceptions considering the high rate of malignancy [15-17].

## 4. CONCLUSION

Adult intussusception is relatively rare compared to that in children and is almost always secondary to an underlying cause.

The combination of colonoscopy and CT scan is an interesting method for positive and etiological diagnosis.

However, the high frequency of malignant etiologies of intussusception, particularly colonic, and the difficulty in establishing a differential diagnosis with benign causes pose a real challenge in managing this pathology.

In the absence of a certain diagnosis, surgical treatment by en bloc resection without prior disinvagination seems to be the best option given the high risk of malignancy.

**Consent of publication**

Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

**Ethical Approval:** Ethical approval is exempt/waived at our institution.

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**Author Contribution**

MMA designed the paper. AA and AN collected the data. AA and AN wrote the first draft of the manuscript. HS participated in the article design and critically reviewed the manuscript. AH, MR, FS, and YB critically reviewed the manuscript. All authors approved the final version of the manuscript.

**Guarantor:** Abdelaziz Alillouch

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**Data Availability Statement**

The data that support the findings of this study are available from the corresponding author upon reasonable request.

**Competing Interests:** The authors have no conflicts of interest and source of funding. The subject of study had no commercial interest, no financial or material support.

**Ethics Statement:** Drs Abdelaziz Alillouch, Aymen Naass, Hamza Sekkat, Youness Bakali, Farid Sabbah, Mohammed Raiss, Abdelmalek Hrora and Mouna EL Alaoui Mhamdi declare no conflict of interest.

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