

Adult Splenic Flexure Colocolic Intussusception Due to a Submucosal Colonic Lipoma Presenting as Acute Abdomen

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Abstract

Adult intussusception is uncommon and usually results from an underlying structural abnormality, particularly in the colon, where malignancy is a major concern. We present a case in which a young woman experienced 4 days of crampy lower abdominal pain, constipation, nausea, vomiting, and inability to pass flatus. Abdominal examination showed tenderness, hyperactive bowel sounds, and no distention; vital signs were stable. Laboratory tests were largely unremarkable, including a white blood cell count of $9.3 \times 10^9/L$. Contrast-enhanced computed tomography of the abdomen identified a 9 cm colocolic intussusception at the splenic flexure, led by a 6 cm fat-containing lesion. Follow-up CT showed ongoing intussusception, bowel wall thickening, and a 7.2×3.8 cm fat-density lesion, confirming a fixed lead point. After a gastroenterology and surgical consultation, a laparoscopic left hemicolectomy was performed. Intraoperative findings confirmed intussusception, and histopathology revealed a benign submucosal colonic lipoma. This case underscores the rare occurrence of splenic flexure intussusception caused by a large submucosal lipoma, underscoring that persistent intussusception with a risk of malignancy warrants surgical management. Colonic lipoma should be considered in the differential diagnosis of adult colocolic intussusception, especially when malignancy cannot be excluded preoperatively.

Keywords: Adult intussusception; Colocolic intussusception; Splenic flexure; Colonic lipoma; Submucosal lipoma; Acute abdomen; Left hemicolectomy; Lead point lesion

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Introduction

Adult intussusception is rare and represents a minor fraction of bowel obstruction cases compared to the pediatric population [1]. In contrast to childhood intussusception, which is generally idiopathic, adult cases are often associated with an identifiable structural lead point. This distinction is clinically significant, as neoplasia is prevalent in adult intussusception, especially when the colon is affected [2]. As a result, colonic intussusception in adults often raises concern for an underlying malignant lesion and typically necessitates definitive surgical resection rather than nonoperative reduction [3].

Colonic lipomas are benign mesenchymal tumors composed of mature adipose tissue, most commonly originating from the submucosa. Although many colonic lipomas are incidental and asymptomatic, larger lesions can result in abdominal pain, bleeding, altered bowel habits, obstruction, or serve as a lead point for intussusception [4]. In evaluating these cases, cross-sectional imaging is valuable, as colonic lipomas typically appear on computed tomography (CT) of the abdomen and pelvis as well-circumscribed intraluminal masses with fat attenuation. However, the presence of intussusception, infarction, or additional bowel wall changes may complicate radiologic interpretation [5, 6].

Adult colocolic intussusception caused by a benign colonic lipoma is rare, with splenic flexure involvement particularly uncommon. Because this presentation can closely resemble colonic malignancy both clinically and radiographically, it poses significant diagnostic and therapeutic challenges [7, 8]. To illustrate, this report describes a case of adult splenic-flexure colocolic intussusception caused by a large submucosal lipoma in a woman who presented with acute abdominal pain, nausea, vomiting, and obstipation, and was ultimately managed with left hemicolectomy.

Case Report

Investigations

A 34-year-old woman with a medical history of sinusitis, migraine, fibromyalgia, and gastroesophageal reflux disease presented with a 4-day history of crampy, nonradiating lower abdominal pain

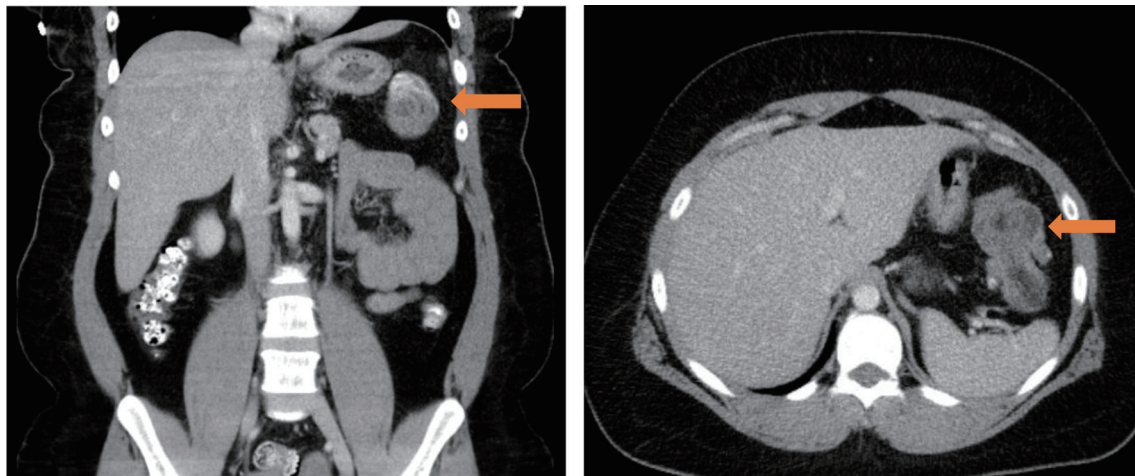


Figure 1. Initial computed tomography (CT) of abdomen/pelvis, coronal view (a), axial view (b), demonstrating splenic flexure colocolic intussusception with a lead point.

accompanied by constipation, nausea, nonbloody emesis, and inability to pass flatus. She reported no fever, weight loss, appetite changes, or recent medication adjustments. Upon presentation, vital signs were stable. Physical examination revealed a soft abdomen with mild lower abdominal tenderness and hypoactive bowel sounds, without evidence of peritoneal irritation.

Given her symptoms and examination findings, initial laboratory investigations were performed and were unremarkable. Results included a white blood cell count of $9.3 \times 10^9/L$, hemoglobin of 11.3 g/dL, lactate of 0.9 mmol/L, normal renal function, lipase of 6 U/L, negative serum human chorionic gonadotropin, and an unremarkable urinalysis.

Diagnosis

To further evaluate her condition, CT of the abdomen and pel-

vis was obtained. This revealed a short-segment splenic flexure colocolic intussusception measuring approximately 9 cm, with a 6 cm fat-containing intraluminal lesion serving as the lead point, as illustrated in Figure 1. There was no evidence of lymphadenopathy, obstruction, perforation, or significant bowel dilatation. Repeat imaging the following day demonstrated persistent focal colonic intussusception, low-attenuation bowel wall thickening, and a fat-density intraluminal lesion measuring 7.2×3.8 cm, consistent with a fixed structural lead point, as illustrated in Figure 2.

Based on these imaging results, the primary diagnostic consideration was adult colocolic intussusception secondary to a lead point lesion. While imaging characteristics were suggestive of a lipoma, preoperative exclusion of malignancy was challenging due to the colonic location and persistent intussusception. The final diagnosis was adult splenic flexure colocolic intussusception caused by a submucosal colonic lipoma.

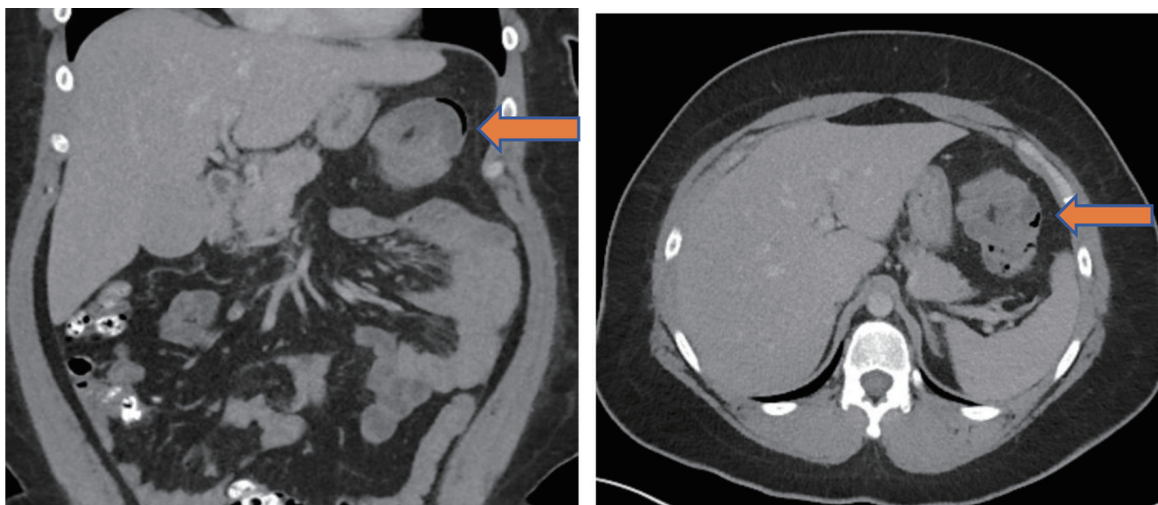


Figure 2. Follow-up computed tomography (CT) of abdomen/pelvis, coronal view (a) and axial view (b), demonstrating splenic flexure colocolic intussusception with a lead point indicated by blue arrows, showing low-attenuation bowel wall thickening with surrounding edema.

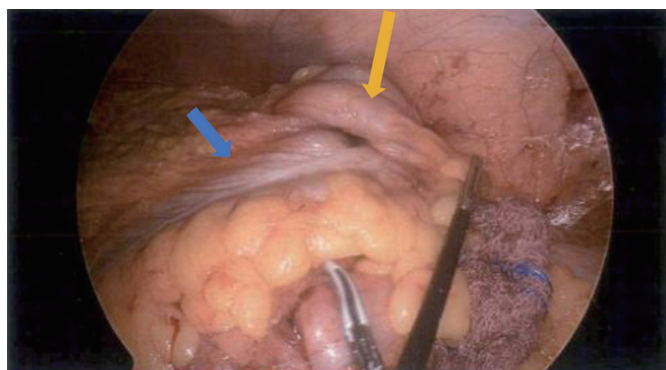


Figure 3. Intraoperative laparoscopic view of splenic flexure colocolic intussusception with a lead point lesion, as shown by the orange arrow with blue arrow showing the transverse colon.

Treatment

Initial management consisted of intravenous fluids and analgesia. Subsequently, a gastroenterology consultation recommended definitive surgical intervention due to persistent adult colocolic intussusception and the presence of a substantial structural lead point lesion.

Accordingly, the patient underwent laparoscopic left hemicolectomy with mobilization of the splenic flexure and primary stapled anastomosis. Intraoperative findings confirmed colocolic intussusception at the splenic flexure, as demonstrated in Figure 3. The affected colonic segment was resected, perfusion was assessed using indocyanine green fluorescence imaging, and the specimen was submitted for permanent histopathologic evaluation. Gross examination of the resected specimen demonstrated an 8-cm pedunculated intraluminal colonic mass measuring 3.5–4 cm in diameter and partially obstructing the lumen. Sectioning revealed a yellow-tan fatty cut surface consistent with a lipoma.

Follow-up and outcomes

The patient tolerated the procedure without complications,

was extubated in the operating room, and transferred to the recovery unit in stable condition. Final histopathologic examination confirmed a benign submucosal colonic lipoma with no evidence of malignancy, as demonstrated in Figure 4.

The immediate postoperative course was favorable, with no intraoperative complications or unexpected adverse events documented.

Building on this favorable outcome, this case demonstrates a rare instance of adult splenic flexure colocolic intussusception caused by a benign submucosal lipoma, which initially raised suspicion for an underlying neoplastic lead point.

Discussion

This case demonstrates several key aspects of adult intussusception. Unlike pediatric cases, adult intussusception typically involves an underlying pathologic lead point. The likelihood of a structural lesion is especially high in colonic intussusception. Malignant neoplasms are a significant concern [2]. As a result, adult colonic intussusception is managed more aggressively than small-bowel intussusception. Oncologic resection without prior reduction is frequently recommended when malignancy cannot be confidently excluded [3]. In this case, persistent splenic flexure colocolic intussusception and a large, fixed lead-point lesion supported definitive resection.

This case demonstrates both the diagnostic value and limitations of CT in adult colocolic intussusception. The lead point was identified as a large, fat-containing intraluminal lesion at the splenic flexure. This finding was suggestive of a lipoma. The radiographic appearance is typical, as colonic lipomas generally show fat attenuation and smooth margins [9]. However, even if imaging favors a benign lipomatous lesion, conservative management is not appropriate for adult colonic intussusception. Bowel wall edema, intussusception-related distortion, and the malignant potential of colonic lead points may obscure the diagnosis. Previous imaging series show that intussuscepted lipomas may lose their characteristic homogeneous fat appearance. This can further complicate preoperative assessment [10–12].

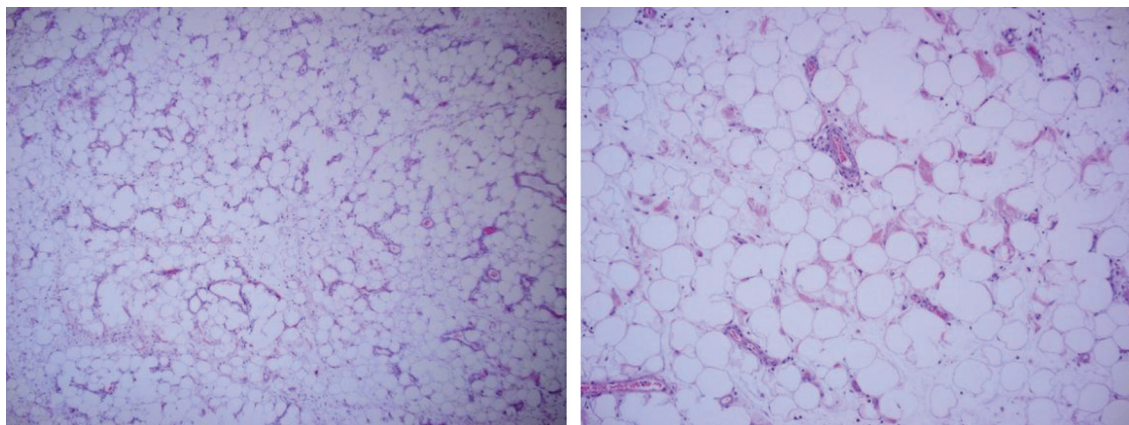


Figure 4. Histopathological examination of the lead point lesion demonstrating a submucosal colonic lipoma composed of mature adipocytes, confirming the benign nature of the intussusception lead point.

The pathologic diagnosis in this case aligns with the established biology of colonic lipomas. These lesions are uncommon and typically submucosal. They often remain asymptomatic until they reach a significant size [13]. Larger lesions, especially those over 2 cm, are more likely to cause symptoms such as pain, bleeding, intermittent obstruction, or intussusception [14]. In this case, the lesion measured about 6–7 cm on serial imaging. This supports its role as the mechanical lead point for a 9 cm short-segment colocolic intussusception. Final pathology confirmed a submucosal lipoma without malignancy. This explains the benign lead point and highlights the difficulty of preoperative cancer exclusion.

The lipoma's location at the splenic flexure underscores the educational significance of this report. Most documented cases of adult colonic lipoma with intussusception involve the ascending, transverse, or sigmoid colon, whereas splenic flexure presentations are distinctly rare [8, 15]. This anatomic site may complicate endoscopic or operative planning, particularly when symptoms progress over several days without overt perforation or complete obstruction. In this case, repeat imaging demonstrated persistent intussusception with low-attenuation bowel wall thickening, indicating a fixed lead point and possible bowel wall edema rather than a transient, self-limited event.

Management of lipoma depends on lesion size, symptoms, location, and diagnostic certainty. Small, incidentally detected lesions may be observed, and selected pedunculated or accessible lesions can be removed endoscopically [16]. In contrast, large symptomatic lesions causing intussusception generally require surgery, particularly when the lesion is broad-based, the diagnosis is uncertain, or the involved segment is in the colon, where malignancy risk is higher [17]. Our patient's persistent symptoms, failure of spontaneous resolution, and imaging evidence of a large structural lead point supported surgical resection. Laparoscopic left hemicolectomy with primary anastomosis provided both definitive treatment and diagnostic confirmation.

Although surgical resection remains the standard treatment for adult colocolic intussusception, several reports have described successful endoscopic management of lipoma-associated intussusception in carefully selected patients. Orhan et al reported complete endoscopic treatment of ileocecal intussusception caused by a colonic lipoma without the need for surgery [18]. In another study, Schopis et al described successful endoscopic mucosal resection of massive colonic lipomas serving as lead points for intussusception [19]. Nevertheless, endoscopic reduction or resection should be reserved for highly selected patients with a strong preprocedural suspicion of benign disease, no evidence of bowel ischemia or perforation, and lesions that are technically amenable to endoscopic therapy [20]. In our patient, the large size of the lesion, persistent intussusception on serial imaging, and inability to confidently exclude malignancy favored definitive surgical resection rather than an attempt at endoscopic reduction.

This case should be considered within the context of the broader literature. The literature mostly consists of case reports, small series, and systematic reviews with heterogeneous reporting. As a result, estimates of malignancy risk and

the optimal approach to reduction versus upfront resection vary across studies. However, the practical message remains the same: adult colocolic intussusception requires careful evaluation for an underlying organic lesion. Surgical management is often appropriate when a fixed colonic lead point is identified.

Key learning points

In summary, adult splenic flexure colocolic intussusception caused by a submucosal lipoma is rare but clinically significant. Even when CT imaging suggests a benign fat-containing lesion, persistent adult colonic intussusception should prompt strong consideration of definitive surgical resection, as malignancy cannot be reliably excluded preoperatively. This case underscores the importance of recognizing colonic lipoma as a benign but uncommon lead point for adult intussusception and highlights the rationale for operative management in this context.

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Conflict of Interest

The authors declare that they have no conflict of interest relevant to this manuscript.

Informed Consent

Written informed consent was obtained from the patient for publication of this case report and any accompanying images.

Author Contributions

Muhammad Haris Latif contributed to case identification, literature review, manuscript drafting, and final manuscript preparation. Imran Khokhar and Joel Riley contributed to the patient's clinical management, the critical revision of the manuscript, and supervision. Maheen Afzal and Eman Mazhar contributed to data collection, interpretation of clinical findings, and manuscript editing. All authors reviewed and approved the final manuscript.

Data Availability

All data generated or analyzed during this study are included in this published article. Additional de-identified details are available from the corresponding author on reasonable request, subject to patient privacy considerations.

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