
Colo-colonic intussusception secondary to a colonic lipoma: Report of two cases

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Abstract: Lipomas are the most common mesenchymal benign tumor of the colon. They are usually asymptomatic but may cause bleeding, obstruction, intussusception, or abdominal pain. A lead-point for adult intussusception exists in 90% of cases and is frequently malignant. The diagnosis can be made by colonoscopy, barium enema examination, and by computed tomography. We have reported two cases of submucosal lipoma of the ascending colon with intestinal obstruction. At laparotomy there was an intussusception of ascending colon, and right colectomy was performed.

Keywords: Colon, Lipoma, Intussusception, Adults, Obstruction

1. Introduction

Intussusception is defined as prolapse of a proximal bowel segment into a distal segment. It is highly uncommon in adults but relatively common in children. Childhood intussusceptions are idiopathic in 90% of cases and can safely be reduced [1,2]. In adults, 1–5% of bowel obstructions are caused by intussusception. It is more commonly secondary to an identifiable bowel lesion in 90% of cases, whereas 10% have no discernable cause [3,4]. Distinction must be made between small and large bowel intussusception. Large bowel intussusception is most frequently caused by malignant lesions (66%) [1]. Colonic lipoma is a benign neoplasm and concomitant intussusception in adults is rare [5]. Diagnosis is difficult due to non-specific symptoms of the disease. Sonography and computed tomography (CT) are the most commonly used imaging techniques for diagnosis. In adults, intussusception usually requires treatment by surgical resection of the affected bowel [6,7].

2. Case Reports

Patient HZ, a 49-year-old man was seen because of painful umbilical hernia. There was history of abdominal

distension and constipation a few months ago. On physical examination; distended abdomen and protruding deformed umbilicus were detected. The swelling was tender and irreducible. Bowel sounds were normal. Urgent surgery was performed. An incarcerated omentum in the umbilical defect was found, the bowel was viable. The non viable omentum was resected, and herniorrhaphy was performed for the fascial defect. Immediate postoperative outcome was uneventful.

Ten days later he complained of colicky abdominal pain, distension, and increasing constipation. An urgent CT scan outlined a soft tissue mass in relation to hepatic flexure with ring-like appearance of contrast around it indicating intussusception. On laparotomy, colo-colic intussusception was found. The intussuscepted bowel was not reduced. Right hemicolectomy according to oncologic principles followed. Histological examination revealed submucosal tumor lesion composed of lobulated mature adipose tissue. After the surgery and 4 years of follow up, no complications were observed.

Patient KN, a 59-year-old woman was admitted because of progressive colicky pains since two weeks. The right upper abdomen was tender without palpable lesions or

signs of peritonitis. Laboratory results were normal.

An abdominal CT scan was obtained, revealing a 6-cm low attenuation mass at the hepatic flexure. The fat density and radiographic appearance suggested a colonic lipoma, which appeared to be functioning as a lead point (Figure 1). At laparotomy, colo-colonic intussusception at the ascending colon was found. Right hemicolectomy was performed because it was not possible to reduce the intussusception. The intussusception was caused by a 6 x 5 cm polypoid mass arising from the ascending colon (Figure 2). Pathological examination showed polypoid mass arising from submucosa of the colon with stroma containing mostly fatty tissue consistent with submucosal colonic lipoma, with no evidence of malignancy. The postoperative course was uneventful.

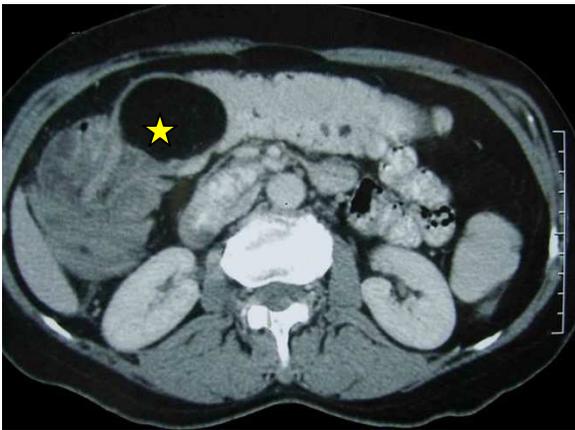


Figure 1 :Abdominal CT scan showing intussusception of ascending colon into hepatic flexure with identification of 5 cm, low-attenuation lesion functioning as lead point (star). Hounsfield units consistent with lipoma (note the absence of vessels within).

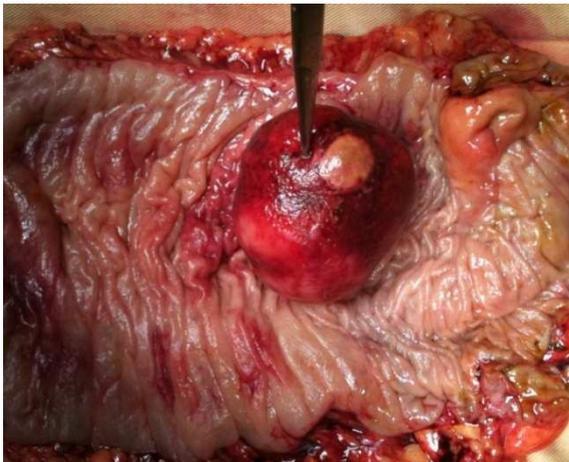


Figure 2 : Bowel wall is cut away, revealing the lipoma

3. Discussion

Colonic lipoma is the second most common benign large bowel tumor after adenoma [8,9]. These tumors are composed of well-defined adipose tissue with a clearly demarcated fibrous support structure. They have a submucosal location in 90% of cases[10]. Lipomas can be

located anywhere along the digestive tract but they are most common in the colon. Within the colon, 50% are found in the caecum and ascending colon. The occurrence of distal-colon lipoma is rare[3,11]. Forty-six cases of colonic intussusception secondary to colonic lipomas have been reported in the English-language literature over the past 45 years.

The mean age for adult intussusception is 50 years, with a nearly equal male to female ratio. Early diagnosis of intussusception may prevent the necrosis of the bowel and, in some cases, even save the patient's life [3].

The symptomatology of lipomas is related to their size and location in the colon. Tumors more than 2 cm in diameter may cause symptoms such as pain, hemorrhage, diarrhea and constipation. Pain may be chronic or recurrent due presumably to recurrent partial intussusception, or may be acute and severe due to traumatic, inflammatory changes in and adjacent to the lipomas resulting in ulceration [12-16]. For our two cases, the main symptom was the colicky abdominal pain.

For diagnosis, many imaging modalities are used such as radiographs, ultrasonography, CT and magnetic resonance imaging. The most commonly used are ultrasonography and CT. It is extremely important to diagnose acute intussusception as early as possible, as it leads to intestinal obstruction and cuts off the blood supply to the bowel [17].

The classic ultrasonographic feature of intussusception is the visualization of two hypo-echoic bowel loops within each other, with an echogenic layer of mesenteric fat in between. On transverse section this produces the characteristic 'target' or 'doughnut' sign. The longitudinal appearance of intussusception usually appears as multiple parallel lines, the so-called "sandwich appearance" or "pseudo-kidney sign". The lines demonstrate bowel walls and their layers. The major limitation of ultrasonography for evaluating acute obstructive symptoms is the presence of air in the bowel, which leads to poor transmission and difficulties in image interpretation [18,19].

Intussusception can be confidently diagnosed on CT because of its virtually pathognomonic appearance. It appears as a complex soft-tissue mass, consisting of the outer intussusciens and the central intussusceptum. Computed tomography scans of colonic lipomas can provide a definitive diagnosis because the mass typically, as in our second case, has characteristic fatty densitometric values. These features are evident only in large lesions. Small tumors are not detected due to artifacts and partial volume averaging [6,14,20,21].

CT can also better distinguish the exact location of intussusception and may give additional information regarding spread of disease in case of malignancy [22].

Barium enema and colonoscopy are additional measures that may aid in diagnosis. Colonoscopic removal may also be therapeutic for smaller lesions. For larger (>2 cm) and broader-based lesions, however, endoscopic removal has been associated with a high rate of perforation, and therefore, should be avoided [23,24].

The definitive treatment of symptomatic colonic lipoma is surgical resection. Whenever a lipoma is confidently diagnosed pre-operatively, laparoscopic assisted resection is the operation preferred [25]. For lesions where malignancy is strongly suspected, formal open resection is indicated. Oncologic resection should be performed. This attitude was followed for our two cases. Intraoperative reduction of intussusception should not take place, to prevent possible tumor seeding in case of malignancy and to prevent damaging the bowel [3].

4. Conclusion

Intussusception is rare in adults, but should be considered as a cause of chronic and sub-acute abdominal symptoms due to the high incidence of associated pathological lesions. Laparotomy is mandatory because malignant lesions are frequently the lead-point.

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