Large Cecal Lipoma With Overlying Ulceration Simulating Malignancy: A Case Report and Review of Relevant Literature

Saptarshi Biswas, Arpit Amin, Eddy A Castillo, Anthy Demestihan

Abstract

Gastrointestinal lipomas are rare, usually single, slow growing benign non-epithelial tumors. Most colonic lipomas are asymptomatic and are usually detected incidentally during colonoscopy, surgery or autopsy. In a small percentage of cases, especially when their diameter is greater than 2 cm, they can cause symptoms. The common presenting symptoms include constipation, diarrhea, colicky abdominal pain, change in bowel habit, bowel obstruction, lower gastrointestinal bleeding, intussusception or prolapse. Imaging techniques, including CT and MRI are regularly used. However, preoperative diagnosis of colonic lipoma is often difficult with the majority of the lesions diagnosed by laparotomy and definitive diagnosis is made based on histopathological examination. Colonoscopy permits direct visualization of the submucosal lipoma. Endoscopy can usually distinguish lipomas from other tumors. Lipomas are seen as smooth, rounded yellowish polyps with a thick stalk or broad-based attachment. Typical colonoscopy features are the “tent sign” (elevation of the mucosa over lipoma with biopsy forceps), “cushion sign” or “pillow sign” (pressing forceps against the lesion results in depression or pillowing of the mass) and the “naked fat sign” (extrusion of yellowish fat at the biopsy site. The mucosa overlying a colonic lipoma is intact. In rare cases, colonoscopy may reveal large-sized flat-shaped mass with ulceration that may lead to an impression of malignancy. Colonoscopic biopsy is often performed to determine the exact nature of the tumor. However colonic lipomas may result in mucosal inflammation of adjacent tissue giving the false impression of “nonspecific colitis”. This is particularly true in cases of inadequate tissue sample. Recently, virtual colonoscopy has been performed to detect colonic lipomas. Lipomas less than 2 cm in diameter can be removed endoscopically whereas larger lesions should be removed surgically either by open or laparoscopic methods. Colonoscopic resection of large colonic lipomas remains a controversial subject till date. Although a wide range of operative techniques including colostomy and excision, hemicolectomy or subtotal colectomy are employed, segmental resection is usually the procedure of choice. We describe a patient with persistent abdominal pain who underwent open right hemicolectomy for the presumptive endoscopic diagnosis of cecal adenocarcinoma and discuss diagnostic modalities and treatment options. Histological examination confirmed that the resected specimen was a giant benign cecal lipoma.

Keywords: Giant; Cecal Lipoma; Malignancy simulation

Introduction

Gastrointestinal lipomas are rare, usually single, slow growing benign non-epithelial tumors. Although they can be found in the esophagus, small intestine and rarely in the stomach, colonic lipomas constitute the most common mesenchymal neoplasm of the gastrointestinal tract [1-3].

Most colonic lipomas are asymptomatic and are usually
detected incidentally during colonoscopy, surgery or autopsies. In a small percentage of cases, especially when their diameter is greater than 2 cm, they can cause symptoms. The common presenting symptoms include constipation, diarrhea, colicky abdominal pain, change in bowel habit, bowel obstruction, lower gastrointestinal bleeding, intussusception or prolapse [1, 3, 4].

Imaging techniques, including CT and MRI are regularly used. However, preoperative diagnosis of colonic lipoma is often difficult with the majority of the lesions diagnosed by laparotomy and definitive diagnosis is made based on histopathological examination [2].

The usual colonoscopic picture consists of a smooth, spherical polyp, usually sessile (rarely penduculated) slightly yellow in color, while the overlying mucosa is intact [1-4]. In rare cases, the mucosa consists of necrotic and/or ulcerative lesions, which resemble malignant tumors as in this present case [4].

Lipomas less than 2 cm in diameter can be removed endoscopically whereas larger lesions should be removed surgically either by open or laparoscopic methods. Colonoscopic resection of large colonic lipomas remains a controversial subject till date [1, 2, 4]. Although a wide range of operative techniques including colostomy and excision, hemicolectomy or subtotal colectomy are employed, segmental resection is usually the procedure of choice [2].

We describe a patient with persistent abdominal pain who underwent open right hemicolectomy for the presumptive endoscopic diagnosis of cecal adenocarcinoma and discuss diagnostic modalities and treatment options. Histological examination confirmed that the resected specimen was a benign cecal lipoma.

**Case Report**

A 54-year-old Hispanic male presented as an outpatient with two month history of daily postprandial nausea, vomiting, diffuse abdominal pain and constipation. The patient reported weight loss of 15 lbs in the preceding four months. The patient denied any history of hematemesis, dysphagia, odynophagia, melena, bright red blood per rectum, or jaundice. His past medical history was significant for rectal abscess, which resolved with incision and drainage 14 years ago. The patient was not taking any medications at home. The patient was not allergic to any medications. There was no history of cancer in his family. The patient’s father suffered from peptic ulcer disease. His social history was significant for 1 pack per day cigarette smoking for the past 44 years.
On physical examination, his vital signs were stable. Head and neck examination was negative for icterus. Abdominal examination revealed normoactive bowel sounds, non-distended abdomen, and mild diffuse tenderness to palpation. Initial laboratory tests including complete blood count and comprehensive metabolic panel were normal. Abdominal ultrasound examination did not demonstrate any biliary pathology.

Upper endoscopy revealed esophagitis (Fig. 1) and duodenitis (Fig. 2). Biopsies were obtained, which were negative for dysplasia. The patient was started on proton pump inhibitor. The patient’s symptoms persisted despite treatment with proton pump inhibitor. Colonoscopy revealed small internal hemorrhoids, 5 mm sessile polyp in the mid-transverse colon, which was excised, and a large ulcerated cecal mass at the appendiceal orifice with length of 6 - 7 cm (Fig. 3, 4). A biopsy of the ulcerated cecal mass was obtained, which was negative for malignancy. CT scan of abdomen and pelvis with PO and IV contrast was obtained, which revealed a 4.5 cm × 4.2 cm × 4.6 cm cecal mass with HU of -114, which was consistent with density of fat. There was no bowel obstruction present.

Patient was referred to surgery for possible right hemicolectomy due to persistent symptoms despite medical therapy. Intra-operatively, a palpable intraluminal cecal mass was found, which was concordant with the location found on colonoscopy. Right hemicolectomy was performed. Pathologic evaluation of the right hemicolectomy specimen revealed 6.0 cm cecal lipoma showing ulceration and hyperplasia of surface mucosal glands (Fig. 5, 6). The patient’s pain resolved after surgery and he was discharged home on regular diet on post-operative day 4.

Discussion

Incidence

Colonic lipomas are mesenchymal in origin and arising from adipose tissue in the bowel wall [2, 5-7]. In the gastrointestinal tract, at least 70% of lipomas are located on the right side of the colon. In the descending order of prevalence, other colonic locations are the transverse colon, including both hepatic and splenic flexures, descending colon, sigmoid colon and rectum [2, 5-10]. Gastrointestinal lipomas are also reported in the small intestine (25%) stomach (5%) and esophagus [6, 11-13].

Colonic lipoma was first described by Bauer in 1757 [1, 14]. A review by Franc-Law et al revealed that there were only 275 cases of colonic lipomas reported in English literature until 2001 [15]. Large bowel lipomas are rare adipose neoplasms with a reported incidence ranging between 0.15-4.4% [2, 16]. A review of 1310 autopsies by Weinberg and Feldman revealed an incidence of 4.4% [17]. However, a meta-analysis performed by the same authors showed that the incidence of colonic lipomas is only 0.2% [17].

Most colonic lipomas are solitary [2]. However, in 10 to 25% of cases, they can be multiple [4]. Colonic lipomatosis, which is a rare lipomatosis syndrome, is characterized by the presence of numerous lipomas throughout the large bowel [4, 18].

The affected population is mostly elderly with a peak incidence in the fifth to sixth decade of life with a female predominance [2, 16, 19-21].

Presentations

Colonic lipomas usually do not cause symptoms and are usually discovered incidentally at colonoscopy, surgery or autopsy. Less than one-fourth of patients with colonic lipoma present with symptoms [4]. Taylor BA et al from Mayo clinic reported that only 6% of colonic lipomas were symptomatic [2, 22]. If the lipoma diameter is larger than 2 cm, they may cause symptoms like abdominal pain, diarrhea, constipation, weight loss, anemia, gastrointestinal bleeding or bowel obstruction [1].

These symptoms occur due to intussusception, direct luminal protrusion of the enlarging mass or ulceration of the surrounding mucosa. Acute or intermittent colo-colonic or ileo-colonic intussusception leads to mechanical interference causing symptoms in large colonic lipomas [2, 21, 22]. Although rare, lipoma is the most common benign tumor of the colon which causes colonic intussusception in adults [23]. On rare occasions, ulceration of the overlying mucosa may cause clinically apparent lower gastrointestinal bleeding or result in chronic anemia [24-27]. There have been case reports describing spontaneous expulsion of sigmoid lipomas [2, 20].

Etiology

The true etiology of gastrointestinal lipomas is still not clearly understood [28, 29]. Colonic lipomas originate from
the sub mucosa and protrude into the gastrointestinal lumen. They rarely extend into the muscularis propria or subserosa. They have a polypoid appearance and a well-circumscribed margin.

At times, the lipoma may be a result of chronic inflammation. This is especially true in the cecum. The chronic inflammatory process may cause abnormal intestinal motility and the mucosa to pull away from the deeper submucosa, resulting in the creation of a tissue space with subsequent adipose tissue deposition. The deposited adipose tissues have no well-defined margins with adjacent tissues, and the overlying and adjacent colonic mucosa always presents with inflammatory changes making preoperative diagnosis increasingly difficult. Some authors have addressed them as, “pseudolipoma”. The differentiation of true neoplastic lipoma and pseudolipoma is still not well recognized.

**Radiological diagnosis**

Numerous imaging modalities are used in the diagnosis of colonic lipomas. However, colonic lipomas continue to present difficulties in the preoperative differentiation between malignant and benign colonic neoplasm.

Barium enema can detect lipomas but they are not specific. An ovoid filling defect with well-defined borders found on barium enema may raise the suspicion for the diagnosis of colonic lipoma. A change in size and shape of a radiolucent mass arising from the third layer on endoscopic ultrasonography corresponds to the histologic appearance of malignancy [25]. Colonoscopic biopsy is often performed to determine the exact nature of the tumor. However colonic lipomas may result in mucosal inflammation of adjacent tissue giving the false impression of “nonspecific colitis”. This is particularly true in cases of inadequate tissue sample [11]. Recently, virtual colonoscopy has been performed to detect colonic lipomas [27].

**Treatment options**

The treatment of colonic lipomas depends on the preoperative diagnosis combined with the intraoperative findings on the frozen section. Various treatment options include local excision, segmental resection, or formal hemicolectomy. If the intraoperative frozen section reveals malignant disease, resection of the involved segment along with the regional nodal basin is recommended. On the other hand, if the intraoperative pathology reveals benign pathology, simple excision is performed. In short, intraoperative pathology is the most important factor determining the treatment approach for colonic lipomas [35, 38]. If the colonic lipoma is asymptomatic, less than 2 cm in diameter and colonoscopic biopsy reveals benign pathology, it can be observed. Malignant transformation of such colonic lipomas is extremely rare [39]. If the colonic lipoma presents as intussusception, a primary adenocarcinoma should be suspected because 75% of colonic intussusceptions occur in the setting of a primary adenocarcinoma [35]. Paskauskas et al report that colonic lipomas, especially those causing intussusception, range from 4 to 16 cm in greatest diameter with an average of 7 cm [35]. Therefore, size of the colonic lipoma is an important determinant as far as intussusception is concerned.

**Endoscopic snaring versus surgical excision**

If the colonic lipoma is symptomatic, less than 2 cm in diameter, and is pedunculated, it can be removed safely using endoclipping or endoloop ligation [40-42]. If the colonic
lipoma is symptomatic, larger than 2 cm in diameter, and is sessile or broad based, endoscopic approach is associated with a greater risk of perforation. Hence, surgical removal is recommended for such lesions [23, 43].

Laparoscopic colon surgery involves less pain in the post operative period, shorter hospital stay and a faster recovery than conventional formal laparotomy. A number of recent published data referring to the comparison of laparoscopic versus open colorectal resection for cancer indicate the benefit of laparoscopic resection of colonic lipomas and underline the fact that they should become the gold standard method for removal of lipomas especially when they are greater than 2 cm in diameter, even in cases where the malignancy of the tumor could not be excluded preoperatively [44, 45].

Jiang et al suggest that the surgical removal should be the preferred choice for the following indications [38]: 1) Lipoma with a diameter of greater than 4 cm, with a sessile appearance or limited pedicle; 2) Lipoma with an unclear preoperative diagnosis; 3) Lesions with significant symptoms, especially the appearance of intussusceptions; 4) Lesions with involvement of the muscular layer or serosa; 5) Lesions that cannot be resected radically by colonoscopy.

However, based on our case and the published literature, we think that surgical removal should be the preferred choice for colonic lipomas if the tumors are symptomatic and larger than 2 cm in diameter.

Conclusion

Colonic lipomas are rare nonepithelial benign tumors. Accurate preoperative diagnosis is often difficult and as a result they can be mistaken for malignancy. This is more so when the lesion is large in size, and with ulceration. Pedunculated colonic lipomas of small dimensions can be safely removed endoscopically. Surgical resection is recommended for larger lipomas to relieve the symptoms or exclude malignancy. A surgical approach either open or laparoscopic remains the treatment of choice for the following indications [38]: 1) Lipoma with a diameter of greater than 2 cm in diameter, even in cases where the malignancy of the tumor could not be excluded preoperatively [44, 45].

References

18. Tatsuguchi A, Fukuda Y, Moriyama T, Yamanaka N,


