

CASE REPORT

## Cecal lipoma with pseudomalignant features: A case report and review of the literature

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### Abstract

Colonic lipoma is a well-documented benign neoplasia, endoscopically appearing as a smooth round yellowish polyp with a thick stalk or broad-based attachment. We describe a 63-year old woman with persistent abdominal pain, in whom colonoscopy revealed a cecal mass with malignant features. Based on the colonoscopy findings, right hemicolectomy was laparoscopically performed for a presumptive diagnosis of a cecal adenocarcinoma, but histological examination revealed a colonic lipoma with overlying mucosal ulceration.

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**Key words:** Colonic lipoma; Pseudomalignant features; Laparoscopic resection

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### INTRODUCTION

Lipomas are rare and slow-growing benign nonepithelial tumors that can be found in the gastrointestinal tract<sup>[1,2]</sup>. Lipomas develop only infrequently in the colon, and are usually asymptomatic and detected incidentally at colonoscopy, surgery or autopsy<sup>[3]</sup>. The occurrence of

symptoms appears to be related to the size of lipoma. Those larger than 2 cm may occasionally cause abdominal pain, changes of bowel habits, rectal bleeding and bowel obstruction, intussusception or prolapse<sup>[3-5]</sup>. The common endoscopic picture consists of a smooth, spherical polyp, usually sessile and rarely pedunculated that is slightly yellow, while the overlying mucosa is intact<sup>[1-6]</sup>. In rare cases the mucosa presents necrotic and/or ulcerative lesions that resemble malignant tumors<sup>[7,8]</sup>. The decision for selecting the most suitable treatment of a colonic lipoma mainly depends on the tumor's size and is either endoscopic resection or surgical removal. Lipomas with a diameter less than 2 cm can be safely removed endoscopically, whereas larger lesions should be removed by segment resection<sup>[9-11]</sup>.

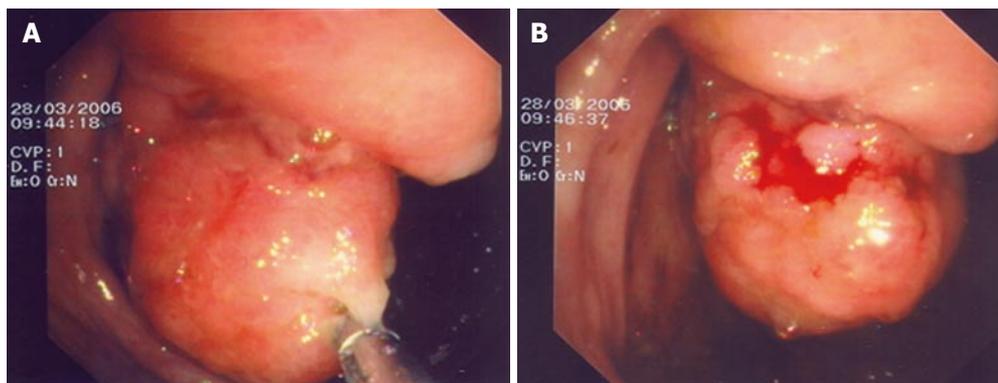
We describe a patient with persistent abdominal pain who underwent laparoscopic right hemicolectomy for the presumptive endoscopic diagnosis of cecal adenocarcinoma that turned out to be a lipoma on histological examination.

### CASE REPORT

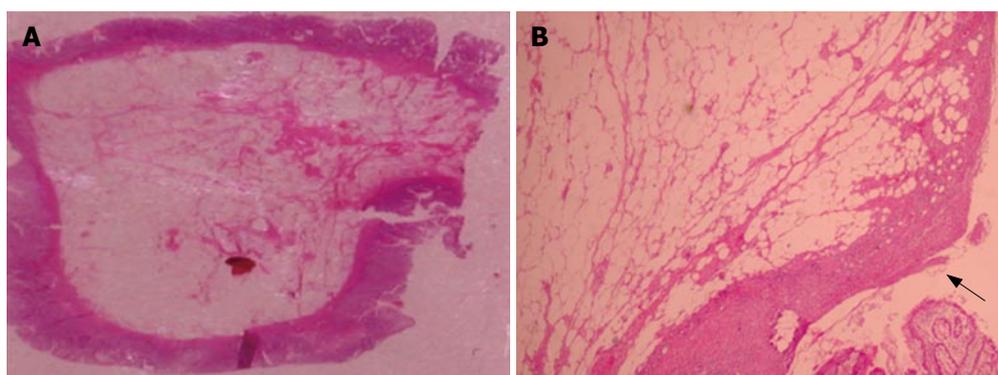
A 63-year old woman with abdominal pain for several weeks was referred to our department by a private gastroenterologist for further investigation of a 2 cm broad-based cecal polypoid mass, revealed during colonoscopy.

The patient did not report any episodes of constipation, diarrhea, hematochezia or melena, and her medical history did not include consumption of alcohol or non-steroid anti-inflammatory drugs (NSAIDs). Examination of the abdomen revealed no mass or tenderness. Detailed laboratory studies were within normal ranges, including complete peripheral blood cell count, blood coagulation and carcinoembryonic antigen (CEA). Colonoscopy performed in our department revealed a sessile tumor of about 2 cm in diameter, proximal to the ileocecal valve. The overlying mucosa was ulcerated and nodular with red color, while on palpation with biopsy forceps, the mass was felt to be stiff, not compressible and easy bleeding (Figure 1A and B). Although histopathological examination of biopsy specimens showed only non-specific ulcerations, malignancy could not be excluded according to the endoscopic findings. Further investigation included an abdominal ultrasound, which was negative for liver metastases and a computed tomography (CT) scan which showed a sessile neoplasm protruding into the lumen of cecum with a medium tissue density.

Given the suspicion of the malignant nature of the tumor, the patient underwent a laparoscopic right



**Figure 1** Endoscopic view of a broad-attachment polypoid tumor (A) and bleeding from the lesion on compression with biopsy forceps on compression with biopsy forceps (B). The overlying mucosa was nodular with ulcerations.



**Figure 2** Endoscopic view of a broad-attachment polypoid tumor (A) and bleeding from the lesion on compression with biopsy forceps on compression with biopsy forceps (B). The overlying mucosa was nodular with ulcerations.

hemicolecotomy. Macroscopic assessment of the resected specimen revealed a round polypoid tumor of 2.1 cm × 2.4 cm × 1.8 cm in size, with firm characteristics and nodular surface. Pathological examination of the resected lesion revealed a cecal lipoma with ulcerative lesions on the overlying mucosa (Figure 2A and B). The postoperative course was uneventful, and the patient was free of symptoms during a 10-month follow-up period.

## DISCUSSION

Colonic lipomas are relatively uncommon tumors of mesenchymal origin, composed of well-differentiated adipose tissue supported by fibrous tissue, that rarely cause symptoms and are usually detected incidentally<sup>[1-3]</sup>. They arise from the submucosa, but occasionally extend into the muscularis propria; up to 10% are subserosal<sup>[12]</sup>. The incidence of lipomas relative to all polypoid lesions of the large intestine is reported to range from 0.035% to 4.4%<sup>[1,2]</sup>. However, they represent the third most common benign tumors after hyperplastic and adenomatous polyps<sup>[13]</sup>. They are usually solitary, but multiple lesions are reported in 10% to 25% of cases<sup>[1,3]</sup>. A rare polyposis syndrome has been described, with numerous lipomas throughout the bowel (colonic lipomatosis)<sup>[14]</sup>. Colonic lipomas are mainly found on the right-side of the colon and cecum<sup>[15]</sup>. Most of these tumors are asymptomatic and usually detected incidentally during colonoscopy and laparotomy. Only 25% of patients with colonic lipoma develop symptoms. When lipomas are larger than 2 cm in diameter, they may cause symptoms including bleeding with anemia, diarrhea or constipation, abdominal intestinal obstruction, and

rarely, intussusception<sup>[16]</sup>.

Various imaging modalities can imply the diagnosis of colonic lipomas. Barium enema may reveal an ovoid filling defect with well-defined borders. A so-called squeeze sign, indicating a change in size and shape of a radiolucent lesion in response to peristalsis, is frequently noted<sup>[17]</sup>. CT scans of colonic lipomas can provide a definite diagnosis because the mass typically has characteristic fatty densitometric values<sup>[18,19]</sup>. On CT, lipomas appear ovoid or pear shaped, with sharp margins and absorption densities of -40 to -120 Hounsfield units, typical of fatty composition<sup>[20,21]</sup>. However, these features are evident only in large lesions, as smaller tumors are not detectable due to artifacts and partial volume averaging<sup>[22]</sup>. Correspondingly, in our case, abdominal CT was not diagnostic for lipoma possibly due to the tumor's relatively small size. Magnetic resonance imaging (MRI) may be particularly useful in the detection of lipomas as the signal intensity is characteristic of adipose tissue on T1-weighted and fat-suppressing images<sup>[23,24]</sup>. Endoscopic ultrasonography (EUS) is a potent adjunct modality for characterization of submucosal tumors. Colonic lipomas appear as hyperechoic lesions with regular borders in the three layers and can be distinguished from smooth muscle tumors, lymphangiomas, and invasive or metastatic malignancies<sup>[25]</sup>. EUS can be used to determine any extension into the muscularis propria before injection-assisted polypectomy of symptomatic lipomas<sup>[26]</sup>. Recently, CT colonographic examination (virtual colonoscopy) has been performed to detect colonic lipomas<sup>[27]</sup>.

Endoscopy can usually distinguish lipomas from gastrointestinal cancer or other tumors. Lipomas are seen as smooth, rounded yellowish polyps with a thick stalk or

Table 1 Reported cases of colonic lipomas with pseudomalignant features

Author	Year	Age	Sex	Clinical presentation	Site of lipoma	Size (cm)	Treatment	Histological findings of endoscopic biopsies
Loludice <sup>[7]</sup>	1980	43	M	Hematochezia	Descending	3.9	Left hemicolectomy	Ulcerated mucosal
Lera <sup>[30]</sup>	1982	70	F	Abdominal pain	Hepatic flexure	4	Right hemicolectomy	-
Snover <sup>[8]</sup>	1984	57	M	Occult blood	Sigmoid	3	Sigmoid colectomy	Ulcerated mucosa
McGrew <sup>[31]</sup>	1985	75	M	Hematochezia	Rectosigmoid	5	Endoscopic resection	-
Taylor <sup>[32]</sup>	1987	62	M	Hematochezia	Sigmoid	10	Sigmoid colectomy	Ulcerated mucosa
Ibrahim <sup>[33]</sup>	1992	50	M	Hematochezia	Descending	3	Left hemicolectomy	Inflammatory tissue
El-Khalil <sup>[34]</sup>	2000	64	M	Hematochezia	Sigmoid	7.8	Left hemicolectomy	Focal hemorrhagic necrosis
Caterino <sup>[35]</sup>	2002	60	M	Abdominal pain	Hepatic flexure	5	Right hemicolectomy	-
Meghoo <sup>[36]</sup>	2003	60	F	Hematochezia	Cecum	6	Right hemicolectomy	Ulcerated mucosa
Huh <sup>[16]</sup>	2006	62	M	Intussusception	Sigmoid	3.5	Anterior resection	Focal hemorrhagic necrosis and inflammation
Katsinelos	2006	62	F	Abdominal pain	Cecum	2.4	Laparoscopic right hemicolectomy	Non-specific ulceration

broad-based attachment<sup>[1-6]</sup>. Typical colonoscopic features are the "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 biopsy site)<sup>[4,12,28,29]</sup>. Although the mucosa overlying a colonic lipoma is usually not involved, in rare cases, as in our patient, colonoscopy may reveal ulcerations and stiffness on palpation that may lead to a mistaken impression of carcinoma. Eleven such cases<sup>[7,8,30-36]</sup> reported over 3 decades are summarized in Table 1. Among these patients the most common indications for endoscopy were hematochezia and persistent abdominal pain. The location of lesion was in the cecum in three cases, ascending and transverse colon in one respectively, descending colon in two and rectosigmoid in four cases. In cases where biopsy specimens were taken, only hemorrhagic necrosis or ulceration of the mucosa was identified. In all but one case treatment consisted of operative resection.

The indications for performing colonoscopic snare polypectomy to remove colonic lipomas remain controversial<sup>[9,28,37]</sup>. Most authors agree that colonic lipomas with a diameter larger than 2 cm should be removed surgically, because in these cases endoscopic resection is associated with a high rate of complications<sup>[9,10,38,39]</sup>. However, especially for large pedunculated lipomas, the size of the stalk seems to be a more important factor than the diameter of the lipoma when colonoscopic removal is considered<sup>[10,38]</sup>. In our opinion, if a lipoma is sessile or broadly-based, endoscopic removal is risky because the fatty tissue is an inefficient conductor for electric current and may result in a significantly high rate of complications like perforation or hemorrhage.

A wide range of operative techniques using conventional laparotomy<sup>[9]</sup> and mini-laparotomy<sup>[40]</sup> have been described including enucleation, colostomy, excision and segmental colonic resection. However, only a few cases of laparoscopic resection of colonic lipomas have been reported so far<sup>[13,15,39,41-47]</sup>. Advantages of laparoscopic surgery include less postoperative pain, shorter hospitalization and faster recovery than conventional laparotomy. The latest published data referring to the comparison of laparoscopic versus open colorectal resection for cancer<sup>[48,49]</sup> indicate that laparoscopic resection of colonic lipomas should become the gold standard method for removal of lipomas greater

than 2-3 cm in diameter, even in cases where the malignancy of the tumor could not be excluded preoperatively.

In conclusion, our case emphasizes that a colonic lipoma can simulate a malignant neoplasm and underscores the laparoscopic resection as the recommended operation for symptomatic colonic lipomas.

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