Colonic Angiolipoma - A rare finding in the gastrointestinal tract. Case Report and review of literature.

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ABSTRACT

Angiolipomas are benign lesions that are frequently found in subcutaneous cellular tissue, but are rarely located in the gastrointestinal tract. Here we discuss a case of colonic angiolipoma that presented as a mass near the hepatic flexure, occupying approximately 90% of the colonic lumen. The diagnosis was made by endoscopy and computed tomography. The mass was resected successfully and diagnosis was confirmed by histological studies and immunohistochemical tests.

CASE REPORT

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A 72-year-old man, with no relevant past medical history was admitted to our hospital due to a 15-day history of diarrhea and abdominal pain and 3kg weight loss. There was no family history of cancer. Upon physical examination he was found to have a diffusely tender abdomen. No masses were found with deep palpation. His vital signs were: pulse 80 beats/min, temperature 37 °C, blood pressure 135/80 mm Hg and respiratory rate 18 breaths/min. his weight was 72 kg. The hemoglobin level was 13.9 g/dl, and the platelet count was 314.000. Other laboratory tests performed on admission were within normal ranges. Fecal occult blood test (FOBT) was positive, therefore a colonoscopy was ordered.

Colonoscopy Findings

Colonoscopy was carried out 25 days after the onset of symptoms. Multiple diverticula were found in the sigmoid colon without signs of bleeding. In the right colon, 8 centimeters proximal to the hepatic flexure a polypoid, peduncled mass, that resembled a malignant neoplasm, was found. This mass had an irregular and ulcerated surface and a broad base, causing a decrease in the colonic lumen of approximately 90% (fig. 1). The rest of the colonic mucosa had a normal appearance. Resection was attempted unsuccessfully, and biopsies were taken.

Given the findings of the colonoscopy, contrast-enhanced abdominal and pelvic computed tomography (CT) was performed.

CT Findings:

Contrast-enhanced abdominal and pelvic CT showed a 6,3 x 4 x 4,2 cm pedunculated oval lesion dependent of the right colonic wall, located near the hepatic flexure. The mass had an encapsulated appearance, with septa and areas of soft tissue, and a predominantly fatty attenuation (Fig. 2). It occupied the colonic lumen, however no signs of intestinal obstruction were identified. In the contrasted phase, the lesion did not present significant enhancement, nevertheless some vascular structures were identified (Fig. 3).

No metastasis, satellite lesions or adenopathies were identified. The pericolonic adipose tissue had a normal appearance without signs of inflammation or infiltration.

Multiple diverticula were observed in the sigmoid colon without associated inflammatory signs. Surgical resection was performed approximately 28 days after the onset of symptoms. A mass was found in the right colon and partial colectomy was done. The specimen was sent to pathology and the patient evolved satisfactorily.

Pathological Findings:

The pathology specimen corresponded to a mass of 7 x 3 x 2.5 centimeters, exophytic, ulcerated and without satellite lesions, which presented fibrous septa and lobular zones of a fatty component. (Fig. 4)

The microscopic analysis revealed colonic mucosa without dysplastic changes. In the submucosa, there was evidence of a benign proliferation of adipose cells with a great amount of thin walled vascular channels dispersed throughout the tumor, some with small hyaline clots.

Immunohistochemical tests demonstrated positive endothelial cells for CD31 and adipose cells for S-100 protein. There was no immunoreactivity in neoplastic cells for H-Caldesmon, smooth muscle actin, HMB-45, estrogen receptors or progesterone. (Fig.5) These findings confirm a definitive diagnosis of colonic angiolipoma.

DISCUSSION

Angiolipomas are benign tumors that occur with greater frequency in subcutaneous cellular tissue and are rarely found in the gastrointestinal tract. They were initially described by Bowen in 1912 [1].

In 1960 Howard and Helwig described the clinical and pathological characteristics that distinguish them from lipomas. They are subcutaneous encapsulated tumors that present as a painful mass most frequently in young adults, and can be found in multiple locations of the limbs and trunk [2,3]. These tumors do not have a tendency to recur after surgical resection and they represent between 5 and 17% of lipomatous lesions. Few cases of infiltrating angiolipomas have been reported. In these cases the lesions were not encapsulated and compromised neighboring tissues simulating a neoplasm [4,5].

Angiolipomas have been reported in the stomach and duodenum. We found only 5 case reports of colonic angiolipoma [6-10].

Clinical differences are found between those in the GI tract and those in subcutaneous tissue. The former do not always present with pain and all those reported have been solid lesions and in older patients that may complain of abdominal pain, nausea and vomiting. Angiolipomas may be associated with intestinal obstruction or gastrointestinal bleeding in which case FOBT can be positive and vital signs and other blood tests may be altered. No recurrence or lesions with an infiltrating behavior have been described in any of the few case reports of the GI tract [6]. Endoscopic findings are not typical. The appearance of these tumors is similar to that of a malignant neoplasm. The differential diagnoses include colonic carcinoma, intramural hematoma and lipoma. Double contrast fluoroscopy can also be performed. Findings include smooth, round or ovoid luminal defects similar to those seen in lipomas, whereas in colonic carcinoma findings are variable. In early cancer these include plaque-like or pedunculated lesions. In advanced cancer, a large polypoid lesion with a filling defect in the dependent wall can be seen.

Macroscopically they are well circumscribed with a yellow surface and red areas. Histologically, they are composed of mature adipose tissue and a proliferation of blood vessels with fibrin clots inside vascular channels. The proportion of adipose tissue and vascular tissue varies from predominantly lipomatous to predominantly angiomatous [7, 8].

Imaging findings of these tumors vary depending on the composition and have been described predominantly in computed tomography. Those tumors that are lipomatous present an important adipose component without significant enhancement and those with less fat present areas of soft tissue attenuation, which can enhance [2].

Given that it is a rare entity, treatment is not completely established. It is a benign lesion, but in those cases that have been reported they have always been removed by endoscopy or open surgery with intestinal resection.

Endoscopic resection may not be indicated in lesions with a broad implantation base due to the risk of bleeding or perforation [2]. Very large lesions or obstructive lesions are surgical [11].

TEACHING POINT

Angiolipomas are benign lesions that are rarely found in the gastrointestinal tract. It is important to learn how to differentiate them from more aggressive lesions such as neoplasms. They can be diagnosed by colonoscopy, computed tomography and confirmed by inmunohistoquemical tests.

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FIGURES

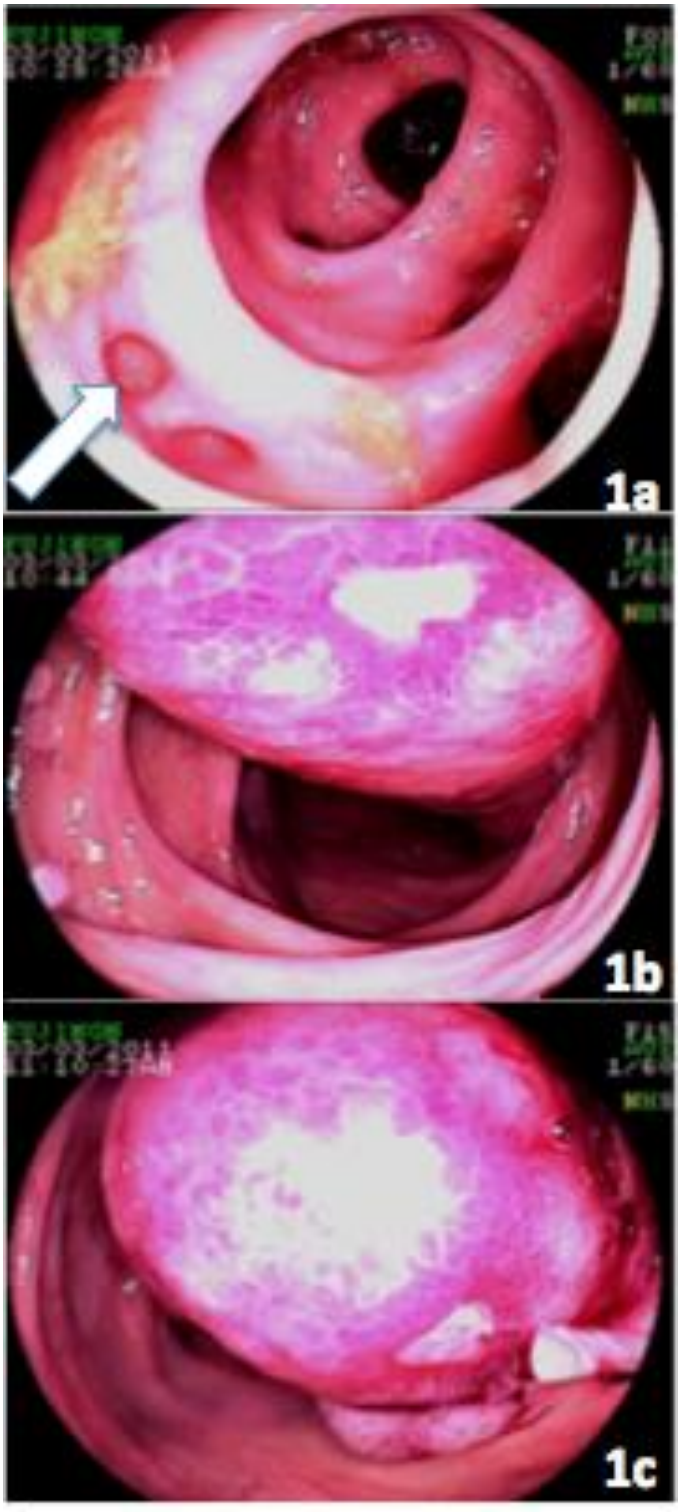

Figure 1. Colonoscopy in a 72-year-old male with abdominal pain and positive FOBT which turned out to be secondary to colonic angiolipoma. 1a. Multiple diverticula in the sigmoid colon without signs of recent bleeding (white arrow) are seen. 1b. A Colonic pedunculated mass with friable surface, and a broad base that compromised approximately 30% of the wall. 1c. This lesion produced a decrease of approximately 90% of colonic lumen.

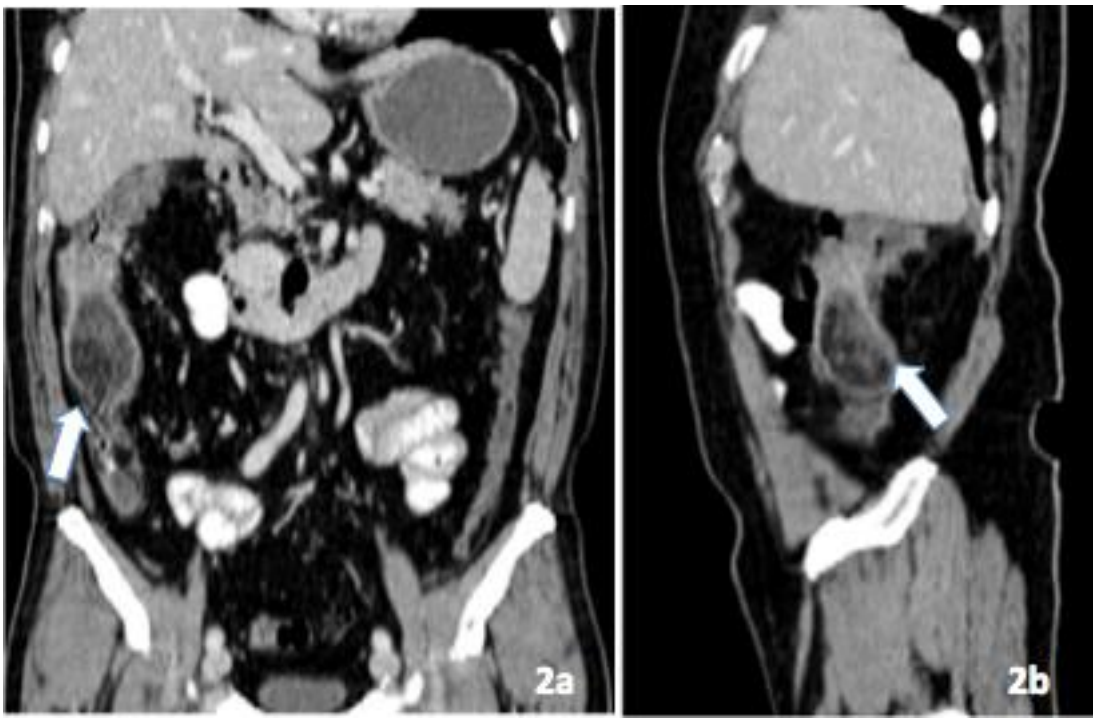

Figure 2. Abdominal contrasted tomography in a 72-year-old male that presented with abdominal pain and positive FOBT which turned out to be secondary to colonic angiolipoma. Coronal and sagittal reconstructions in portal phase obtained using an Emotion 6 Siemens, following the intravenous administration of 90 ml of Omnipaque 300 at a rate of 2.5 ml per second. The CT setting was 120 kVp with 100 mAs and 2mm slices were taken. Oral contrast was also administered. An oval and pedunculated lesion, dependent of the right colon is identified with predominant fat attenuation, and irregular areas of soft tissue attenuation (White arrows). It measured 6,3 x 4 x 4,2 cm.

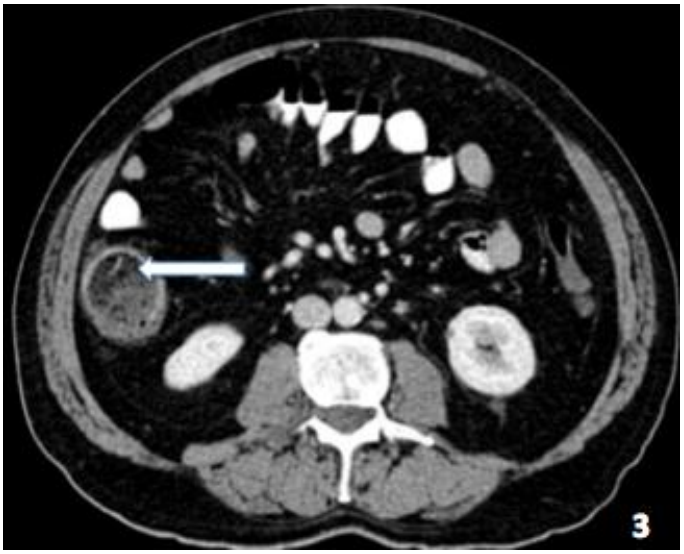

Figure 3 (left). Abdominal contrasted tomography in the same 72 year old male patient with colonic angiolipoma. Axial view in portal phase using an Emotion 6 Siemens, obtained following the intravenous administration of 90 ml of Omnipaque 300 at a rate of 2.5 ml per second. The CT setting was 120 kVp with 100 mAs and 2mm slices. Oral contrast was also administered. The lesion found in the right colon does not present significant enhancement. Some vessels are identified in its interior (White arrow).

Figure 4. Macroscopic Findings in a pathologic specimen of a 72-year-old male with a right colonic mass which turned out to be a colonic angiolipoma. 4a. A colonic Mass of 7 x 3 x 3 centimeters, exophytic and digitiform, connected to the mucosa by a thin stalk was visualized. The distal segment was ulcerated. 4b. Sections reveal a well defined lesion with white septa of fibrous appearance, which define yellowish lobular areas with a fatty pattern (white arrow).

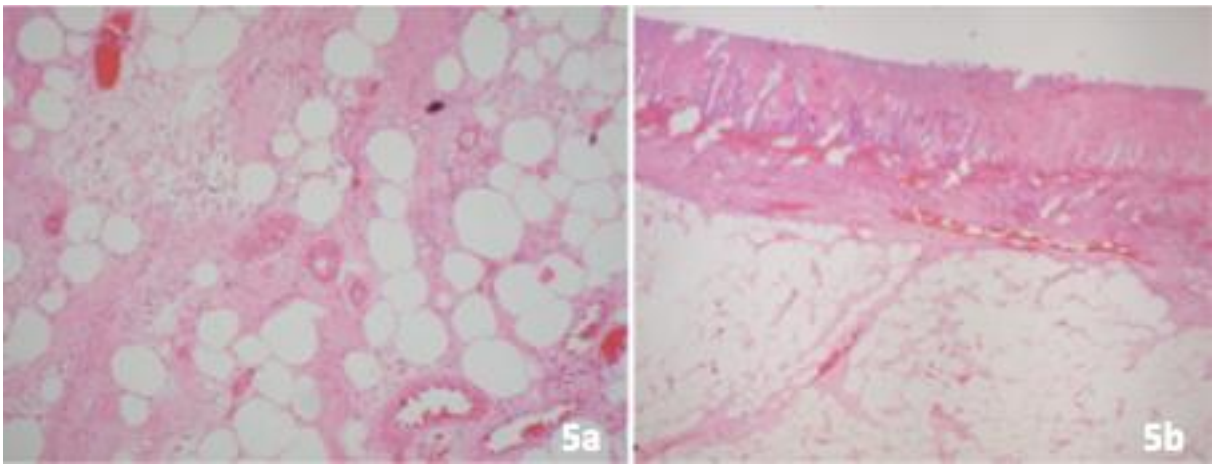

Figure 5. Findings in Hematoxylin and eosin (H/E). Microscopy of the same 72-year-old male patient with colonic angiolipoma. 5a. (4x H/E) shows ulcerated colon mucosa without dysplastic changes. There is benign proliferation of univacuolated adipose cells is present in the submucosa, grouped in lobules, separated by loose connective tissue septa. 5b. (10X H/E) Great amount of thin walled vascular channels dispersed throughout the tumor, some of them with small hyaline clots. No smooth muscle bundles were identified.

Incidence	Less that 1% of Colonic benign lesions
Gender ratio	Not available
Age predilection	Middle aged adults
Risk factors	None reported
Treatment	Excisional surgery or endoscopic removal
Prognosis	Excellent
Findings on imaging	CT: Those tumors that are mainly lipomatous present an adipose component without significant enhancement and those with less fat present areas of soft tissue attenuation, which can enhance.

Table 1: Summary table for colonic angiolipoma

Entity	Contrasted CT	Double contrast Fluoroscopy
Angiolipoma	Areas of enhancement and soft tissue attenuation.	Smooth, round or ovoid luminal defects.
Lipoma	Fat density	Smooth round or ovoid luminal defects
Intramural hematoma	High attenuation, bowel wall thickening.	Variable, bowel wall thickening.
Colon carcinoma	Smooth outer border margins. Tumor wall thickness more than 6mm in distended colon. Cluster of mesenteric nodes.	Variable. Plaque-like or pedunculated lesion in early cancer. In advanced cancer, can be large polypoid lesion with filling defect in dependent wall

Table 2: Differential diagnosis table for colonic angiolipoma

ABBREVIATIONS

C = Centigrade
CT = Computed tomography.
FOBT = Fecal occult blood test
g/dl = Grams per deciliter
HMB- 45 = Human Melanoma Black antibody.
KvP = Peak Kilovoltage.
mAs = Milliampere second.
Min = Minute
Mm Hg = Millimeters of mercury

KEYWORDS

Angiolipoma; Colon; Computed tomography

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