Angiolipoma of the Colon: A Rare Cause of Gastrointestinal Bleeding

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Abstract
Angiolipomas are benign, subcutaneous tumors that are rarely found in the gastrointestinal tract. Still, because they may present with abdominal pain and rectal bleeding, it is important to recognize the clinical, radiological, and endoscopic findings associated with these masses. Herein we report a case of an angiolipoma of the colon diagnosed in a 49-year-old male presenting with self-limited gastrointestinal bleeding who subsequently underwent surgical resection without complications.

Introduction

Angiolipomas are benign, encapsulated tumors that are typically located in subcutaneous tissues, especially in the extremities and trunk. These fatty tumors appear clinically similar to simple lipomas. However, unlike lipomas, they are histologically characterized by an excessive degree of vascular proliferation [1]. Angiolipomas are extremely rare in the colon, accounting for less than 1% of all colonic benign lesions [2]. Computed tomography (CT) typically suggests this lesion as a malignant appearing tumor, but it may be beneficial in aiding diagnosis by demonstrating areas of enhancement and adipose components. Resection with subsequent histopathological examination is usually required for diagnosis [2]. Angiolipomas are often painful on palpation; most of the colonic angiolipomas that have been documented in the
literature have been reported to present as vague abdominal pain, often associated with altered bowel habits or bloody stool. We report a rare case of an asymptomatic patient presenting for evaluation of self-limited episodes of rectal bleeding who was found to have a malignant-appearing mass in the hepatic flexure on colonoscopy that was later diagnosed as an angiolipoma.

**Case Report/Case Presentation**

A 49-year-old male with past medical history of hypertension and hyperlipidemia presented for evaluation of 3 days of self-limited rectal bleeding. He had no prior colonoscopies. He denied diarrhea, constipation, or abdominal pain. Physical examination demonstrated a soft, nontender, and nondistended abdomen with normoactive bowel sounds and no palpable masses. Colonoscopy was remarkable for a large, ulcerated, nonbleeding mass of malignant appearance in the hepatic flexure (Fig. 1). Biopsy of the mass was nondiagnostic and showed features of focal active colitis and erosion without evidence of dysplasia or malignancy. The remainder of the colonoscopy to the cecum did not demonstrate inflammation, polyps, or other masses. The patient was referred to colorectal surgery and oncology for further evaluation of the hepatic flexure mass. Positron emission tomography-computed tomography (PET-CT) results demonstrated an abnormal thickened appearance of the colon at the hepatic flexure with an adjacent 4.4 cm fatty structure in the proximal transverse colon without fluorodeoxyglucose radiotracer uptake (Fig. 2). The etiology of these findings was unclear, but malignancy remained high on the differential diagnosis, prompting colorectal surgical evaluation.

The patient then received a robotic-assisted laparoscopic right colectomy for definitive diagnosis of the mass and, if malignant, appropriate staging and potentially curative resection. The mass was completely removed, and an isoperistaltic ileotransverse colon anastomosis was created. There was no evidence of distant metastasis on the pelvis or peritoneum. The specimen was sent to pathology, and results demonstrated a 4.4 × 4.0 × 4.0 cm protruding mass with red and granular mucosa and submucosal fatty cut surfaces, consistent with angiolipoma (Fig. 3a). Immunohistochemical staining was conducted to rule out the possibility of angiomylipoma. On qualitative microscopic examination, the cells reacted to alpha-smooth muscle actin, but did not react to Melan-A, S100, HMB-45, or beta-catenin (Fig. 3b).

![Fig. 1. Endoscopic identification of malignant-appearing mass in hepatic flexure.](image)
Postoperatively, the patient tolerated the procedure well without complications and was discharged after 1 day of observation.

**Discussion**

Angiolipomas are typically painful yet benign tumors that are present on the trunk and extremities. These subcutaneous masses are rarely found in the gastrointestinal tract. Histologically, angiolipomas are characterized by their varying proportions of vascular structures and fatty tissue [1]. Moreover, angiolipomas can be distinguished from lipomas by their painful nature, which may be dependent on the degree of vascularity of the tumor [3]. Although many of the colonic angiolipomas in the literature presented with abdominal pain or discomfort, rectal bleeding or positive fecal occult blood testing on examination was more commonly reported on presentation [2, 4–11]. This is consistent with the patient in this case.

Fig. 2. PET-CT image of mass in hepatic flexure without FDG uptake.

Fig. 3. a Histopathology in H&E stain. The adipocytes demonstrate no nuclear atypia, mitosis, or necrosis. Branching network of thin- and thick-walled vessels vary in sizes. There are no visible fibrin thrombi within blood vessels (hematoxylin- and eosin-stained sections, magnification ×100). b Immunohistochemical staining using antibodies targeting Melan-A and photographed at ×200 magnification. Melan-A is negative, nonsupportive of angiomyolipoma.
report, who initially presented with asymptomatic rectal bleeding for 3 days. Many of the clinical manifestations of colonic angiolipomas appear to correlate with the size of the tumor, and symptoms tend to be nonspecific, making the diagnosis complicated [10].

Preoperatively, diagnosis may be aided by CT, magnetic resonance imaging, colonoscopy, barium enema, and/or endoscopic ultrasound. CT findings are dependent on the proportion of adipose tissue and vascular proliferation in the mass; for angiolipomas that are predominantly lipomatous, there may be no contrast enhancement. Angiolipomas that include a predominant vascular component may enhance on CT in many small regions [12]. In this patient, PET-CT was remarkable for a dense fatty structure, but findings were nonspecific; hence, further evaluation was necessary to elucidate the etiology of the mass. Colonoscopy is beneficial for enabling physicians to visualize the mass and perform biopsies. Although biopsies may distinguish an angiolipoma from a malignant tumor, they are not always diagnostic, as was in the case of our patient. The biopsy in this case demonstrated focal inflammation without signs of dysplasia or malignancy, but surgical evaluation was still necessary to confirm the result via histopathological examination, as endoscopic visualization was particularly concerning for malignancy. Preoperative diagnosis of angiolipoma is possible when aided by CT, endoscopy, magnetic resonance imaging, and other modalities, but surgical pathology remains the gold standard for the final diagnosis of the tumor.

Treatment of angiolipoma may vary, depending on the size and symptoms of the patient. Endoscopic resection may be indicated for polyps that are small in size and carry little risk for bleeding or perforation [8]. When the lesion has grown to a large size, surgical resection is the recommended treatment. Ultimately, when angiolipomas are fully excised, the prognosis is excellent [8]. In the case of our patient, laparoscopic techniques enabled the complete resection of the tumor in a minimally invasive fashion, reducing the risk of recurrence and surgical complications postoperatively.

In conclusion, angiolipomas are rare, benign, subcutaneous tumors composed of adipose tissue and vascular components. While these tumors are typically painful, they may present with self-limited rectal bleeding or positive fecal occult blood test in an otherwise asymptomatic patient. Hence, even though they are rare, it is important to understand the clinical, radiologic, and endoscopic findings associated with these tumors to improve diagnostic accuracy and ensure proper therapeutic intervention.

Statement of Ethics

This study protocol was reviewed by the University of Arizona College of Medicine Institutional Review Board, and the study was granted an exemption from requiring ethics approval. Written informed consent was obtained from the participant for the publication of the details of this medical case and any accompanying images.

Conflict of Interest Statement

The authors have no conflicts of interest to declare.

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Author Contributions

Shiva Ratuapli, Eugene Kim, and Wendi Zhou made and confirmed the diagnosis, provided the details of the case, and contributed to the design of the report. Maya Patel and Shiva Ratuapli drafted and edited the manuscript. All authors read and approved the final version of the manuscript.

Data Availability Statement

All data generated or analyzed during this report are included in this article. Further enquiries can be directed to the corresponding author.

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