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## Case Report

## Torsion of a giant antimesenteric lipoma of the sigmoid: a rare cause of acute abdomen

Júlia Azevedo Miranda, MD<sup>a,\*</sup>, Públio César Cavalcante Viana, MD<sup>a</sup>,  
Luciana Rodrigues Meirelles, MD, PhD<sup>b</sup>, Pedro Sergio Brito Panizza, MD<sup>a</sup>,  
Ricardo Jureidini, MD, PhD<sup>c</sup>, Natally Horvat, MD<sup>a</sup>

<sup>a</sup> Department of Radiology, Hospital Sírio-Libanês, Adma Jafet 91, São Paulo, SP 01308-050, Brazil

<sup>b</sup> Department of Pathology, Hospital Sírio-Libanês, Adma Jafet 91, São Paulo, SP 01308-050, Brazil

<sup>c</sup> Department of Surgery, Hospital Sírio-Libanês, Adma Jafet 91, São Paulo, SP 01308-050, Brazil

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## ABSTRACT

Lipomas of the gastrointestinal tract are uncommon benign tumors of mature adipocytes and may occur in any portion along the gut. Depending on location they may have a variety of clinical presentations and even simulate malignant neoplasms. We report a case of a 58-year-old woman who presented with acute pelvic pain. An emergency sonogram detected a hyperechogenic mass in the left adnexal region, with no vascularization on Doppler. A computed tomography confirmed the hypothesis of a fat containing tumor with signals of torsion. The patient underwent laparoscopy which depicted a mass over the antimesenteric side of the sigmoid with signs of ischemia and twisted vascular pedicle. The lesion was resected, and the microscopy confirmed the diagnosis of lipoma. The multidisciplinary team in the emergency room must be aware of these possible complications in order to optimize patient care.

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### Introduction

Lipomas of the gastrointestinal tract (GIT) are uncommon benign tumors of mature adipocytes and may occur in any portion along the gut. The incidence of gastrointestinal lipomas varies; however, due to imaging and endoscopic examination, more cases are being detected [1]. Despite being a benign tumor, it has potential complications which are rare and related

to morphology and location, including intussusception, ulceration, intestinal obstruction, and abdominal pain [1].

The majority of lipomas of GIT are solitary, submucosal, small, and located in the right colon [1]. Lipomas of mesentery, mesocolon, and antimesenteric side of intestine are extremely rare, they may reach larger dimensions and their incidence are limited to case reports. Torsion of an intra-abdominal lipoma is a rare cause of acute abdomen and most of them were described within the mesentery or omentum. The objectives of

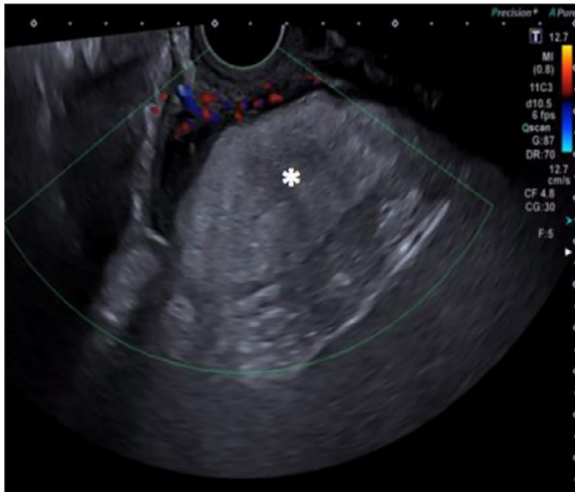
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\* Corresponding author.

E-mail address: [juazevedomiranda@gmail.com](mailto:juazevedomiranda@gmail.com) (J.A. Miranda).

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**Fig. 1** – Transvaginal ultrasound: demonstrated a rounded hyperechogenic mass in the left adnexal region (asterisk).

this study are to describe a case of torsion of a giant antimesenteric lipoma and to review the current literature.

## Case report

A 58-year-old woman was admitted in the emergency room with acute pelvic pain that started 1 day before her admission. The patient had pelvic pain with rebound tenderness and the pain was described as worse when walking. She had been treated for breast cancer 8 years before with no evidence of disease and was in use of an aromatase inhibitor (exemestane). On physical examination, she had a blood pressure of 110/57 mmHg, a pulse rate of 104 beats per minute, a respira-

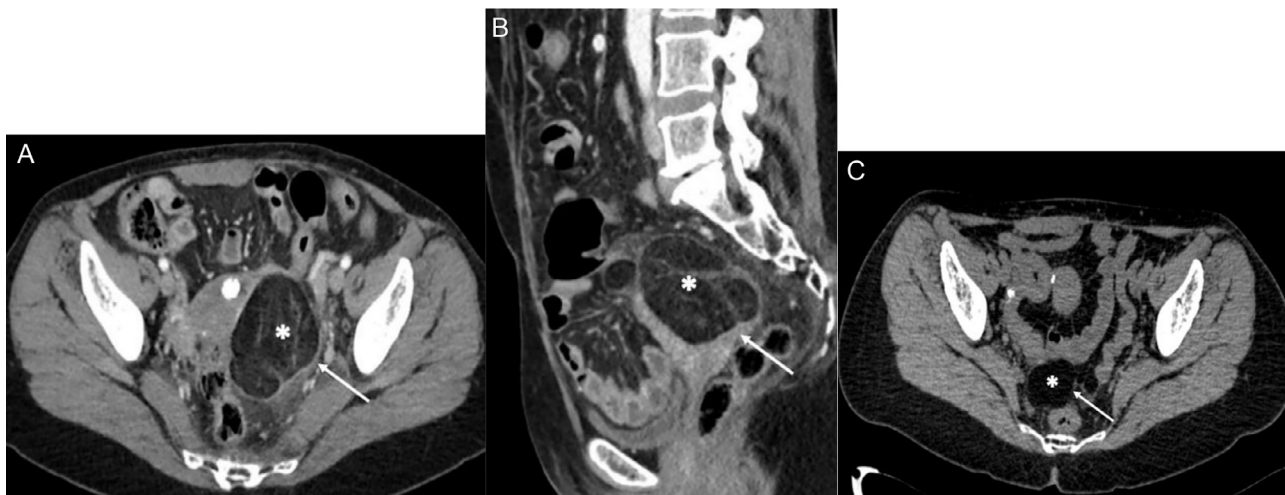
tory rate of 16 breaths per minute, oral temperature of 36.2 °C, and oxygen saturation of 98%. Physical examination was otherwise normal, and the laboratory tests were normal.

Transvaginal ultrasound was requested to further study the pelvic organs and it demonstrated a rounded hyperechogenic mass in the left adnexal region, displacing the ovary anteriorly, measuring 7.5 cm and with no vascularization on color Doppler (Fig. 1). A contrast-enhanced computed tomography (CT) of the abdomen and pelvis was subsequently requested to further evaluate the mass. CT showed a large fat-containing mass measuring 7.5 cm next to the sigmoid colon surrounded by fat stranding (Fig. 2A and B). Abdominal CT did not demonstrate any other relevant abnormality. CT performed 7 years before the admission were retrieved from our digital archive and the comparison demonstrated that the lesion increased in size, changed its orientation within the pelvis and appeared a thick capsule surrounding the lesion and internal septations (Fig. 2C). Considering the acute onset of pain and the imaging features, the most likely diagnosis suggested by radiologists was torsion of lipoma from sigmoid or, less likely, torsion of a fat-containing left ovarian mass.

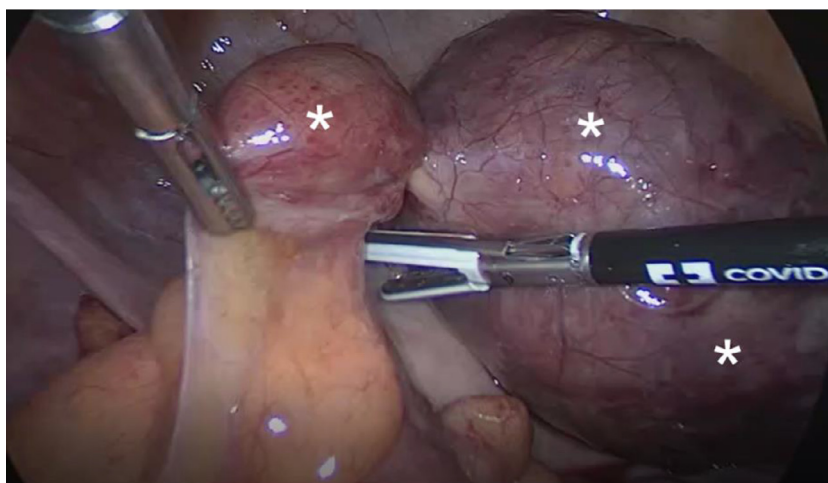
The patient underwent laparoscopy which depicted a nodular mass over the antimesenteric side of the sigmoid with signs of ischemia and twisted vascular pedicle (Fig. 3). The lesion was resected, and the microscopy confirmed the diagnosis of lipoma and showed areas of hemorrhage, vascular congestion and inflammatory infiltrate, suggestive of lipoma infarction (Fig. 4).

## Discussion

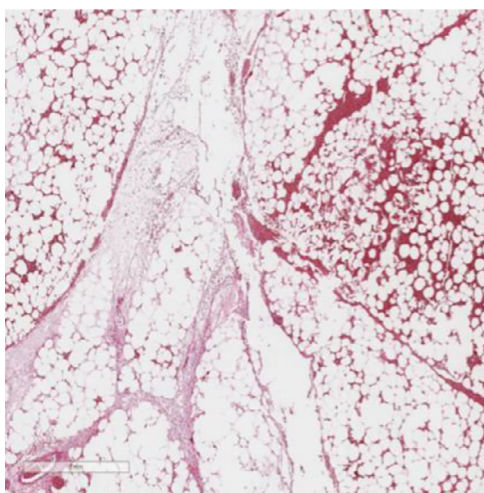
Complications of lipomas of GIT are rare and related to morphology and location. If submucosal, they may be a leading point of an intussusception or may develop an ulceration and cause intestinal bleeding and/or iron deficiency anemia. If



**Fig. 2** – A and B. Contrast-enhanced CT of the abdomen and pelvis: showed a large fat-containing mass next to the sigmoid colon (asterisk) surrounded by fat stranding (arrow). C. Contrast-enhanced CT of the abdomen and pelvis: performed 7 years before the admission were retrieved from our digital archive and the comparison demonstrated that the lesion (asterisk) was smaller and located medial and posterior within the pelvis; and there was no fat stranding (arrow).



**Fig. 3 – Intraoperative photograph: nodular mass (asterisks) over the antimesenteric side of the sigmoid with signs of ischemia.**



**Fig. 4 – Microscopy evaluation: confirmed the diagnosis of lipoma and showed areas of hemorrhage, vascular congestion and inflammatory infiltrate, suggestive of infarction.**

subserosal or located in the mesentery and mesocolon they can cause intestinal obstruction and abdominal pain [2]. With regard to antimesenteric lipomas of the intestine, we have

found only one case in literature within the ileum [3]. There are few cases in the literature of torsion of GIT lipoma, most of them originating from mesentery or omentum. Herein, we report a rare case of torsion of an antimesenteric lipoma of the sigmoid. To our knowledge, such case has not been reported previously.

Locations of mesenteric lipomas include the mesentery, surrounding the jejunum and ileum, the mesocolon surrounding the colon, and in women, the peritoneum contained by the broad ligament. Lipomas generally are slow-growing fat-containing masses, with regular margin, which do not penetrate into surrounding organs [4]. Mesenteric lipomas have an equal incidence for both gender [4] and there is an increased incidence reported in adults with obesity, diabetes mellitus, hypercholesterolemia, trauma, radiation, family history, and certain chromosomal abnormalities [5].

Mesenteric lipomas are usually asymptomatic, but larger lipomas can twist around their vascular pedicle, leading to ischemia and infarction. In case of torsion, patient refers an acute onset of pain and imaging may show inflammatory changes, such as edema and fat stranding [6]. There are 4 cases of mesenteric lipomas complicated with torsion described in the literature [3,5–7]. Table 1 summarizes those case reports. In the literature, all cases occurred in men, the mean age was 38.5 years (range, 6–9), 2 lipomas were located within the mesentery of ileum, 1 in the antimesenteric border of ileum

**Table 1 – Summary of cases of torsion of lipoma in the mesentery or mesocolon described in the literature.**

Author, Year	Gender	Age (years)	Location	Size on largest axis (cm)	Treatment
Yang et al., 2017	Male	67	Antimesenteric border of the ileum	12.0	Surgical resection of the ileum and tumor mass
Watt et al., 2015	Male	72	Mesentery of the ileum	Not described	Surgical resection of 30 cm of small bowel and ileostomy*
Laguna et al., 2014	Male	6	Transverse mesocolon	8.3	Surgical resection of the lesion
Wolko et al., 2003	Male	9	Mesentery of ileum	15.0	Surgical resection of the lesion

\* This patient also had intestinal perforation.

and 1 in the transverse mesocolon, the mean size was 11.8 cm (range, 8.3–15.0 cm) and all of them were treated with surgical resection.

The main differential diagnosis of fat-containing mass of the GIT are liposarcoma and teratoma. The differentiation between lipoma and malignant fat-containing tumors can be challenging and, eventually, the histopathological correlation is needed [6]. Increase in size and development of new enhancing septations and a thickened capsule may suggest liposarcoma; however, in a patient with acute clinical presentation these changes may be due to torsion, as demonstrated in our case. Furthermore, change in lesion orientation and presence of adjacent inflammatory changes on CT favor the hypothesis of torsion.

Lipomas of the GIT are benign lesions; however, they may present complications that can result in acute abdomen, including torsion. The multidisciplinary team in the emergency room must be aware of these possible complications in order to optimize patient care.

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### Supplementary materials

Supplementary material associated with this article can be found, in the online version, at doi:[10.1016/j.radcr.2018.06.011](https://doi.org/10.1016/j.radcr.2018.06.011).

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