

CASE REPORT

Unusual cause of acute abdomen in emergency room: intestinal lipoma - case series and literature review*Causa incomum de abdome agudo na sala de emergência: lipoma intestinal - série de casos e revisão de literatura*

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ABSTRACT: Lipomas are benign lesions formed by adult fatty cells and surrounded by a fibrous capsule. These tumors may be asymptomatic or present with a variety of symptoms and may progress as a surgical emergency or be misdiagnosed as malignant disease. Thus, we describe three cases of patients diagnosed with gastrointestinal lipomas (one case in the small intestine, one case in the cecum, and the third in the sigmoid) after the onset of clinical picture suggestive of acute abdomen. The first two cases were initially approached laparoscopically and after resection, the anastomosis were performed by extracorporeal pathways, through an incision of Pfannenstiel. The third case had a laparotomy approach. The study was observational and retrospective with analysis of medical records. Lipomas of the gastrointestinal tract are rare, but should be remembered as a differential diagnosis, especially in patients with acute abdominal pain, usually compatible with obstructive acute abdomen.

Keywords: Acute abdomen; lipoma; intestinal pseudo-obstruction; laparoscopy; benign lesion.

RESUMO: Os lipomas são lesões benignas formadas por células gordurosas adultas e circundadas por cápsula fibrosa. Esses tumores podem ser assintomáticos ou apresentar-se com uma variedade de sintomas, podendo evoluir como uma emergência cirúrgica ou serem erroneamente diagnosticados como doença maligna. Assim, descrevemos três casos de pacientes diagnosticados com lipomas gastrointestinais (um caso de intestino delgado, um caso de ceco, e o terceiro de sigmoide) após início de quadro clínico sugestivo de abdome agudo, os dois primeiros casos foram inicialmente abordados por via laparoscópica e posteriormente a ressecção e anastomose foram realizadas por vias extracorpóreas, através de uma incisão de Pfannenstiel. O terceiro caso teve abordagem laparotômica. O estudo foi observacional e retrospectivo com análise de prontuários médicos. Os lipomas do trato gastrointestinal são raros, porém devem ser lembrados como diagnóstico diferencial, principalmente nos pacientes que apresentam quadro de dor abdominal aguda, geralmente compatível com abdome aguda obstrutivo.

Palavras-chave: Abdome agudo; Lipoma; Pseudo-obstrução intestinal; Laparoscopia; Lesão benigna.

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INTRODUCTION

Lipomas are benign lesions formed by fatty cells surrounded by a fibrous capsule¹. First described in the gastrointestinal tract (GIT) by Bauer in 1757, they are a rare condition, although it is the most common nonepithelial neoplasm in GIT²⁻⁴, and may be sessile or pediculate⁵.

The adipose cells that originate the lipomas are of the unilocular type, the same ones that make up the common adipose tissue⁶. From the lipomas capsule, septa of the same tumor nature are broken, which contain collagen, and therefore determine the consistency of the mass¹.

Gastrointestinal lipomas may be symptomatic or not, presenting a risk of evolving as a surgical emergency or being misdiagnosed as malignant disease¹.

CASES REPORT

Case Report 1

Male patient, 64 years old, with a history of pain on the left flank for 30 days, colic type, without changes in bowel habit, associated with melena for 10 days, without hematochezia or weight loss. He denied comorbidities, use of medications, alcohol consumption and smoking and had an appendectomy 25 years ago. Abdominal ultrasound (US) from the day before admission showed a nodule in the left hypochondrium suggestive of thickening of the intestinal loop.

The patient was hospitalized with a diagnostic hypothesis of colon cancer, and colonoscopy was performed, which showed diverticular disease of the colon, in a universal, uncomplicated way. Esophagoduodenoscopy showed mild enanthematous gastritis.

A computed tomography of the abdomen (Figure 1) showed signs suggestive of intestinal invagination involving the jejunal segment and occupying the left flank, with an extension of approximately 15 cm, without clear definition of expansive processes or related neoplastic causes.



Figure 1 - Case 1: Computed tomography of the abdomen showing a sign of the target suggestive of intussusception

Surgical Description 1

The patient was then submitted to a laparoscopic approach, revealing dilated small bowel loops on the left flank and segment of approximately 5 cm hardened with insinuation of one loop in another, in addition to adhesions in the terminal ileum and mesentery. Subsequently, an extracorporeal approach was performed with a Pfannenstiel incision, with resection of approximately 15 cm of the invaginated jejunum segment, and an end-to-end jejunum-jejunal anastomosis was performed (Figure 2 - A, B, C). Hemorrhagic areas in the mucosa adjacent to the lesion were also noted. In the meso, a firm, brownish lymph node was identified, measuring 0.6 x 0.4 x 0.3 cm.



Figure 2 - Case 1: A. Segment of resected small intestine; B. Jejunal polypoid tumor; C. Enteric anastomosis

The patient had no further complications, being discharged from the hospital on the 13th postoperative day. The previously sectioned pathological study of the small intestine segment, measuring 18.5 cm in length and 3.0 cm in diameter, revealed smooth and brown serosa. In the mucosa, 7.5 cm from the smallest margin, a firm, yellowish polypoid tumor was observed,

measuring 4.5 x 3.5 x 2.0 cm, showing invagination into the intestinal lumen (Figure 3. A). Diagnosed jejunum segment (intussusception); submucous lipoma, ulcerated, measuring 4.5cm, associated with intussusception and serositis. Surgical margins were free of neoplasia. A lymph node showed reactive follicular hyperplasia.

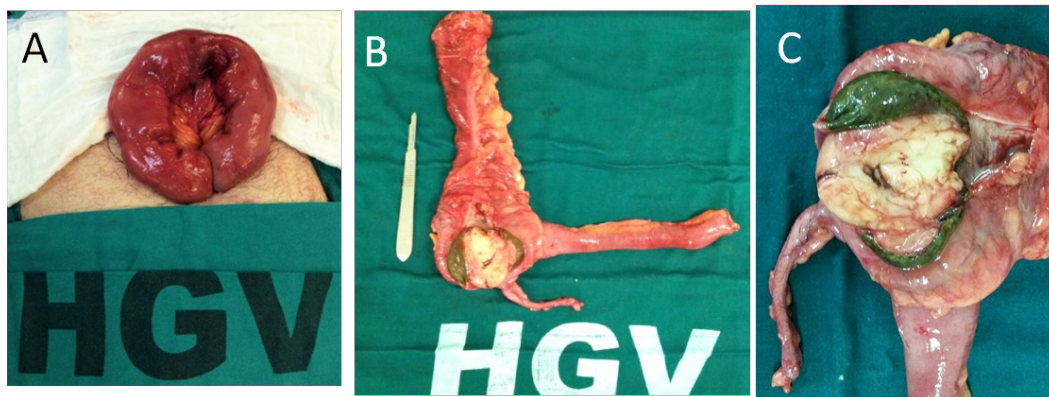


Figure 3 - A. Segment of small intestine affected by invagination (Case 1); B. Resected surgical specimen containing terminal ileum, cecum, vermiform appendix and ascending colon (Case 2); C. Tumor in region and cecum with lipomatous aspect (Case 2)

Case Report 2

A 40-year-old female patient was admitted to the emergency room with a history of epigastric pain that migrated to the right iliac fossa two days ago, associated with vomiting. She denied comorbidities. On physical examination, she presented pain with sudden decompression in the right iliac fossa. USG of the abdomen was suggestive of acute appendicitis.

Surgical Description 2

The patient underwent a laparoscopic approach on the same day of admission. Surgical findings were intact vermiform appendix, little hyperemia, with invaginated basis and presence of nonspecific voluminous increase of the cecum. The entire right colon was freed through the avascular line and part of the transverse; after resection of the piece, an extracorporeal approach was performed - a Pfannenstiel incision was performed to remove the piece and make an ileum-transverse lateral anastomosis with linear stapler. A spheroid, fibroelastic mass of 8 cm in diameter inside the cecum with partial invagination of the base of the appendix was found. The appendix was normal in appearance (Figure 3. A).

The patient had no further complications and was discharged on the fifth postoperative day. In outpatient return, it brought results of histopathological examination: analyzed surgical specimen of right colon and terminal ileum in monobloc, measuring 33 cm in length and diameter ranging between 2.5 and 4.5 cm, partially covered by mesentery. When opened, the mucosa was preserved, yellow-green, except in the cecum where pediculated, firm-elastic tissue formation was observed, with 6.0 x 6.0 x 3.5 cm. Cutting surface of the formation has an adipose aspect. The appendix measured 7.0 x 0.8 cm, grayish-brown with virtual light. There were no lymph nodes in the specimen (Figure 3. B). Histological diagnosis: pediculated lipoma, ulcerated in the submucosa

of the cecum. Associated mild chronic colitis. Lymphoid hyperplasia of the cecal appendix.

Case Report 3

A 49-year-old female patient was admitted to the emergency room with severe diffuse abdominal pain three days ago. He was on the 15th postoperative day of total hysterectomy with bilateral oophorectomy. An abdominal CT with venous contrast showed hypodense collections in the pelvis, the largest measuring 10.8 x 8.3 x 4.7 cm and the right, measuring 3.5 x 2.9 x 2.3 cm, with a small amount of free fluid in the abdominal cavity; expansive formation with fat-like density adjacent to the rectum wall and intra-abdominal herniation of small bowel loops, adipose tissue and mesenteric vessel, surrounding the sigmoid, but without definition of upstream obstruction.

Surgical Description 3

The patient was then submitted to urgent laparotomy whose findings were: moderate amount of hematic secretion in the abdominal cavity, without signs of active bleeding; absence of pus or enteric secretion. Identified invagination of the entire sigmoid to the rectum; during an attempt to reduce invagination, there was extensive sigmoid devascularization; "head" of the invagination represented by giant polypoid lesion of 6 cm on its largest axis, of possible lipomatous lineage. Vermiform appendix with firm adhesion and area of inflammation near the ligation of the right gonad vessels. Surgical team chose to perform appendectomy and sigmoidectomy with manual colorectal anastomosis.

The patient had no further complications being discharged from the hospital on the seventh postoperative day. The pathological study showed: sigmoid colon material - colonic segment measuring 43 cm in length and 5.9 cm in the largest diameter, smooth and pale, noting an area of continuity measuring 6.0 cm in diameter

to 16 cm from the smallest margin, where polypoid tumor is visualized. When opened, it is observed that the tumor is elastic, measuring 6 x 4.5 x 3.5 cm. The tumor is of adipose aspect. In the adjacent meso, four yellowish-brown lymph nodes were identified, the largest measuring 1.5 x 0.8 x 0.5 cm. Vermiform appendix measuring 8 cm

in length and 1 cm in its largest diameter, smooth outer surface, partially covered by purulent material (Figure 4). Histological diagnosis: pediculated and ulcerated lipoma of the sigmoid colon, associated chronic colitis. Vermiform appendix within normal limits.

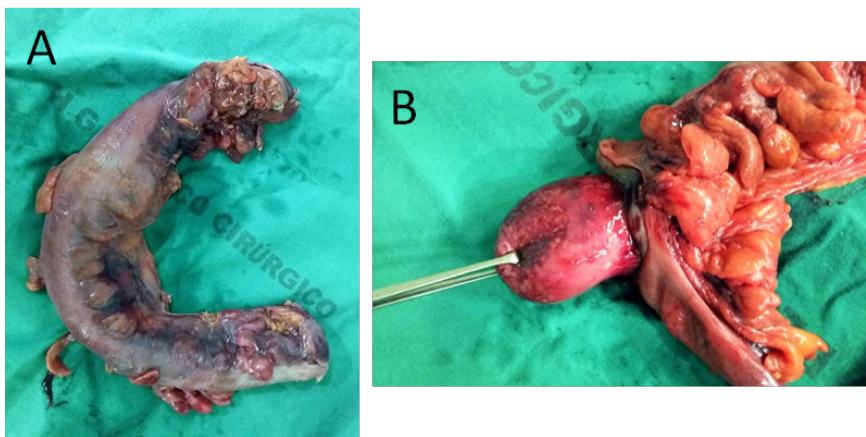


Figure 4 - Case 3: **A.** Surgical specimen - sigmoid; **B.** Open surgical specimen containing polypoid tumor

DISCUSSION

Intestinal lipoma has a higher incidence in women (2:1)⁷, which ended up coinciding with our present report. In a review of 64 patients with symptomatic lipomas, 41 (64%) were women.¹ The most common age is in the fifth to sixth decades of life for the colon, with both cases being outside the standard age group. For the small intestine, the predominant age group is from the sixth to the seventh decades^{8,9}, and in this case, the patient described is in this range.

The most common site for GI lipoma is the colon, specifically the cecum and ascending colon. Our study describes one case in the cecum and one in sigmoid, which is rarer. The place where lipoma is most common is ileus, and the jejunum is more infrequent, as identified in Case 1.

According to Mouaquit¹⁰ in his review of 51 cases of intestinal intussusceptions in adults induced by lipoma, 26 occurred in the small intestine, 21 of ileum and only 5 in jejunum. Twenty-three were in the colon, 3 in the cecum and 3 in the sigmoid. Seven were from the ascending colon, 6 from the transverse colon and 4 were in the descending colon. Only 2 occurred in the stomach, exemplifying the rarity of this disease. D'Javid et al.¹ reviewed 278 cases, of which 44% were between the ileocecal valve and the distal portion of the ascending colon, before liver flexure, 21.5% in the transverse colon and 34.5% in the most distal segment, including the rectum.

According to Jiang⁷, after reviewing 33 cases, the most common signs and symptoms include abdominal pain (42.4%), rectal bleeding (54.5%) and alteration of

bowel habit (24.2%). Our three cases presented abdominal pain as a cardinal symptom, consistent with the literature. Only the case of jejunum lipoma presented with other symptoms associated, among them, melena; no patient presented change in bowel habit.

Lipomas usually become symptomatic when they exceed 2 cm in diameter, and the size of the lipoma is directly related to acute complications such as obstruction and invagination¹¹. The three cases reported in this article had large diameters, the smaller one 4.5 cm and the largest was 6 cm. The most frequent acute complication of intestinal lipoma is intussusception¹¹, found in the current literature.

Surgical intervention is mandatory in situations of obstruction, intussusception, perforation or massive hemorrhage caused by intestinal lipoma. Lipomas that do not generate surgical urgency, but are symptomatic, or large (even asymptomatic) should also be resected¹².

Several surgical methods, such as local excision through a small two-point incision, segmental colon resection, and hemicolectomy, can be employed to treat a colon lipoma. An important criterion to be considered when choosing the procedure is to evaluate the existence of intussusception, size, tumor location and correct preoperative diagnosis^{7,13}. The use of minimally invasive techniques should be encouraged due to less surgical trauma and the already known advantages of laparoscopy.

With the advancement of colonoscopy and endoscopic cauterization, loop resection by colonoscopy has become popular and has proven to be a safe therapeutic method, especially for small lesions. However, lipomas larger than 2 cm in diameter are associated with a higher risk of perforation, and the surgical approach is preferable⁷.

Kim et al.¹⁴ described endoscopic removal of lipoma with a maximum diameter of 3.8 cm, assisted by injection of saline solution with or without epinephrine in the submucosa below the lesion, without complications. Jiang⁷ reports a similar result, with safe endoscopic removal of a large lipoma of 5 cm.

However, there is consensus in the literature that inadequate cases for endoscopic resection should always have surgical resection indicated, either by laparoscopy or open approach, for symptom relief and prevention of intussusception and other complications¹².

As concluded by Jiang⁷, surgical removal should be the preferred choice in the following situations: lipoma with diameter > 4 cm, with a limited sessile or pedicle appearance; uncertain preoperative diagnosis; lesions with significant symptoms, especially the appearance of intussusception; involvement of the muscular or serous layer; and injury that cannot be radically restrained by colonoscopy¹⁻⁵. Since the three cases described in this article have been an emergency with acute complications, the surgical approach proved to be the most appropriate.

Because lipomas are benign tumors, the margin of

malignancy-free resection should be immediately checked in the operating room using freezing biopsy in order to confirm that the tumor is actually benign and avoid large intestinal resections. However, if malignancy is not excluded, the surgical procedure should be enlarged with lymph node dissection and radical intestinal resection²⁻⁶. Due to the unavailability of frozen biopsy in the emergency room of our service, which made intraoperative analysis impossible, all lesions were resected with a wide margin of safety.

CONCLUSIONS

This manuscript has relevance because it describes three cases of a rare condition: gastrointestinal lipoma. Due to the low prevalence, there is difficulty in conducting clinical trials with a greater number of patients, emphasizing the importance of case series. Although rare, gastrointestinal lipomas should be remembered as a differential diagnosis, especially in patients with abdominal pain compatible with acute abdomen, intestinal obstruction, and intestinal intussusception in adults.

Author's participation: We inform for due purposes that the article was prepared jointly by the group of authors with the following degree of participation: Data collection - *Lira NRT, Gonçalves MDG*. Organizational orientation and on the essence, argumentation and relevance of the work: *Lira NRT, Nóbrega Júnior BG, Moreira RS*. Analysis, research of articles, reading and exclusion of research not relevant to the involvement of the chosen theme: *Lira NRT, Gonçalves MDG, Lima DL, Lima RNCL*. Reading and writing the content: (*Lira NRT, Gonçalves MDG, Lima DL, Lima RNCL*). Revision of the text regarding integrity and veracity as the sources used: *Lira NRT, Gonçalves MDG, Moreira RS, Lima DL, Lima RNCL, Nóbrega Júnior BG, Goes GHB*. Thus, the group of authors certifies joint participation in the preparation of the article, hoping to contribute to the theme in question.

REFERENCES

1. Lee KJ, Kim GH, Park DY, Shin NR, Lee BE, Ryu DY, Kim DU, Song GA. Endoscopic resection of gastrointestinal lipomas: a single-center experience. *Surg Endosc*. 2014;28(1):185-92. doi: <https://doi.org/10.1007/s00464-013-3151-9>.
2. Martinez-Mier G, Ortiz-Bayliss AB, Alvarado-Arenas R, Carrasco-Arroniz MA. Caecum lipoma: a rare cause of lower gastrointestinal bleeding. *BMJ Case Rep*. 2014;2014:bcr2014206526. doi: [10.1136/bcr-2014-206526](https://doi.org/10.1136/bcr-2014-206526).
3. Yaman İ, Derici H, Demirpolat G. Giant colon lipoma. *Ulus Cerrahi Derg*. 2013;31(2):102-4. doi: <https://doi.org/10.5152/UCD.2013.15>.
4. Presti ME, Flynn MF, Schuval DM, Vollmar TM, Zotos VD. Colonic lipoma with gastrointestinal bleeding and intussusception. *ACG Case Rep J*. 2015;2(3):135-6. doi: <https://doi.org/10.14309/crj.2015.32>.
5. Geraci G, Pisello F, Arnone E, Sciuto A, Modica G, Sciumè C. Endoscopic resection of a large colonic lipoma: case report and review of literature. *Case Rep Gastroenterol*. 2010;4(1):6-11. doi: <https://doi.org/10.1159/000260053>.
6. Yatagai N, Ueyama H, Shibuya T, Haga K, Takahashi M, Nomura O, Sakamoto N, Osada T, Yao T, Watanabe S. Obscure gastrointestinal bleeding caused by small intestinal lipoma: a case report. *J Med Case Rep*. 2016;10(1):226. doi: <https://doi.org/10.1186/s13256-016-1014-4>.
7. Seow-En I, Foo FJ, Tang CL. Jejunojejunal intussusception secondary to submucosal lipoma resulting in a 5-year history of intermittent abdominal pain. *BMJ Case Rep*. 2014;2014:bcr2014207297. doi: <https://doi.org/10.1136/bcr-2014-207297>.
8. Virgilio E, Mercantini P, Cavallini M. Is endoscopic resection a correct treatment for atypical gastrointestinal lipomas? *World J Clin Cases*. 2016;4(1):30-2. doi: <https://doi.org/10.12998/wjcc.v4.i1.30>.
9. Chehade HH, Zbibo RH, Nasreddine W, Abtar HK. Large ileocecal submucosal lipoma presenting as hematochezia, a case report and review of literature. *Int J Surg Case Rep*. 2015;10:1-4. doi: <https://doi.org/10.1016/j.ijscr.2015.03.007>.
10. Mouaqit O, Hasnain H, Chbani L, Benjelloun B, El Bouhaddouti H, Ibn El Majdoub K, Toughrai I, Laalim SA, Oussaden A, Maazaz K, Amarti A, Taleb KA. Adult intussusceptions caused by a lipoma in the jejunum: report of a case and review of the literature. *World J Emerg Surg*. 2012;7(1):28. doi: <https://doi.org/10.1186/1749-7922-7-28>.
11. Menezes CC, Falcão A, Roque R, Rita C. Invaginação intestinal no adulto secundária a um lipoma. Caso clínico.

Rev Port Coloproctol. 2015;32-5. Disponível em: <https://ptdocz.com/doc/971097/invagina%C3%A7%C3%A3o-intestinal-no-adulto-secund%C3%A1ria-a-um-lipoma.-...>

12. Cin N, Tavusbay C, Kar H, Durak E, Peker Y, Tatar F, et al. Colonic lipomas: report of sixteen cases and review of the literature. *Acta Med Mediterranea*, 2016;32:399. doi: https://doi.org/10.19193/0393-6384_2016_2_60.
13. Kwag SJ, Choi SK, Jung EJ, et al. Surgical strategy for colonic intussusception caused by a giant colonic lipoma:

a report of two cases and a review of the literature. *Ann Coloproctol*. 2014;30(3):147-50. doi: <https://doi.org/10.3393/ac.2014.30.3.147>.

14. Kim KH, Namgung H, Park DG. Adult intussusceptions: preoperative predictive factors for malignant lead point. *Ann Surg Treat Res*. 2014;86(5):244-8. doi: <https://doi.org/10.4174/astr.2014.86.5.244>.

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