

Image Quiz for Surgeons

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Rare Cause of Intestinal Obstruction – Submucous Lipoma of the Sigmoid Colon

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Rezumat

Cauză rară de obstrucție intestinală – lipom submucos sigmoidian

Lipomul colonic este o tumoră benignă și rară. Cel mai frecvent lipoamele sunt asimptomatice, descoperirea lor fiind întâmplătoare. Diagnosticul este de obicei ușor prin colonoscopie asociată cu biopsii. Examenul CT abdominal are, de asemenea, rolul său în procesul de diagnosticare și în evaluarea extensiei tumorale. Tratamentul depinde esențial de tabloul clinic, de dimensiunea și localizarea lipomului și implică rezecția endoscopică sau excizia chirurgicală. Prezentăm cazul unei femei de 56 de ani, la care s-a diagnosticat întâmplător în urmă cu 2 ani un lipom sigmoidian prin colonoscopie de screening și apoi examen CT abdominal, pacienta prezentând simptome nespecifice iar lipomul submucos fiind de mici dimensiuni; la momentul actual tratamentul chirurgical (sigmoidectomie incluzând tumora) a fost determinat de apariția sindromului subocluziv și a hematocheziei, datorită proliferării intralumenale a tumorii.

Cuvinte cheie: lipom submucos, sindrom subocluziv, colonoscopie, examen CT abdominal, rezecție chirurgicală

Abstract

The lipoma of the colon is a benign and rare tumor. Most lipomas are asymptomatic, their discovery being fortuitous. The diagnosis is usually easy by colonoscopy associated with biopsies. The abdominal CT scan also has its role in the diagnostic process and in the assessment of the tumoral extension. The treatment depends essentially on the clinical picture, on the size and location of the lipoma and involves endoscopic or surgical excision. We present the case of a 56 years old woman in which a random colonoscopic and than tomographic diagnosis of a sigmoidian lipoma was made 2 years ago when the patient presented with different symptoms, the submucosal lipoma being small sized at the time; the surgical treatment (sigmoidectomy including the tumor) was currently indicated by the sub-occlusive syndrome and haematochezia, due to the intraluminal proliferation of the tumor.

Key words: submucous lipoma, sub-occlusive syndrome, colonoscopy, abdominal CT scan, surgical resection

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Introduction

Colonic lipomas are rare, benign tumors, originating from the conjunctive tissue of the intestinal wall; there are few cases reported in the medical literature but they are the most frequent intramural non-malignant mesenchymal tumors of the gastro-intestinal tract and second in frequency after adenomatous polyps (not including hyperplastic polyps) among the benign colonic tumors. (1-4) Most of them are

asymptomatic, their discovery is fortuity due to randomly routine investigations (colonoscopy) for symptoms apparently related to other large intestine pathology (3,5) or they are found in a colon resection performed for other cause (6). Occlusion of the colon due to this kind of tumors is exceptional (1,7-11).

The etiology of colonic lipomas is most of the time uncertain. Some theories have been proposed, but none of them are satisfactory. Chronic irritation and inflammation have been blamed in forming some lipomas. Some authors consider that fatty tissue accumulates in a certain area due to underdevelopment of the arterial, venous and lymphatic circulation. Trauma can be, as well, an important factor (12).

Case report

This is the case of a 56 years old female patient, who was admitted in July 2013 in the Gastroenterology department for diffuse abdominal pain, haematochezia, flatulence and borborygmus.

Her medical history includes: family history of breast cancer with genetic transmission for which a bilateral mastectomy was performed, followed by breast reconstruction with silicon implants – the histopathological examination revealed a breast fibroadenoma too; grade I hepatic steatosis associated with dyslipidemia.

The patient was also admitted in the hospital in February 2011 for pain in the right upper quadrant and right flank, constipation, postprandial bloating, occasionally accompanied by food regurgitation. The upper endoscopy revealed antral gastritis associated with Helicobacter Pylori infection – which was treated; the screening colonoscopy showed a subepithelial mass in the descending colon, at 40 cm from the anus, approximately 3 cm in diameter, with a benign aspect, which did not obstruct the colonic lumen - 3 fragments from the overlying colonic mucosa were taken for biopsy (the histopathological examination revealed normal colonic epithelial cells) and also 2 small rectal hyperplastic polyps which were resected by colonoscopy. The subepithelial mass was also found at the abdomino-pelvic CT scan which described in the projection area of the sigmoid loop, intraparietally, an oval shaped, well differentiated mass, with negative density, of 3/2 cm in diameter, developed from the upper outer wall of the colon, without obstruction or dilatation of the overlying segment. At this point the patient being not symptomatic for this finding, refused an invasive approach for the sigmoidian wall tumor and choosed to treat only the Helicobacter Pylori gastritis and to stay in expectative. She didn't show for reevaluation in the next two years, and came only at the instalation of the symptomes described above.

Clinical examination at admission in July 2013: good general condition, conscious, cooperative, normal weight; clinically normal except for abdominal distension due to meteorism and diffuse palpatory abdominal pain, more intense in the left flank and left iliac fossa, absent bowel movement for feces, but present for gas.

The blood tests revealed inflamatory syndrome with

hiperfibrinogenemia and leucocytosis, hiposideremia without anemia, and high cholesterol levels.

The control colonoscopy performed showed a mass at 40 cm from the anus, with an extramucosal aspect, which obstructs the colonic lumen, ulcerated, mobile, with 4 cm in diameter.

The late post intravenous contrast and post contrast positive enema acquisition at abdomino-pelvic CT scan described: well shaped tumoral mass with lipomatous density occupying 90% of the sigmoidian lumen, near the jonction with the descending colon, with a slight circumferential thickening of the colonic wall (Fig. 1 A,B,C).

Given the sub-occlusive symptoms and the colonoscopy and CT scan results, the patient was transferred in the Surgery department for the appropriate treatment.

On July 24th, the patient was operated trough median laparotomy, and the intraoperative diagnose was stromal tumor of the sigmoid colon with secondary occlusive syndrome for which a sigmoidectomy was performed followed by a manual colo-rectal termino-terminal anastomosis (Fig. 2 A,B) The histopathological examination of the resected piece reveals a pedunculated tumoral mass formed by small, medium and large size adipocytes, covered by normal colonic mucosa (Fig. 3 A,B) There were no adiacent adenopathies and the resection margins had a preserved architecture. The histological aspect was suggestive for submucosal lipoma. The postoperative evolution was uncomplicated and the patient was discharged surgically cured.

Discussions

Lipomas can be found in all the components of the digestive tract. In 1757, Bauer described for the first time a lipoma in the gastro-intestinal tract (13,14). Submucous lipomas of the descending colon are relatively rare and there are only a few cases associated with large bowel obstruction (8,9,15,16). It has been demonstrated that tumors arising in the large intestine which do not originate from the colon and rectum mucus secreting cells are relatively rare. Almost all lipomas are submucous tumors which, usually, involve older persons and most of the revealing symptoms are determined by an occlusion, if there is one (10,11,15,17).

Colonic lipoma is the second most frequent benign tumor after adenomas. It has a reported incidence between 0,2-4,4% (4,7,13,16,18). It has a feminine predominance and it is usually discovered between 50-65 years of age.(4,13,19) Preferential localization is in the ascending colon (61% from the reported cases), then in the descending colon – 20,1%, in the transverse colon – 15,4% and in the rectum – 3,4% (9,20-23). Multiple lipomas have been reported in 10-20% of the cases, especially if a lipoma was discovered in the cecum (4,13,14,24). In our case, the patient was fit in the average age reported in the medical literature, and the tumor was present in the descending colon.

Only 6% of the lipomas have clinical manifestation, symptoms being related to size and localization of the tumor (25). Symptomatology is not specific: abdominal pain,

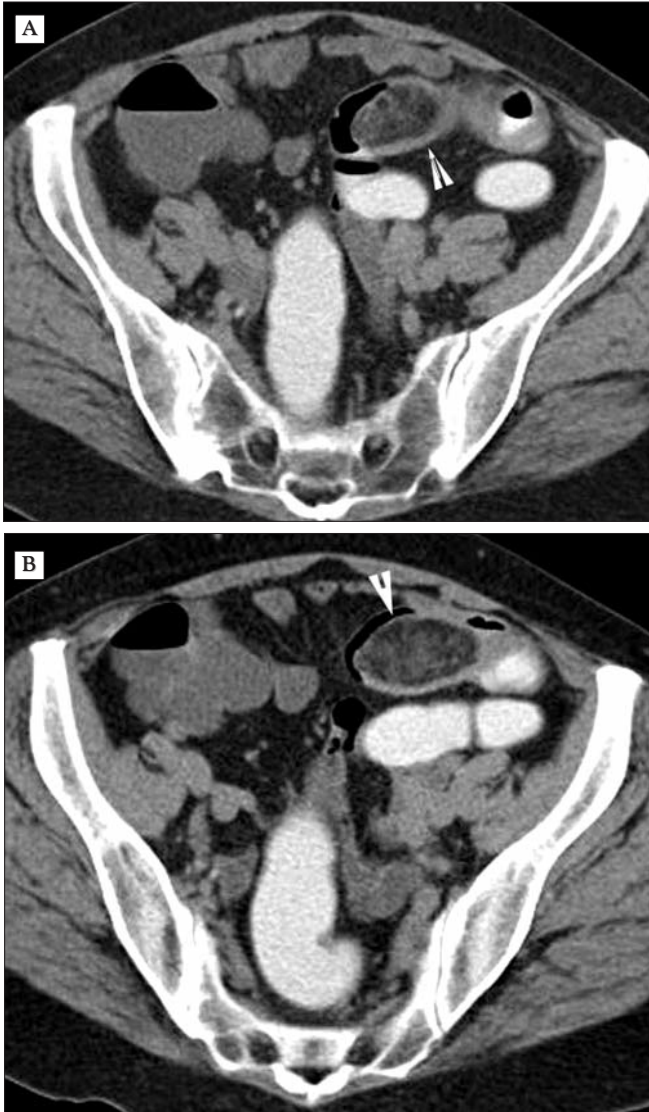


Figure 1 (A,B,C). Well shaped tumoral mass with lipomatous density occupying 90% of the sigmoidian lumen. CT Scan



Figure 2 (A,B). Submucous lipoma of the sigmoid colon

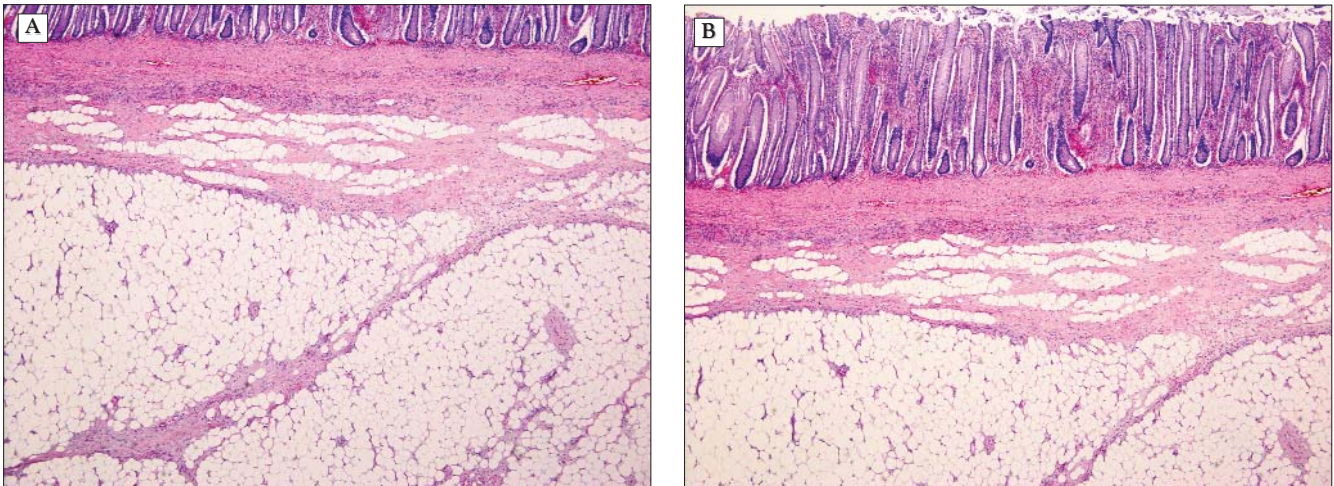


Figure 3 (A,B). Tumoral mass formed by small, medium and large size adipocytes, covered by normal colonic mucosa (HE 4X)

constipation or rectal hemorrhage. In most of the cases, the diagnosis is fortuity: during a colonoscopy or resection of the colon for other pathology, like in our patient in 2011, at the first colonoscopy which was a screening one (6,20,26).

The most difficult part in management of the lipoma is establishment of the right diagnostic preoperatively. There are 3 paraclinical elements which bring arguments in sustaining the diagnostic: colonoscopy permits visualizing the lipomatous lesion which interferes with the mucosa of the colon, the elasticity of the tumoral mass when taking the biopsy and observing the fatty cells and tissue on the microscopic fragment. The classic endoscopic features of a colonic lipoma are: tent-sign when grasping the overlying mucosa, cushion sign – flattening at the pression with de closed biopsy forceps and than restoracion of shape when the pression is off, and naked fat sign – extrusion of fat tissue after biopsy (1,3) – the first and second signs being present in our patient from the first colonoscopy. Endoscopic ultrasound can bring important information by visualizing the specific hyperechoic lesion originating in the submucosal layer, but is limited in cases with atypical appearance (25,27) and videocapsule endoscopy can also be used in some hemoragic but not obstructive tumors in which the classic endoscopy is not possible due to comorbidities (28). Irigography can bring arguments in favor of the diagnostic, but its role became secondary with the development of CT scan which can provide more precious information about the lipomatous lesion. Nowadays, abdominal CT scan is the most reliable diagnostic method concerning lipomas; revealing a regular, well delimited mass of greasy density. CT characteristics of lipomas include spherical or ovoid shape with smooth and well distinguished margins, regular density of the tumors. Potential limitations of CT scan concerning the diagnostic are: the size of lipomas and the partial volume (due to soft tissue or fecal materials which creates a bigger image on CT scan than the actual size) (20,29). There are CT images in the medical literature which created difficulties in establishing the diagnosis between a lipoma and

a malignant tumor (6,20,29). The differential diagnose includes other benignant or malignant mesenchimal tumors, such as: leiomioma, haematoma or haemangioma among benign tumors and gastrointestinal stromal tumors and a large variety of sarcomas for the malignant tumors (30-33). In the case presented, the diagnostic has been suspected preoperatively at colonoscopy and abdominal CT scan, and confirmed by the histological examination of the resected tumor.

From the histopathological point of view, lipomas can develop, generally, in every segment of the gastrointestinal tract and especially in the colon, but, like malignant tumors, they are more frequently situated in rectum, sigma or cecum. When they involve the ileocecal valve, there is rather a diffuse fatty accumulation than a lipoma (1,29,30). Referring to the position in the bowel wall layers, there are three types of colonic lipomas: submucous, subserous and mixed (submucous and subserous). Submucous lipomas are more frequent than subserous lipomas (4,19). They evolve in the bowel lumen and can cause significant symptoms. They can be found in different forms: rounded, sessile, multilobulated or covered by a fibrous conjunctive tissue capsule with ramifications in the tumor fatty mass conforming a polylobulated aspect. The tumors have the consistency of adipose, fatty tissue, with intense yellow color inside of it (1,24,30).

Microscopically, colonic lipomas have a dense accumulation of round, large, fatty cells with cytoplasm and nuclei at the edge of the cell wall. This kind of lipoma is found in the free connective tissue in submucosa and they have all characteristics of benign tumors. A fibrous capsule splits the tumor into different fatty lobules. The tumor is then separated from the serosa by a muscular layer (1,14,24).

Regarding the symptomatic lipoma, treatment is always the rule, two possibilities being possible: endoscopic excision or surgical resection. Some authors consider that the size of lipoma is the delimiting factor between the two approaches; endoscopic excision can be made to the maximum size limit of 2.5 cm (20,34), the risk of bleeding or perforation beyond this

limit is quite high concerning this approach. Surgical treatment remains the procedure of choice for symptomatic, big and/or complicated lipomas (9,19). Our patient didn't experience symptoms when the colonic lipoma was first diagnosed, the tumor being rather small and uncomplicated, so the expectative was the choice for her at that point, but the surgical intervention was mandatory two years later when the tumor grew and became symptomatic.

The surgical procedure used is obliged by the certain preoperative diagnosis, segmental colectomy with lipectomy in the resection piece being the gold standard in the absence of complications – this was the surgical procedure performed in our case too. The therapeutic choice when dealing with random discovery of a colonic lipoma without complications is less invasive, endoscopic excision is the therapeutic attitude (35). In the absence of diagnostic doubt and of symptoms, the most reasonable attitude is abstention from a therapeutic approach. Spontaneous expulsion of lipomas after auto-amputation has been reported in the medical literature (36). In other cases, with occlusion or intussusception of the lipoma, segmental resection of the tumor must be performed (7,10,15,18,20,23).

Our patient was being investigated for a colonic tumor suggestive for lipoma, initially asymptomatic, small sized (3/2 cm in 2011), discovered at a random check up by a colonoscopy, which had grown in the last two years (4 cm in 2013) and became symptomatic with the occlusion of descending colon at the last colonoscopy, with occlusive syndrome, rectal bleeding and constipation, symptoms that appeared in the last month.

Conclusion

The lipoma of the colon is a benign and rare tumor. Most lipomas are asymptomatic, their discovery being fortuitous. The diagnosis is usually easy by colonoscopy associated with biopsies. The abdominal CT scan also has its role in the diagnostic process and in the assesment of the tumoral extension. The treatment depends essentially on the clinical picture, on the size and location of the lipoma and involves endoscopic or surgical excision. The particularity of our case is actually the random colonoscopic and tomographic diagnosis of a colonic lipoma which was made 2 years ago when the patient presented with different symptoms, the submucosal lipoma being small sized at the time; the surgical treatment was currently indicated by the sub-occlusive syndrome and haematochezia, due to the intraluminal proliferation of the tumor.

References

1. Taylor BA, Wolff BG. Colonic lipomas. Report of two unusual cases and review of the Mayo clinic experience 1975-1985. *Dis Colon Rectum*. 1987 Nov;30(11):888-93.
2. Ongom PA, Wabinga H, Lukande RL. A "giant" intraluminal lipoma presenting with intussusceptions in an adult: a case report. *J Med Case Rep*. 2012;6(1):370.
3. Lazaraki G, Tragiannidis D, Xirou P, Nakos A, Pilpilidis I, Katsos I. Endoscopic resection of giant lipoma mimicking colonic neoplasm initially presenting with massive haemorrhage: a case report. *Cases J*. 2009;2:6462.
4. Rogy M., Mirza D., Berlakovich G., Winkelbauer F, Rauhs R. Submucous large-bowel lipomas--presentation and management. An 18-year study. *Eur J Surg*. 1991;157(1):51-5.
5. Tamura S, Yokoyama Y, Morita T, Tadakora T, Higashidani Y, Onishi S. "Giant" colon lipoma: what kind of findings are necessary for the indication of endoscopic resection? *Am J Gastroenterol*. 2001;96(6):1944-6.
6. Erkan N, Çaliskan C, Vardar E, Yilmaz C, Korkut M. Lipoma of the large intestine: a clinicopathological review of six cases. *Balkan Med J* 2010;27(1):6-10
7. Kastanakis M, Anyfantakis D, Symvoulakis E K, Katsougris N, Papadomichelakis A, Kokkinos I, et al. Cecal lipoma presenting as acute intestinal obstruction in an elderly woman: a case report. *Case Rep Surg*. 2013;2013:926514.
8. Mitra A, Agarwal PN, Singh R, Dutt K, Kumari M, Meena M. Giant intramural lipoma causing colonic intussusception with multiple jejuna intussusception – a case report. *Transl. Gastrointest Cancer* 2013;2(1):47-50.
9. Jiang L, Jiang L-S, Li F-Y, Ye H, Li N, Cheng N-S, et al. Giant submucosal lipoma located in the descending colon: A case report and review of the literature. *World J Gastroenterol*. 2007;13(42):5664-7.
10. Üstünsoy E, Türeyyen A, Topçu I, Basim H. Intestinal obstruction due to a giant lipoma of the Ascending colon: A case report. *Türk J Gastroenterol* 2003;14(4):280-1.
11. Mouaqit O, Hasnai H, Chbani L, Oussaden A, Maazaz1 K, Amart A, et al. Pedunculated lipoma causing colo-colonic intussusception: a rare case report. *BMC Surg*. 2013;13:51.
12. Figliolini F, Cutait D, De Oliveira M, Bastos E. Submucous subserous lipoma of the colon: report of a case. *Dis Colon Rectum*. 1964;7:309-14.
13. Ryan j, Martin JE, Pollock DJ. Fatty tumours of the large intestine: a clinicopathological review of 13 cases. *Br J Surg*. 1989;76(8):793-6.
14. Mondal SK, Sengupta S, Mallick MG, Ghosh N. Submucosal colonic lipoma presenting with acute abdomen due to intestinal obstruction. *Journal of Academy of Medical Sciences*, 2012; 2(2):79-81.
15. Furste W, Hadder T. Submucosal Lipoma of the ileocecal valve causing intussusception and obstruction. *Diseases of the Colon & Rectum*. 1958;1(4):262-5.
16. Djolai MA, Andrejić BM, Ivanov DDj. Lipoma of the sigmoid colon. *Vojnosanit Pregl*. 2013;70(3):319-21.
17. Janevska V, Spasevska L, Dukova1 B, Janevski V. Intestinal Submucosal Lipomas. *Maced J Med Sci. Surg*.1997;225(2):134-8
18. Atmatzidis S, Chatzimavroudis G, Patsas A, Papaziogas B, Kapoulas S, Kalaitzis S, et al. Pedunculated cecal lipoma causing colo-colonic intussusception: a rare case report. *Case Rep Surg*. 2012;2012:279213.
19. Ghidirim G, Mishin I, Gagauz E, Danch A, Russu S. Giant submucosal lipoma of the cecum: report of a case and review of literature. *Rom J Gastroenterol*. 2005;14(4):393-6.
20. Bentama K, Chourak M, Chemlal I, Benabbou M, Raiss M, Hrorra A, et al. Intestinal subocclusion due to colonic lipoma: a case report. *Pan Afr Med J*. 2011;10:22. Epub 2011 Oct 14.
21. Peters MB Jr, Obermeyer RJ, Ojeda HF, Knauer EM, Millie MP, Ertan A, et al. Laparoscopic management of colonic lipomas: a case report and review of the literature. *JLS*.

- 2005;9(3):342-4.
22. Katsinelos P, Chatzimavroudis G, Zavos C, Pilpilidis I, Lazaraki G, Papaziogas B, et al. Cecal lipoma with pseudo-malignant features: A case report and review of the literature. *World J Gastroenterol*. 2007;13(17):2510-3.
 23. Sun T, Song Y, Zhang X, YU M, Wang Z, XU H. Intussusception Induced by Transverse Colon Lipoma in a Young Male Patient - One Case Report SUN. *Clin Oncol Cancer Res*. 2011;8:247-9.
 24. Nowak M, Kabza A, Gluszek S. Intestinal obstruction due to a colonic lipoma. *Studia Medyczne Akademii Świętokrzyskiej*, 2007;5:11-7.
 25. Nallamothu G, Adler DG. Large colonic lipomas. *Gastroenterol Hepatol (N Y)*. 2011;7(7):490-2.
 26. Chuin-I L, Sou-Jhy Y, Ming-Hong T, Shao-Jiun C, Tze-Kai C. Lipoma of the Colorectum: Report of Three Cases. *J Soc Colon Rectal Surgeon*, 2009;20:44-8.
 27. Sheperd BD, Merchant N, Fasig J, Schwartz DA. Endoscopic ultrasound diagnosis of pelvic lipoma causing neurologic symptoms. *Dig Dis Sci*. 2006;51(8):1364-6. Epub 2006 Jul 26.
 28. Vere CC, Rogoveanu I, Streba CT, Popescu A, Ciocalteu A, Ciurea T. The role of capsule endoscopy in the detection of small bowel disease. *Chirurgia (Bucur)*. 2012;107(3):352-60.
 29. Popescu I, Andrei S. Gastrointestinal stromal tumors. *Chirurgia (Bucur)*. 2008;103(2):155-70.
 30. Andrei S, Andrei A, Tonea A, Andronesi D, Becheanu G, Dumbrava M, et al. Risk factors for malignant evolution of gastrointestinal stromal tumors. *Chirurgia (Bucur)*. 2007;102(6):641-50. Romanian
 31. Diaconescu MR, Diaconescu S. Mesenchymal (non-epithelial) "non-GIST" tumors of the digestive tract. *Chirurgia (Bucur)*. 2012;107(6):742-50.
 32. Andrei S, Andrei A, Tonea A, Andronesi D, Preda C, Herlea V, et al. Intestinal intussusception due to ileal gastrointestinal stromal tumor - a case report. *Chirurgia (Bucur)*. 2011;106(1):131-6. Romanian
 33. Burcos T, Bordea A, Barbulescu M, Mihai D, Welt L, Paizis E. lipom submucos – cauza rara de invaginatie intestinala la adult. *Chirurgia (Bucur)*. 2003;98(1):63-8.
 34. Geraci G, Pisello F, Arnone E, Sciuto A, Modica G, Sciume C. Endoscopic resection of a large colonic lipoma: case report and review of literature. *Case Rep Gastroenterol*. 2010;4(1):6-11.
 35. Waxman I, Saitoh Y, Raju GS, Watari J, Yokota K, Reeves AL, et al. High frequency probe EUS-assisted endoscopic mucosal resection: a therapeutic strategy for submucosal tumors of the GI tract. *Gastrointest Endosc*. 2002;55(1):44-9.
 36. Gupta AK, Mujoo V. Spontaneous autoamputation and expulsion of intestinal lipoma. *J Assoc Physicians India*. 2003;51:833.