

## Case Report

# Spontaneous expulsion of a giant colonic lipoma: a case report and literature review

Liang-Liang Ma<sup>1\*</sup>, Xi-Yi Chen<sup>1\*</sup>, Dong-Dong Huang<sup>2</sup>, Jun-Cheng<sup>1</sup>, Zuo-Qian Yu<sup>1</sup>, Di-Di Chen<sup>1</sup>, Zhen Yu<sup>1,2</sup>, Xiao-Dong Zhang<sup>1</sup>

<sup>1</sup>Department of Gastrointestinal Surgery, The First Affiliated Hospital, Wenzhou Medical University, Wenzhou 325000, Zhejiang, China; <sup>2</sup>Department of Gastrointestinal Surgery, Shanghai Tenth People's Hospital, Affiliated to Tongji University, Shanghai, China. \*Equal contributors.

Received September 28, 2017; Accepted February 8, 2018; Epub June 15, 2018; Published June 30, 2018

**Abstract:** The majority of colonic lipomas are asymptomatic and do not require any treatment. However, lipomas that are larger than 2 cm may cause symptoms such as bleeding, intussusceptions, or obstruction. A rather uncommon symptom is adult intussusceptions, caused by intestinal lipoma. Spontaneous expulsion of lipoma in the gastrointestinal tract along with the related pathological changes is, undoubtedly, an unusual symptom. However, the precise underlying mechanism has not been clearly defined. It presumptively happens due to ischemic necrosis of the lipomas by peristalsis-lead tension or torsion. In this paper, we describe a case of spontaneous expulsion of a large colonic lipoma that became symptomatic due to intussusception from the rectum without any intestinal perforation. In order to get a better understanding of its incidence, expulsion mechanism, diagnosis, therapy, and prognosis we further reviewed 13 cases of spontaneously expelled colonic lipoma, reported worldwide.

**Keywords:** Case report, lipoma, spontaneous expulsion, colon

## Introduction

Lipomas are usually non-epithelial benign fat tumors which may be located all over the gastrointestinal tract although they are most commonly diagnosed in the colon [1]. In general, symptoms are related to lipoma size. Small colonic lipomas display very few symptoms and are discovered accidentally during autopsy, colonoscopy, or surgery. While lipomas more than 2 cm in size have symptoms among 75% of the diagnosed patients [2], lesions larger than 4 cm may present with pain in the abdominal region, alterations in defecation routine, bleeding, intussusception, or defecation blocking [3]. Spontaneous expulsion of lipomas in the gastrointestinal tract is an extremely unusual symptom. In addition, the precise underlying mechanism of lipoma formation is still not clear. We herein describe a case of spontaneous expulsion of huge colonic lipoma in a 46-year-old patient along with a review of literature pertaining to this condition. This report could contribute towards the global understanding of the diagnosis and prognosis of colonic lipoma.

## Case report

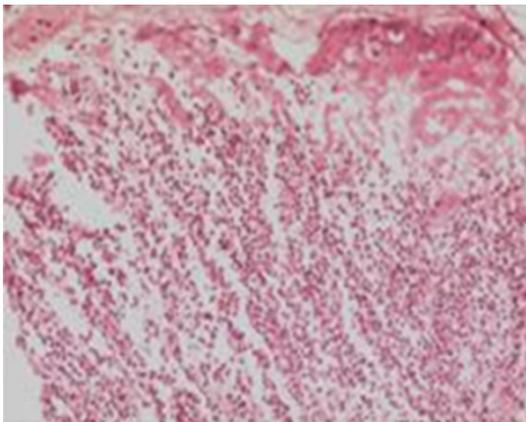
A 46-year-old Chinese patient was admitted to the Gastrointestinal Surgery department of The First Affiliated Hospital of Wenzhou Medical University on June 8, 2017, with a complaint of five-day old symptoms of abdominal pain and melena with changes in bowel habits, including diarrhea. He had a long history of Hepatitis B. Four years ago, he had undergone surgery for thyroid cancer. Vital signs were normal on admission. He had a height of 170 cm and weighed 67 kg. He was a non-smoker and had not been taking any medication. On physical examination, the abdomen was flat but a little tight. Neither the liver nor the spleen could be palpated and no other abdominal mass was palpable. No swelling of the superficial lymph nodes was observed.

Laboratory testing revealed that blood routine examination, blood biochemistry, and carcino-embryonic antigen levels were within normal range. Microbiological stool examinations yielded red blood cells. An abdominal enhanced computed tomography (CT) scan showed a

## Spontaneous expulsion of colonic lipoma



**Figure 1.** Colonoscopy reveals a great errabund mass removed from the colonic wall; hemorrhagic mucosa seen with the mucosal erosion.



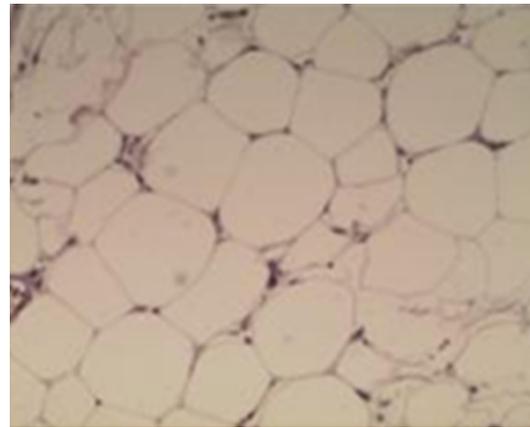
**Figure 2.** Microscopic image of the biopsy from colonoscopy shows colonic hyperplastic polyp with erosion (H&E stain,  $\times 100$ ).

large endo-luminal lesion around 3.6 cm in size, left of descending colon level with colonic intussusception. The lesion was morphologically smooth, which was highly suggestive of a lipoma. Colonoscopy showed a transferable mass of 5 cm in diameter about 45 cm from the anus, within the mucosal erosion, and covered with hemorrhagic mucosa (**Figure 1**). The biopsy obtained from colonoscopy demonstrated a colonic hyperplastic polyp with erosion (**Figure 2**).

For a definitive diagnosis, laparoscopic surgery was scheduled for June 13. However, during preoperative preparation, administration of a strong oral laxative resulted in expulsion of a mass from the rectum on defecation. The expelled mass (**Figure 3**) was light brown in



**Figure 3.** The expelled mass has a smooth surface, the color is light brown with a kidney-like shape.

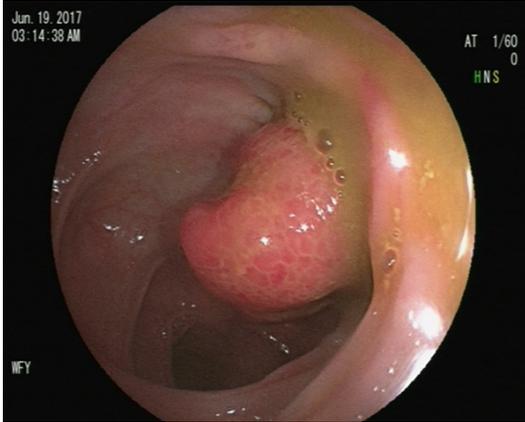


**Figure 4.** Microscopic image of the expelled mass reveals mature and natural adipocytes (H&E stain,  $\times 100$ ).

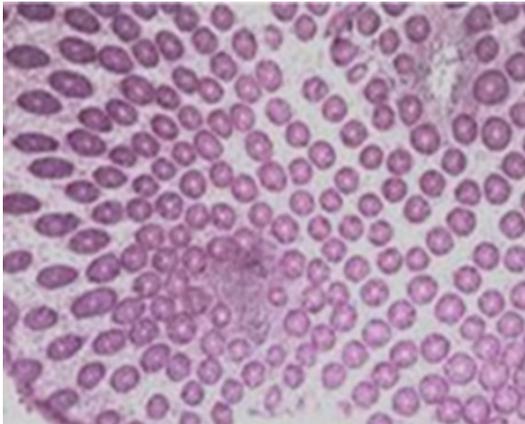
color, had a smooth surface, and measured 50 $\times$ 40 mm. The appearance was similar to lipoma. The mass was sent for histopathological examinations and the confirmed histopathological diagnosis was submucosal lipoma (**Figure 4**). A new colonoscopy revealed a mass of diameter of 2.5 cm, about 45 cm from the anus and covered with hemorrhagic mucosa (**Figure 5**). Biopsy from the new colonoscopy confirmed colonic hyperplastic polyp with erosion (**Figure 6**).

Following tumor expulsion, the symptoms eventually disappeared, the intussusception resolved spontaneously and the patient remained asymptomatic. No laparoscopic surgery was performed and the patient was discharged from hospital after 48 hours. The patient

## Spontaneous expulsion of colonic lipoma



**Figure 5.** The new colonoscopy reveals a mass narrower than earlier with a diameter of 2.5 cm; it is covered by hemorrhagic mucosa.



**Figure 6.** Microscopic image of the biopsy from a new colonoscopy shows colonic hyperplastic polyp with erosion (H&E stain,  $\times 100$ ).

agreed to receive an endoscope polypectomy after three months.

### Discussion

Lipomas are soft tissue tumors evolving from the hyperplasia of mature fat cells. Although the known morbidity of colonic lipoma is between 0.035% and 4.4%, it is the second most frequent benign tumor of the large intestine [4]. Colonic lipomas are most commonly located within the ascending colon followed by the descending colon, the transverse colon, and rarely the rectum [2, 5]. We, here, described a case of spontaneous expulsion of a huge colonic lipoma along with a review of 13 global cases of spontaneously expelled colonic lipoma (**Table 1**).

Colonic lipomas grow out of the submucosa in about 90% of cases with occasional extensions into the muscular propria [6]. Chronic irritation, inflammation, and fatty tissue accumulating in particular areas are the probable causes for formation of colonic lipomas [7, 8]. Occasionally, the colonic lipoma could separate from its root and eventually be expelled from the rectum. Spontaneous expulsion of colonic lipomas from the rectum have been rarely reported [9-15]. In addition, the spontaneous lipoma expulsion reported by Kang et al. [3] and Kouritas et al. [11] also occurred in the small intestine.

The mechanism behind this rare spontaneous expulsion of colonic lipomas is still unclear but several factors have been considered relevant. First, spontaneous expulsion mainly occurs in cases such as giant lipomas stalked with a narrow pedicel [11]. Besides, tension or torsion may lead to twisted lipomas, resulting in ischemic necrosis and amputation [3]. Pedunculated lipomas, in particular, can be distorted easily and are vulnerable to mechanical stress [9]. Second, when the mucosa ulcer above the lipoma reaches its maximum diameter, the lower covered mass bulges and ruptures into the cavity, which may be an explanation for this rare phenomenon [11]. Another possible reason for the lipoma resection could be former endoscopic removal [14, 16, 17] or lipoma intussusception [3, 18]. In this case, the patient was diagnosed with intussusception and the lipoma may have developed torsion during bowel peristalsis. Also, presence of severe diarrhea during preoperative bowel preparation could have contributed to this process. Colonoscopy revealed a diagnosed polyp tissue of 2.5 cm in diameter covered with hemorrhagic mucosa. Therefore, we speculate that the huge pedunculated lipoma could have undergone ischemic necrosis due to possible peristalsis torsion followed by autoamputation of this lipoma.

Most colonic lipomas are symptomless and are diagnosed accidentally during surgery or colonoscopy for other conditions [4]. The symptoms are usually correlated with lipoma size, especially when they increase to more than 2 cm. Pain in the abdominal region, alterations in defecation manner, and gastrointestinal hemorrhage are typically reported [4, 9]. The major symptom in the majority of the spontaneous lipoma expulsion cases is acute abdominal pain, usually flatulent in nature, and subse-

## Spontaneous expulsion of colonic lipoma

**Table 1.** Characteristics of reported cases of spontaneous expulsion of colonic lipoma

Authors	Age	Sex	Presentation	Diagnostic modality	Tumor location	Size (cm)	Treatment	Follow-up
Manheim et al. [23]	47	F	Abdominal pain hematochezia diarrhea	Barium enema	Sigmoideum	6×4	No	Well
Robertson et al. [19]	43	M	Abdominal pain hematochezia diarrhea	Colonoscopy	Sigmoideum	7×5	No	Well
Misra et al. [18]	32	M	Abdominal pain	Barium enema	Ascending colon	8×5	No	Unknown
Stebbing et al. [24]	55	F	Abdominal pain hematochezia	Barium enema	Descending colon	5×7	No	Well
Zhou et al. [15]	28	M	Abdominal pain hematochezia	Colonoscopy	Ascending colon	7.2×5.5	No	Unknown
Tzias et al. [13]	53	M	Abdominal pain hematochezia	Colonoscopy	Sigmoideum	6	Endoscopic polypectomy	Unknown
Sidani et al. [17]	45	M	Abdominal pain constipation	Colonoscopy	Right-side colonic	9×10	Alligator forceps	Well
Lazaraki et al. [14]	78	M	Abdominal pain	Colonoscopy	Sigmoideum	4×3	Endoscopic polypectomy	Well
Jeong et al. [16]	48	M	Abdominal pain	Colonoscopy	Sigmoideum	8	Snare polypectomy	Unknown
Kouritas et al. [11]	77	F	Abdominal pain melena	Colonoscopy	Unknown	Unknown	No	Unknown
Ishiyama et al. [12]	38	M	Abdominal pain melena	Colonoscopy Barium enema	Transverse colon	7.5×4.5	Electric snare	Well
Chahri et al. [10]	45	M	Abdominal pain diarrhea	CT	Descending colon	7×5	No	Unknown
Rocha et al. [9]	62	M	Abdominal pain constipation	CT	Transverse colon	7.5×5	No	Unknown
Present case	46	M	Abdominal pain hematochezia	Colonoscopy CT	Descending colon	5×4.5	No	Well

CT-Computed tomography.

## Spontaneous expulsion of colonic lipoma

quent few hematochezia [9, 11, 13, 16] that lessens after mass defecation. However, few patients experience heavy bleeding and perforations on spontaneous expulsion of lipoma [19]. Besides, patients with giant lipoma (> 4 cm) may develop impeding intestinal obstruction because the separated lipoma could block the colorectal tract and thus impede the stool channel [1, 20]. The patient in our case complained of abdominal distention, acute abdomen pain, and melena. However, those symptoms resolved spontaneously after self-amputation of the lipoma.

Currently, preoperative diagnosis of colonic lipoma can be challenging. Colonoscopy is an important means for diagnosis of colonic lipoma [11]. Raising of the mucous membrane against the mass with a surgical clamp ("tent sign"), breach of lipoma with a surgical clamp (the so-called "cushion sign"), or fat expulsion after biopsy ("naked fat sign") [12, 13] are methods used due to which lipoma surface inflammation, erosion, and ulcer are typical signs of lipoma often lost on colonoscopy. It is difficult to comprehend the characteristics of adipose tissue because of repeated erosion repair and thickening of the surface of the mucosa. In addition, Daniele et al. [7] have shown that the positive rate of diagnosis using diagnostic colonoscopy was 44%. In our case, the first-time biopsy on colonoscopy shows colonic hyperplastic polyp with erosion. The following biopsy obtained from the spontaneous tissue expulsion showed normal mature adipocytes. Therefore, application of barium examination, CT, MRI, and ultrasound examination of colonic lipoma are also important for early and accurate diagnosis [1, 7].

The treatment of colonic lipomas is related to the size and location of the lipoma, its possible neopathy, possible malignant grade, as well as the surgeon's decision on surgical or endoscopic intervention [21]. Endoscopic with snare electrocautery removal of colonic lipomas is recommended for lipomas less than 2 centimeters [7] while surgical removal appears to be the ideal remedy for large lipomas, particularly when tumors could not be preoperatively removed [4, 7, 22]. Several research studies have suggested that it is difficult to differentiate colon lipoma from colon carcinoma. The risk of misdiagnosis exists and, therefore, the

recommendation in doubtful cases is still removal of the tumor [1, 22]. Therefore, the resection of symptomatic or greater than 2 cm in diameter colonic lipomas is mandatory but if the diameter is lower than 2 cm tumor removal should be reserved only in cases with doubtful diagnosis [7].

According to the literature [9, 10, 13, 16], most symptoms in these cases subside after spontaneous lipoma expulsion and additional treatments are avoidable. Few self-mutilating lipomas are so huge that spontaneous expulsion becomes impossible. However, the huge movable masses can be removed in fragments with extensive application of polypectomy snare [16, 17]. Robertson et al. [19] reported a case of a 43 year old male patient developing perforation of the transverse colon wall subsequent to the patient passing a huge tumor, confirmed to be a lipoma. The patient received an extended right hemicolectomy and ileocolic anastomosis and made an uneventful recovery. Recurrence has not been documented, so far [11].

In our case, the patient received positive hemostatic treatment after the lipoma discharged spontaneously. The second colonoscopy revealed a narrower mass of a diameter of 2.5 cm, confirmed to be a tissue of polyps, and the patient agreed to receive an endoscopic polypectomy after three months.

### Conclusion

In spite of the fact that colonic lipomas have unusual symptoms, they should be taken into consideration for differential diagnosis of tumors of the large intestine. Surgical resection may be a feasible and safe therapy for most symptomatic lipomas. Occasionally, the colonic lipoma may separate from its root and be expelled from the rectum; most of these have a favorable prognosis. However, we recommend that surgeons perform re-colonoscopy inspection after expulsion and strengthen their awareness of hemorrhagic focal ulcerations and presence of residual tissue. These steps would help in the timely detection and intervention of hemorrhages and perforations and aid in regular follow up.

### Disclosure of conflict of interest

None.

## Spontaneous expulsion of colonic lipoma

**Address correspondence to:** Dr. Xiao-Dong Zhang, Department of Gastrointestinal Surgery, The First Affiliated Hospital of Wenzhou Medical University, Wenzhou 325000, Zhejiang, China. Tel: 86+1377-7763007, E-mail: amostory@126.com

### References

- [1] Nallamothu G and Adler DG. Large colonic lipomas. *Gastroenterol Hepatol (N Y)* 2011; 7: 490-492.
- [2] Kose E, Cipe G, Demirgan S and Oguz S. Giant colonic lipoma with prolapse through the rectum treated by external local excision: a case report. *Oncol Lett* 2014; 8: 1377-1379.
- [3] Kang B, Zhang Q, Shang D, Ni Q, Muhammad F, Hou L and Cui W. Resolution of intussusception after spontaneous expulsion of an ileal lipoma per rectum: a case report and literature review. *World J Surg Oncol* 2014; 12: 143.
- [4] Ghanem OM, Slater J, Singh P, Heitmilller RF and DiRocco JD. Pedunculated colonic lipoma prolapsing through the anus. *World J Clin Cases* 2015; 3: 457-461.
- [5] Andrei LS, Andrei AC, Usurelu DL, Puscasu LI, Dima C, Preda E, Lupescu I, Herlea V and Popescu I. Rare cause of intestinal obstruction-submucous lipoma of the sigmoid colon. *Chirurgia (Bucur)* 2014; 109: 142-147.
- [6] Boler DE, Baca B and Uras C. Laparoscopic resection of colonic lipomas: when and why? *Am J Case Rep* 2013; 14: 270-275.
- [7] Crocetti D, Sapienza P, Sterpetti AV, Paliotta A, A DEG, Pedulla G and de Toma G. Surgery for symptomatic colon lipoma: a systematic review of the literature. *Anticancer Res* 2014; 34: 6271-6276.
- [8] Tsiaousidou A, Chatzitheoklitos E, Hatzis I, Alatsakis M and Katsourakis A. Giant transmural lipoma of the sigmoid colon. *Hippokratia* 2012; 16: 278-279.
- [9] Rocha M, Pereira S and Salgado M. Spontaneous wxpulsion per rectum of colonic lipoma. *Clin Gastroenterol Hepatol* 2017; 15: A19.
- [10] Chahri N, Querol V, Ballesta E, Marti M and Garrigo J. Spontaneous expulsion of a large left-colon lipoma. *Rev Esp Enferm Dig* 2013; 105: 501-502.
- [11] Kouritas VK, Baloyiannis I, Koukoulis G, Mamaloudis I, Zacharoulis D and Efthimiou M. Spontaneous expulsion from rectum: a rare presentation of intestinal lipomas. *World J Emerg Surg* 2011; 6: 19.
- [12] Ishiyama S, Tashiro Y, Nagayasu K, Niwa K, Ono S, Sugimoto K, Hata M, Kamiyama H, Komiyama H, Takahashi M, Yaginuma Y, Kojima Y, Goto M, Tanaka M, Sengoku H, Okuzawa A, Tomiki Y and Sakamoto K. Spontaneous disappearance of a giant colonic lipoma after endoscopic biopsy. *Endoscopy* 2011; 43 Suppl 2 UCTN: E16.
- [13] Tzias V, Koutsoumpas A and Kamberoglou D. Endoscopic resection of giant colonic lipomas. *Annals of Gastroenterology* 2009; 21: 205.
- [14] Lazaraki G, Tzilves D, Tragiannidis D, Patakiouta F, Pilpilidis I, Gatopoulou A, Soufleris K and Katsos I. "Giant" lipoma of the sigmoid colon: spontaneous expulsion 12 days after failure of endoscopic resection. Report of a case and review of the literature. *Annals of Gastroenterology* 2008.
- [15] Zhou BF, Lu ZG and Li L. Spontaneous expulsion of a colonic lipoma. *Chin J Dig* 2001; 21: 598.
- [16] Jeong HK, Cho SB, Seo TJ, Lee KR, Lee WS, Kim HS and Joo YE. Autoamputation of a giant colonic lipoma. *Gut Liver* 2011; 5: 380-382.
- [17] Sidani SM, Tawil AN and Sidani MS. Extraction of a large self-amputated colonic lipoma: a case report. *Int J Surg* 2008; 6: 409-411.
- [18] Misra SP, Singh SK, Thorat VK, Gulati P, Malhotra V and Anand BS. Spontaneous expulsion per rectum of an ileal lipoma. *Postgrad Med J* 1988; 64: 718-719.
- [19] Robertson DA, Saweirs W and Low-Ber TS. Spontaneous expulsion of a large colonic tumor. *Br Med J (Clin Res Ed)* 1982; 285: 1084.
- [20] Bahadursingh AM, Robbins PL and Longo WE. Giant submucosal sigmoid colon lipoma. *Am J Surg* 2003; 186: 81-82.
- [21] Mouaqit O, Hasnai H, Chbani L, Oussaden A, Maazaz K, Amarti A and Taleb KA. Pedunculated lipoma causing colo-colonic intussusception: a rare case report. *BMC Surg* 2013; 13: 51.
- [22] Goyal V and Ungsunan P. Lipoma of the colon: should asymptomatic tumors be treated? *Am Surg* 2013; 79: E45-46.
- [23] Manheim SD and Peskin H. Spontaneous elimination of a lipoma from the sigmoid flexure. *Journal of the American Medical Association* 1942; 118: 1214-1215.
- [24] Stebbings WS and Staunton MD. Spontaneous expulsion of a large submucosal colonic lipoma. *J R Soc Med* 1989; 82: 624-625.