



## A Management Dilemma - Submucosal Colonic Lipoma (A Case Series)

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### Abstract

Submucosal lipoma of the colon is a rare tumour of the gastrointestinal tract with an incidence of 0.15% to 4.4%. It can be asymptomatic and usually is discovered on CT imaging or suspected during colonoscopy. Hence the diagnosis might be uncovered when being investigated for non-specific abdominal complaints. When the tumour is found ulcerated on colonoscopy, it can mimic carcinoma. They can become symptomatic by producing obstruction either by intussuscepting or mechanical blockage, and rarely, by producing lower GI bleeding. An algorithm needs to be developed for management of colonic lipoma as the patient ends up having a radical resection rather than conservative excision by being mistakenly interpreted as malignant lesions. We report a case series of four elderly patients with two presenting as intussusceptions and the other two presenting with non-specific abdominal pain, with malignancy suspected in three of them.

### Background

GI lipoma occurs in the submucosal plane [1] frequently. Colon is the common site accounting for 0.15% to 4.4% of all tumours of GI tract [2,3]. They are inconspicuous till the occurrence of complications [2]. They are symptomatic in 25% of patients. Large colonic lipoma manifest with symptoms due to complications [3]. CT is particularly useful to identify the nature of the submucosal lesion in colon as lipomatous due to its low attenuation values [4]. If found ulcerated on colonoscopy, they are mistaken for carcinoma [4]. Nine such cases have been described till 2003 [4]. Hence it is important to recognize the benign nature of lesion before committing the patient to radical surgery.

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### Case Presentation

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**Received Date:** 01 Dec 2018

**Accepted Date:** 17 Dec 2018

**Published Date:** 20 Dec 2018

#### Citation:

Sreevathsa MR, Nishnata K,  
Bhavyadeep K. A Management  
Dilemma - Submucosal Colonic Lipoma  
(A Case Series). *Clin Surg.* 2018; 3:  
2268.

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Four patients, three male and one female, with age ranging from 42 to 69 years were seen in a medical college affiliated hospital over 12 years, from 1<sup>st</sup> March 2006, all presented with symptoms of abdominal pain, duration ranging from one day to four months. The site of abdominal pain varied from lower abdomen to upper abdomen. One patient, a woman, had non-bilious vomiting. None complained of melena, altered bowel habits, or loss of weight. One patient developed feeling of abdominal distension followed by loose stools post colonoscopy. Three patients underwent X-ray abdomen in supine position and barium study of colon. All patients underwent colonoscopy, biopsy and triphasic CT scan abdomen. Three patients underwent colonic resection and one patient underwent colonoscopic polypectomy. Of the patients undergoing resection, two were laparoscopy assisted (Table 1). In a five-year period, starting from 1<sup>st</sup> January 2006, 8,532 colonoscopies were done in two major medical college affiliated hospitals and four asymptomatic submucosal lipomas were identified, accounting for an incidence of 0.004% in this select population (Figures 1-6).

### Results and Outcome

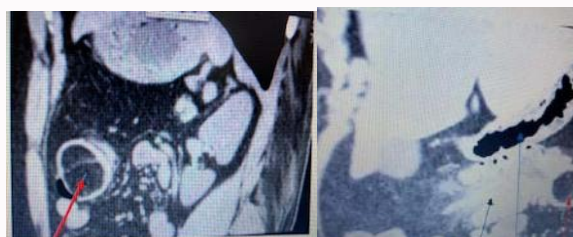
The male to female ratio was 3:1. The mean age was 54.75 years. All were symptomatic and one had acute symptoms. The abdominal pain was representative of colonic lesion in one patient only. In two patients, barium study and CT abdomen identified colo-colic intussusceptions with an intraluminal lead point strongly suggesting sub mucosal lipoma. Of the four patients undergoing CT scan, all were correctly diagnosed as sub mucosal lipoma. By colonoscopy, three were diagnosed as malignancy and one as lipoma. The three diagnosed as malignancy were ulcerated, tumorous lesions equal to or more than 3.5 cm in size, occluding more than 80% of colonic lumen. The histopathology was either misleading or non-contributory. Thus, CT scan had a very good diagnostic accuracy when compared to colonoscopy. Two patients provisionally diagnosed as carcinoma pre and intra-operatively underwent laparoscopy assisted radical right hemi colectomy. Of the two diagnosed

**Table 1:** Showing demographics, clinical features and relevant data of four cases.

Sl. no	Age (yrs)	Gender	Presentation	Duration	Provisional diagnosis on investigations			Intraoperative Diagnosis	Procedure	Lesion Size
					Bariumstudy	CT scan	Colonoscopy			
1	42	F	Pain abdomen, umbilical region Colicky & non bilious vomiting. Abdomen-vague mass Rt hypochondrium on 5 <sup>th</sup> day.	1-5 days	Colo – colic intussusception With a lead point	Possible lipoma	Malignancy? Ulcerated intra luminal tumour obstructing lumen, covered with greenish slough. HPE – dysplasia	Malignancy caecum	Lap. Assisted right hemicolectomy	5 cm x 4 cm
2	69	M	Dull aching pain Rt-hypochondrium loose stools and insignificant weight loss. Abdomen-Non distended. No mass.	4 months 2 yrs	Obstruction at hepatic flexure	Possible lipoma	Malignancy. With ulcerated nodular surface obstructing lumen. HPE: dysplasia	Malignancy hepatic flexure	Extended Right radical colectomy	6 cm x 4 cm
3	50	M	Lower abdominal pain, colicky & weight loss. No mass felt per abdomen. Abdominal distension and loose stools after colonoscopy	4 months	Colo-colic intussusception Lipoma as lead point	Sub mucosal lipoma	Nodular lumen occluding lesion. ? malignancy	Lipoma vs. malignancy	Lap assisted segmental resection.	3.5 cm
4	58	M	Upper abdominal pain. Non specific features.	1 month	Not done	Sub mucosal lipoma	Polypoid lipoma	Submucosal lipoma	1) Upper GI endoscopy-antral erosions 2) colonoscopic polypectomy.	2.5 cm



**Figure 1:** Barium enema showing “coil spring” appearance of intussuscepted colonic lipoma.



**Figure 3:** CT scan abdomen: Black arrow head indicates transverse colon, blue arrow head indicates stomach, red arrow indicates lipoma with characteristic absorption density.



**Figure 2:** CT scan abdomen showing sharply defined, fat attenuating lesion in the transverse colon as lead point of intussusception.



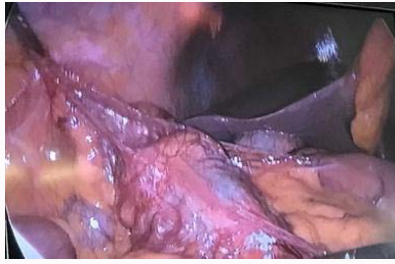
**Figure 4:** Colonoscopy picture of submucosal lipoma with nodular surface almost obliterating lumen.

as lipoma, one underwent laparoscopy assisted segmental resection, and the other colonoscopic polypectomy (Table 1). All were elective procedures. All are well on follow up. The site of the colonic lipomas was caecum in one patient and Trans verse colon in three, with one near the splenic flexure.

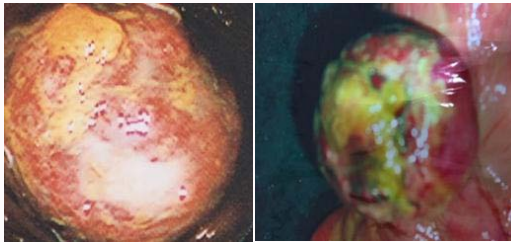
**Discussion**

Colonic lipomas are the most common benign tumours of the colon with the exception of adenomatous polyp [1,2,5]. They have

a low incidence and contribute to 4% of all benign lesions of the gastrointestinal tract [5]. Although they can occur at all sites in the GI tract, colon is the most common site followed by small bowel and stomach [1-3]. 90% of colonic lipomata occur in the sub mucosal plane [1] Majority (70%) occur in the ascending colon [1,4]. Common age at presentation is the 5<sup>th</sup> and 6<sup>th</sup> decade [1,2] which is the age of colonic cancer.



**Figure 5:** Laparoscopic picture of lipoma tattooed with Indian ink showing through the wall of transverse colon.



**Figure 6:** Resected specimens of colonic lipoma.  
a) Yellowish appearance of lesion  
b) Ulcerated surface covered with slough

Less than 25% of large sub mucosal lipomata are symptomatic. When symptomatic, nonspecific abdominal pain, intussusception or ulceration with bleeding is the common presentation [2-4,6-8]. On colonoscopy examination, sub mucosal lipomas can appear as a sessile or pedunculated polyps, easily indented by biopsy forceps only to regain its shape after the pressure is released (cushion sign) [5]. After endoscopic biopsy, fatty tissue may protrude through the biopsy site which is called the “naked-fat sign” [5,7]. However, if the lipoma is ulcerated and covered with exudates, it may mimic carcinoma [9,10].

Submucosal colonic lipoma can be diagnosed on CT scan as a sharply defined mass lesion with a low attenuation of between -40 to -120 Hounsfield units [6]. Endoscopic biopsy can be unhelpful if insufficient tissue is obtained or non-representative areas are sampled. As these tumours present in the elderly, despite the typical imaging findings, suspicion of malignancy leads to radical resection (conventional or laparoscopic assisted) [7,8,11-13].

Pedunculated lipomatous polyps of size less than 2 cm can be removed endoscopically, but larger polyps require resection as polypectomy can be technically challenging and could lead to colonic perforation [8,10]. A sub mucosal lipoma presenting as adult colonic intussusceptions makes diagnosis of benign lead point difficult as the incidence of malignant lead point is up to 65% in adult intussusceptions. Even though benign lead points like Inflammatory Bowel Disease, Meckel’s diverticulum, benign stromal tumours, lipoma, adenomatous polyps, and previous anastomosis have been described in adult intussusceptions; the question remains as to how accurately such a condition can be diagnosed [14]. CT scan has been described as the most sensitive diagnostic modality in differentiating benign from malignant sources of colo-colic intussusceptions [14]. In a recent publication, a multivariate analysis identified chronic symptoms of more than 14 days and colonic intussusception as independent predictors for malignancy, with CT having a diagnostic accuracy of 96.9% for recognizing a malignant lead point [15].

In this case series, the CT scan had a good diagnostic accuracy, but the high level of suspicion based on the gross appearance on colonoscopy in elderly age group lead to radical resection in two of them and segmental resection in one with the wisdom gained from previous experiences.

## Learning Points

Colonic sub mucosal lipomata are identified in the elderly patients when they become symptomatic and hence all attempts must be made to differentiate benign lesion from malignant to avoid radical surgery. There is also a need to establish a management algorithm for colonic polyps of larger than 2 cms to determine benignantly.

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