Case Reports in Gastroenterology

Case Rep Gastroenterol 2023;17:269–274
DOI: 10.1159/000533550
Received: February 7, 2023
Accepted: August 9, 2023
Published online: September 12, 2023

Single Case

An Asymptomatic Patient with Colonic Leiomyoma

Saad Alkhowaiter[a] Abdulmalik Alsheikh[b] Ammar Alotaibi[a]

[a]Gastroenterology, Internal Medicine, College of Medicine, King Saud University, Riyadh, Saudi Arabia; [b]Pathology and Laboratory Medicine, Security Forces Hospital, Riyadh, Saudi Arabia

Keywords
Colonic leiomyoma · Case study · Hot snare polypectomy · Gastrointestinal stromal tumor · Colorectal cancer

Abstract
Subepithelial lesions (SELs) originating from muscularis mucosae of the colon are very rare findings on endoscopy. Appropriate management of SELs involves making a correct diagnosis and estimating their malignant potential. In this case study, a 58-year-old Saudi man presented with a small, 8-mm sigmoid polyp during screening colonoscopy. The polyp was removed by hot snare polypectomy and sent to pathology laboratory. Report showed an unremarkable colonic mucosa and underlying well-circumscribed submucosal lesion composed of monotonous spindle cells. Immunohistochemical (IHC) analysis ruled out CD117-/DOG1-positive GIST and confirmed the lesion as leiomyomatous polyp. Colonic leiomyomas are usually benign and often asymptomatic and discovered during CRC screening procedures. Diagnosis is made on histology/IHC analysis since endoscopically they might be indistinguishable from other SELs. Conventional polypectomy is an appropriate treatment for small colonic leiomyoma and these benign lesions typically do not recur.

Introduction

Subepithelial lesions (SELs) of the gastrointestinal (GI) tract are described as masses, bulges, or impressions in the GI lumen that are covered in normal-appearing epithelium [1]. SELs represent a heterogeneous group of lesions – neoplastic SELs can vary from lipomas with

Correspondence to:
Saad Alkhowaiter, salkhowaiter123@gmail.com

Case Rep Gastroenterol 2023;17:269–274
DOI: 10.1159/000533550

no malignant potential to gastrointestinal stromal tumors (GISTs) that could metastasize [1]. SELs usually originate in the muscularis mucosa, submucosa, or muscularis propria [1]. Those originating from muscularis mucosae of the colon are likely colonic leiomyomatous polyps, or colonic leiomyoma [2, 3].

Colonic leiomyoma is considered very rare. The majority of colonic leiomyomas are small, asymptomatic, and discovered incidentally [1]. However, some cases of colonic leiomyoma are associated with symptoms such as abdominal pain, constipation, bleeding, or luminal obstruction and may be detectable as bulky abdominal masses on palpation [3]. Appropriate management of SELs involves making a correct diagnosis and estimating their malignant potential [1].

Because colonic leiomyoma is a very rare occurrence, it is important to report those cases that arise with the aim of increasing awareness among endoscopists and physicians. This case report highlights a middle-aged Saudi man who presented with colonic leiomyoma discovered during screening colonoscopy.

Case Presentation

A 58-year-old Saudi man presented with sigmoid polyp during screening colonoscopy (Pentax Medical using digital image enhanced endoscopy technology; "i-scan") at our tertiary hospital. A small, 8-mm polypoid lesion was noted in sigmoid colon (Fig. 1). The i-scan showed the polyp was subepithelial. Submucosal injection with normal saline and lifting indicated the polyp did not originate in deeper muscle layer. Further imaging using EUS/MRI/CT was not deemed necessary. The polyp was removed by hot snare polypectomy with no immediate complications. Pathology study showed an unremarkable colonic mucosa with underlying well-circumscribed submucosal lesion (Fig. 2a) formed by intersecting fascicles of monotonous spindle cells with eosinophilic cytoplasm and indistinct borders (Fig. 2b). There was no evidence of cytological atypia, mitoses, or necrosis. Immunohistochemical analysis of the excised tumor revealed the lesional cells were strongly positive for desmin (Fig. 3a) and negative for CD117, DOG1, and CD34 (Fig. 3b–d). The patient returned to clinic for routine follow-up visit 2 weeks post-polypectomy and was observed doing well with no further complaints related to the procedure.

Discussion

Colonic leiomyomas should be considered in the differential diagnosis when a polyp is found during routine endoscopic evaluations [4]. Most GI polyps are epithelial in origin [5]. On the other hand, benign proliferations of nonepithelial cells such as underlying smooth muscle layers are known as leiomyomas; these proliferations can occur in the colon and are typically found incidentally [3].

Colonic leiomyomas are very rare, accounting for only 3% GI smooth muscle tumors, and usually located in the descending or sigmoid colon [3–6]. However, polypoid leiomyomas in the colon and rectum are increasingly detected during colonoscopy [7].

Affecting mainly men aged over 50 years, colonic leiomyomas are usually benign and often asymptomatic [4]. They may present in asymptomatic individuals on screening but also can have accompanying symptoms including bleeding, abdominal pain, and intestinal obstruction [4]. Endoscopically, leiomyomas can appear as pedunculated or intramural polyps. They arise from the muscularis mucosae/propria or the vascular smooth muscle

Case Rep Gastroenterol 2023;17:269–274
DOI: 10.1159/000533550

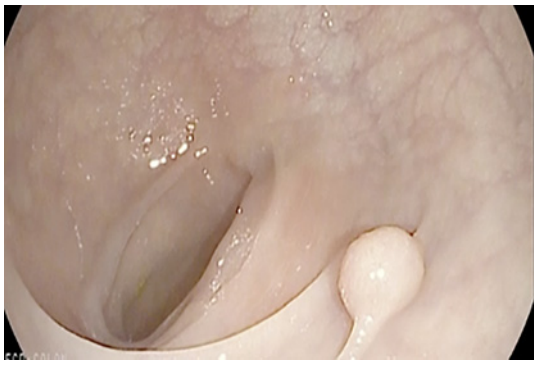

Fig. 1. Polypoid lesion noted in sigmoid colon of a 58-year-old Saudi man during screening colonoscopy. The polyp was removed by hot snare polypectomy with no immediate complications and subjected to laboratory analysis.

and are subepithelial. Diagnosis is made on histology since endoscopically they might be indistinguishable from other SELs. Histologically, leiomyomas stain negative for CD117 and CD34 and positive for desmin and smooth muscle actin [8]. They also stain negative for DOG1, a sensitive marker for GIST with low CD117 expression [9].

The classic study that first described a large series of patients with tumors of the colonic and rectal muscularis mucosae was performed by Miettinen and colleagues [10]. In that study of 88 resected cases, the lesions were typically small (<20 mm) and located predominantly in the rectum and sigmoid (72%). All tumors were composed of well-differentiated, eosinophilic smooth muscle cells that were seen immediately beneath the mucosa. The lesional cells were uniformly positive for smooth muscle actin and desmin and negative for CD34, CD117, and S100 protein. No GISTs were identified among the sample. None of the patients had morbidity related to the tumor [10]. These authors concluded leiomyomas of the colorectal muscularis mucosae are clinically harmless and not related to CD117-positive GISTs [10].

Colorectal cancer (CRC) screening and endoscopic removal of colorectal polyps can reduce the incidence and mortality of CRC [11–13]. Approximately one-third CRCs arise from so-called serrated lesions, a heterogeneous group of lesions that includes serrated adenomas and hyperplastic polyps [12]. Hyperplastic polyps are very common, small (<5 mm) non-dysplastic growths in the left colon (sigmoid colon or rectum) [12]. These tumors can present as pedunculated intramural or intraluminal polyps and have no endoscopic features to differentiate between colonic leiomyoma and epithelial polyps (adenomas) [3, 4, 6]. Endoscopic snare polypectomy may successfully remove the entire tumor in most cases [4], including the present patient. After complete resection, colonic leiomyoma does not recur [3, 7, 14].

Large polyps have the potential of harboring malignancy and a higher risk of complications with resection. Careful assessment of each lesion and meticulous resection using the appropriate tools and techniques are essential requirements [11]. Large colon polyps manifest as either polypoid or nonpolypoid (flat) lesions. Polypoid lesions, especially those with pedicles, should be removed with snare resection, whereas flat lesions may require the use of endoscopic mucosal resection or endoscopic submucosal dissection techniques [11, 13].

Choi and coworkers [7] evaluated the efficacy and clinical outcomes of endoscopic removal for colorectal polypoid leiomyoma. Data were retrospectively collected from 22 patients with polypoid leiomyoma arising from the muscularis mucosae in the colon and rectum who underwent endoscopic removal at single-referral GI endoscopy unit. Most polypoid leiomyomas were small, asymptomatic lesions less than 1 cm and located predominantly in the left colon. Ten leiomyomas were removed using cold biopsy forceps, and 12 were resected by conventional polypectomy or endoscopic mucosal resection.

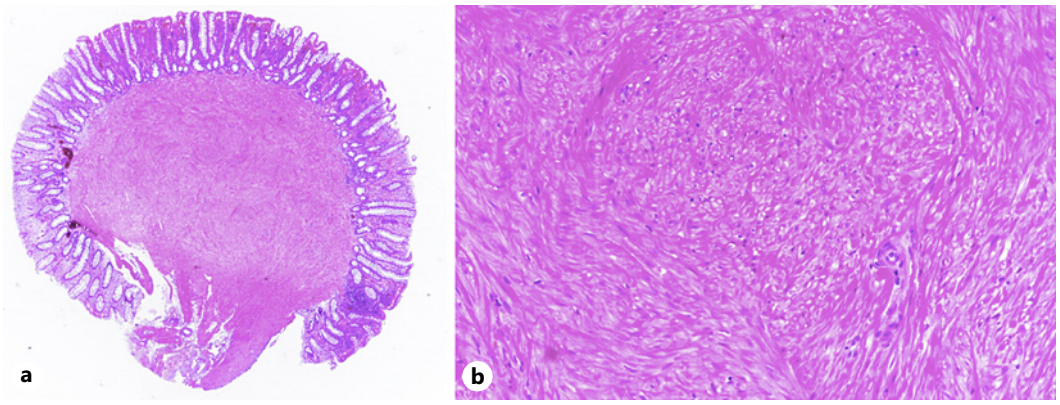

Fig. 2. **a** Tissue section showing unremarkable colonic mucosa with underlying well-circumscribed submucosal lesion. **b** The lesion comprised intersecting fascicles of monotonous spindle cells with eosinophilic cytoplasm and indistinct borders.

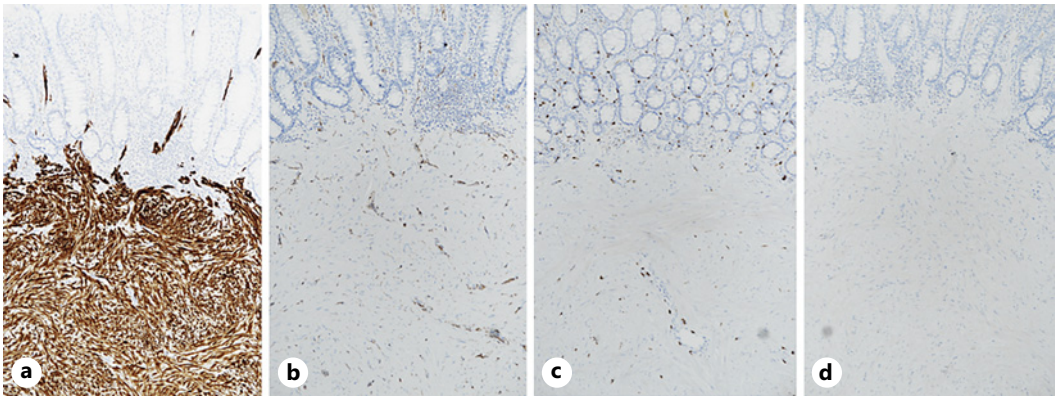

Fig. 3. IHC analysis of the excised tumor. Lesional cells were strongly positive for the smooth muscle cell marker desmin (**a**) whereas they were negative for GIST markers CD117 (**b**), DOG1 (**c**), and CD34 (**d**).

There were no complications, such as bleeding or perforation. No local remnant lesions were found in 19 patients who underwent at least one follow-up colonoscopy [7]. Likewise, Siddiqui's group [5] assessed 4 cases of leiomyoma (three men, one woman, age 52–68 years) documented in a single-center study. All polyps were located in descending or sigmoid colon. The lesions were endoscopically removed using different modalities (two hot snare and one each biopsy forceps and cold snare) [5].

Conclusions

Colonic leiomyoma polyps are rare growths formed by cells deriving from the sub-epithelial smooth muscle wall that may protrude into the gut lumen. Snare polypectomy with complete removal and follow-up is an adequate treatment for small colonic leiomyoma polyps. According to several reports, fully resected colonic leiomyomas do not recur. The CARE Checklist has been completed by the authors for this case report, attached as online supplementary material at https://doi.org/10.1159/000533550.

Acknowledgments

The authors thank the patient who kindly consented to this case report.

Statement of Ethics

Ethical approval is not required for this study in accordance with local/national guidelines. Written informed consent was obtained from the patient for publication of the medical case and any accompanying images.

Conflict of Interest Statement

The authors have no conflicts of interest to declare.

Funding Sources

This article was written without any funding support in the form of grants.

Author Contributions

Saad Alkhowaiter was involved in the conception and drafting of the case report. Abdulmalik Alsheikh and Ammar Alotaibi were involved in the drafting of the case report. All authors have critically reviewed and approved the final draft and are responsible for the content and similarity index of the manuscript.

Data Availability Statement

All data generated or analyzed during this study are included in this article. Further inquiries can be directed to the corresponding author.

References

1 Sharzehi K, Sethi A, Savides T. AGA clinical practice update on management of subepithelial lesions encountered during routine endoscopy: expert review. Clin Gastroenterol Hepatol. 2022;20(11):2435–43.e4.
2 Hirasaki S, Suwaki K, Tada S, Goji T. Pedunculated leiomyomatous polyp (pedunculated leiomyoma) of the transverse colon. Intern Med. 2010;49(22):2519–20.
3 Pellegrini JR, Russe JR, Munshi R, Smoller R, Khan N. Leiomyoma in the transverse colon with resection. Cureus. 2021;13(6):e15535.
4 Forlemu AN, Chuang KY. Sigmoid leiomyoma: an uncommon occurrence. Cureus. 2020;12(4):e7567.
5 Siddiqui U, Ihimoyan A, Carvajal S, Dev A, Balar B. Case series of an uncommon colon polyp: leiomyoma. Am J Gastroenterol. 2012;107(S204):S204. Abstract 491.
6 Chow WH, Kwan WK, Ng WF. Endoscopic removal of leiomyoma of the colon. Hong Kong Med J. 1997;3:325–7.
7 Choi HH, Cho YS, Choi SK, Kim HK, Kim SS, Chae HS, et al. Clinical outcomes of endoscopic removal in patients with colorectal polypoid leiomyomas. Korean J Gastroenterol. 2016;68(4):179–85.
8 Standards of Practice Committee, Faulx AL, Kothari S, Acosta RD, Agrawal D, Bruining DH, et al. The role of endoscopy in subepithelial lesions of the GI tract. Gastrointest Endosc. 2017;85(6):1117–32.
9 Hirota S. Differential diagnosis of gastrointestinal stromal tumor by histopathology and immunohistochemistry. Transl Gastroenterol Hepatol. 2018;3:27.

Case Rep Gastroenterol 2023;17:269–274
DOI: 10.1159/000533550

10 Miettinen M, Sarlomo-Rikala M, Sobin LH. Mesenchymal tumors of muscularis mucosae of colon and rectum are benign leiomyomas that should be separated from gastrointestinal stromal tumors: a clinicopathologic and immunohistochemical study of eighty-eight cases. Mod Pathol. 2001;14(10):950–6.
11 Thirumurthi S, Raju GS. How to deal with large colorectal polyps: snare, endoscopic mucosal resection, and endoscopic submucosal dissaection; resect or refer? Curr Opin Gastroenterol. 2016;32(1):26–31.
12 Ferlitsch M, Moss A, Hassan C, Bhandari P, Dumonceau JM, Paspatis G, et al. Colorectal polypectomy and endoscopic mucosal resection (EMR): European society of gastrointestinal endoscopy (ESGE) clinical guideline. Endoscopy. 2017;49(3):270–97.
13 Dumoulin FL, Hildenbrand R. Endoscopic resection techniques for colorectal neoplasia: current developments. World J Gastroenterol. 2019;25(3):300–7.
14 MacKenzie DA, McDonald JR, Waugh JM. Leiomyoma and leiomyosarcoma of the colon. Ann Surg. 1954;139(1):67–75.