

Leiomyoma of the Sigmoid Colon Causing Sigmoid Intussusception: A Case Report

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ABSTRACT

Colonic Leiomyomas are rare benign tumors and constitute 3% of all the GI Leiomyomas and constitute 1% of all GI neoplasms. They are the second most common mesenchymal polyp found in the colon. They are most commonly found in the distal colon and rectum. The classic histologic appearance of colonic leiomyomas are well-circumscribed lesions that arise from the muscularis mucosae and occupy the submucosa. These tumors are usually benign and asymptomatic and if symptomatic they present with abdominal pain, intestinal obstruction, perforation or hemorrhage. Appropriate management of Subepithelial lesions involves making a correct diagnosis and estimating their malignant potential. We describe the case of 16-year-old female who presented with complaints of abdominal pain and passage of stools after every meal. After relevant investigations, i.e, CECT Abdomen-intussusception sigmo-sigmoid colon with mass was diagnosed. Sigmoid colon with mass was removed and sent for histopathology. Using histology and immunohistochemistry it was diagnosed as leiomyoma.

This case highlights the limitations of diagnosing a mass/ polyp only on clinical and radiological findings and also proves that leiomyomas can have various presentations such as mass in colon, sessile or pedunculated colonic polyps.

Keywords: Leiomyoma, Sigmoid colon, Gastrointestinal stromal tumor (GIST), Colonic polyp.

INTRODUCTION

Most gastrointestinal (GI) polyps are epithelial in origin. Some, however, are inflammatory, hamartomatous or nonepithelial mostly mesenchymal in origin and occur most commonly in esophagus. Colorectal region is quite uncommon for mesenchymal tumours and if it occurs, they are seen particularly in the distal sigmoid colon and rectum. Most common mesenchymal polyp in the colon is lipoma followed by leiomyoma. Only 3% of all GI leiomyomas are found in the colon and rectum and constitute 1% of all GI neoplasms.^{1,2,3}. Leiomyomas often originate

either from the muscularis mucosae or the proper muscle itself. It frequently occurs after the age of 50 years, with male predominance of 2.4 :1.^{5,3}

Patients are usually asymptomatic and incidentally diagnosed during routine endoscopic and radiological evaluations but if symptomatic they may present with abdominal pain, constipation, hemorrhage, and intestinal obstruction and may be detectable as bulky abdominal masses on palpation^{2,4}.

Colonic Leiomyomas can present as sessile polyps, pedunculated polyps or as adenomas.⁵ Colonoscopy, Radiologic imaging such as

computed tomography (CT) with colonography, barium enemas, and magnetic resonance imaging (MRI) can be useful diagnostic tools but histology is must for confirmation.⁶ Colonic leiomyomas on histology classically present as well-circumscribed lesions that arise from the muscularis mucosae and occupy the submucosa.³ Treatment includes complete removal, and recurrences are extremely rare.⁶

CASE PRESENTATION

We present a case of 16-year-old female who first presented in pediatric opd with complaints of pain abdomen, not gaining weight and passage of stools after every meal since 2 year. She was taking medications for the same on OPD basis but no relief in symptoms was observed. Later, she presented to Surgery OPD with same complaints but increased abdominal pain in the epigastric region. On history it was found that the patient had abdominal pain since 2 years which was insidious in onset, constant in nature, present in epigastric region associated with retrosternal burning, non-radiating and slightly relieved after taking medication. She also had complaints of passage of stool after every meal. She also had history of significant weight loss. There was no history of vomiting, blood in stool, fever, night sweats or long term cough. On palpation(abdomen):a lump of approximately 4×4 cm was felt in the left iliac Fossa and diagnosis of intussusception was made. Further relevant investigations were done. Routine investigations were in normal ranges. On CT Scan: Intussusception involving sigmoid loops with intussusceptum being distal most part showing focal intraluminal enhancing mass lesion measuring

39.5×52×54.2 mm (AP×TC×CC) and intussusceptient being proximal sigmoid. Final impression of large bowel Intussusception sigmo-sigmoid with leading point being an enhancing mass. Differential diagnosis provided for mass included -? Neuroendocrine tumor, Gastrointestinal-stromal tumor (GIST)? lymphoma. Exploratory laprotomy with Resection of mass and colocolic side to side anastomosis was performed and a gut segment sigmoid colon with mass was sent for histopathology. A gut segment measuring 12cm was received in the Pathology department. A pedunculated polypoidal mass measuring 5×4 cm is identified obscuring the lumen towards the larger cut end attached 3 cm from larger cut end. Tumor was 0.5 cm away from outer circumferential margin. On serial sectioning of mass homogeneous grey white areas were identified. On microscopy the mass/tumor showed features of benign mesenchymal tumor comprising of well-differentiated smooth muscle cells with characteristic spindle shaped cells, elongated blunt-ended nuclei (“cigar-shaped”) and abundant eosinophilic cytoplasm, overlying mucosa was unremarkable. On immunohistochemistry, tumor was positive for Vimentin, Desmin and SMA. CD 117 and DOG 1 were negative ruling out Gastrointestinal stromal tumor and hence with the help immunohistochemistry diagnosis of leiomyoma was made. Since leiomyomas show rare occurrence in colon and hence only clinically diagnosis is not enough and so histopathology co-relation should be done in every case as it provides accurate diagnosis to treating physicians which ultimately improves the quality of treatment.

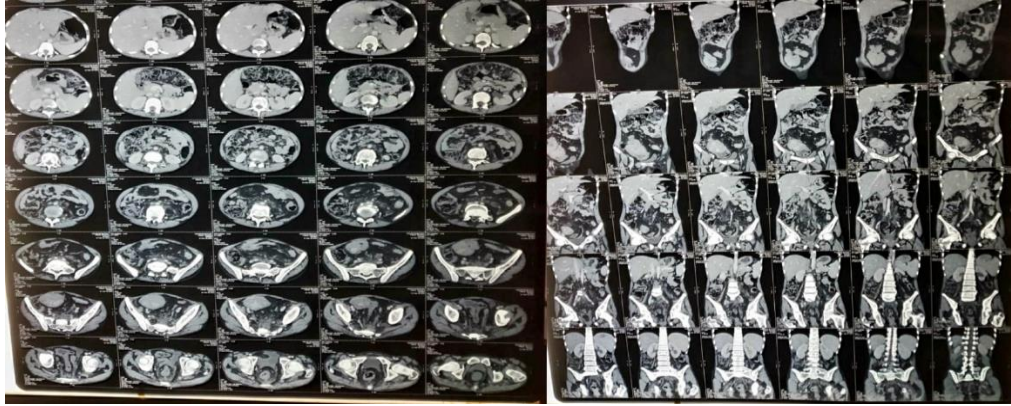


Fig.1: Transverse and lateral view on CECT Abdomen revealing sigmo-sigmoid colon intussusception with enhancing mass lesion measuring 39.5×52×54.2 mm (AP×TC×CC).

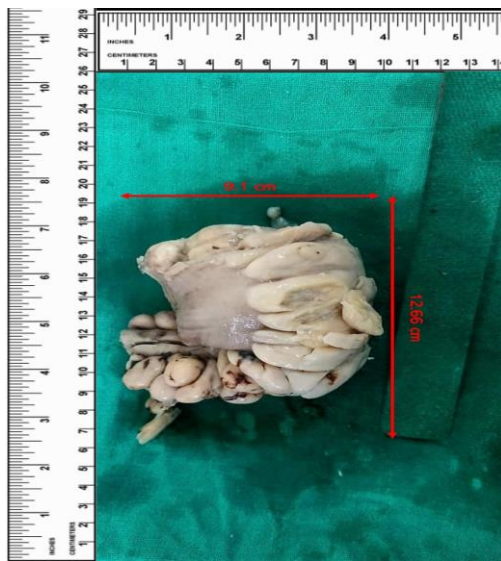


Fig 2: Gross image of specimen showing Sigmoid colon intussusception measuring 12 cm in length with intraluminal growth.



Fig 3: Specimen showing Intraluminal pedunculated growth measuring 5×4 cm

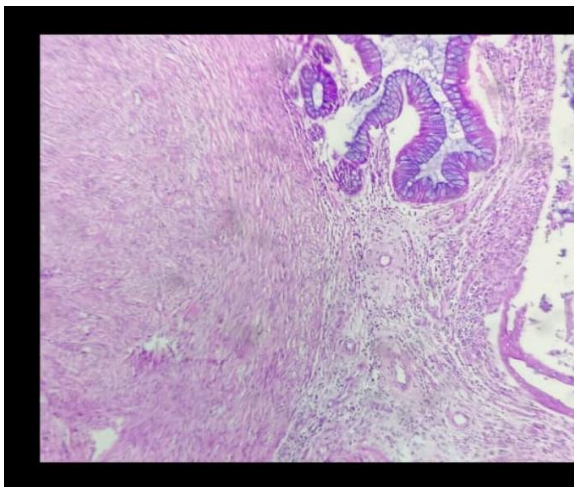


Fig 4 : 100x : H/E section revealing leiomyoma -spindle shaped cells, elongated blunt-ended nuclei and abundant eosinophilic cytoplasm.

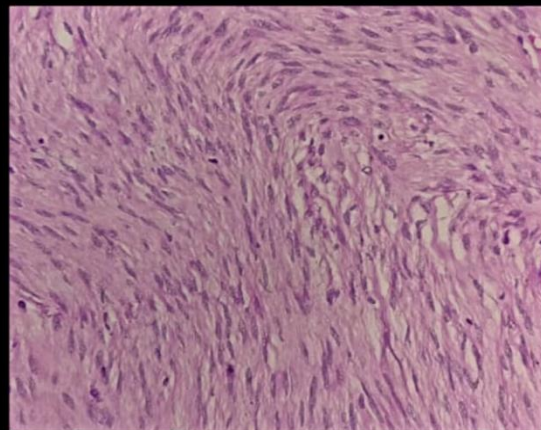


Fig 5 : 400x : H/E section showing leiomyoma-

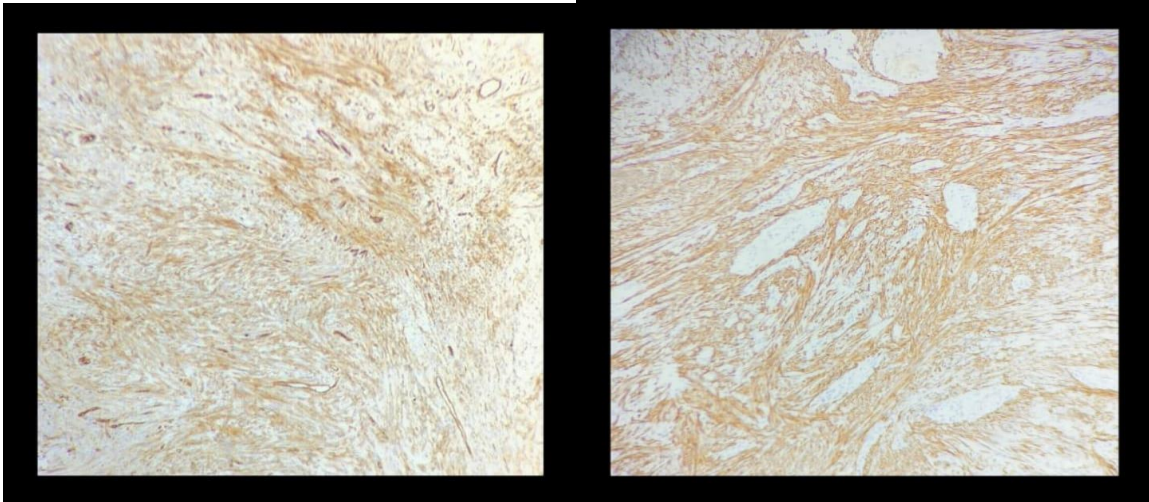


Fig 6 : 100x : Vimentin showing cytoplasmic Positivity.

Fig 7 : 100x : Desmin showing cytoplasmic Positivity.

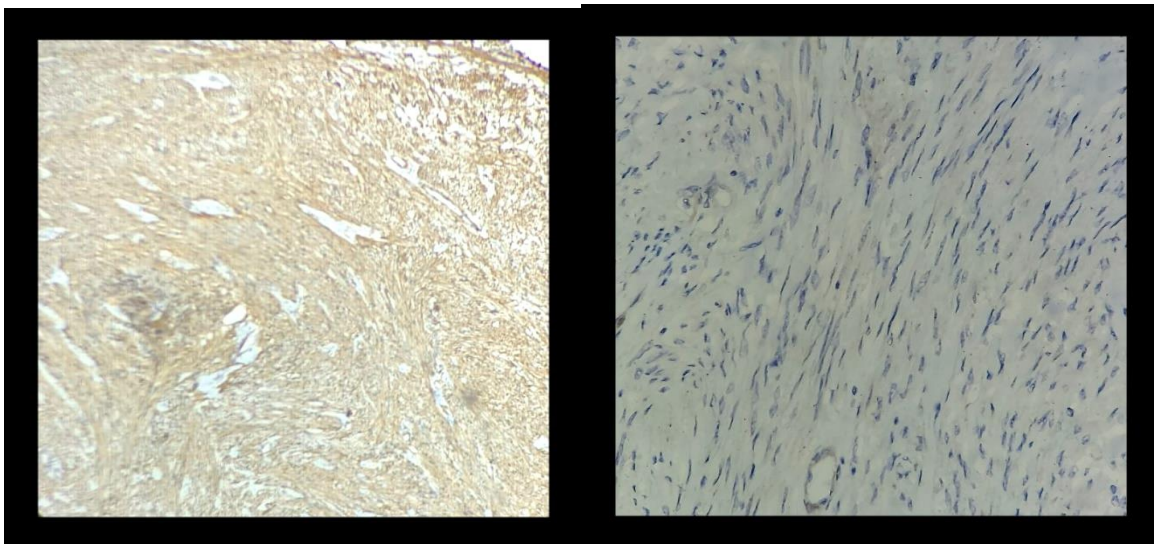


Fig 8: 100x : SMA showing cytoplasmic positivity

Fig 9 : 400x : Tumor is essentially negative for tumor marker DOG-1

DISCUSSION

Colonic leiomyomas are rare, and the most common segments of colon affected are descending and sigmoid colon.²

Some individuals, the leiomyomas, are asymptomatic and incidentally diagnosed on screening tests like endoscopy and in some individuals, they present with symptoms like bleeding, abdominal pain and intestinal obstruction. Endoscopically leiomyomas can appear as pedunculated or intramural.¹ Apart from endoscopy/colonoscopy, Computed tomography (CT) and Magnetic Resonance

Imaging (MRI) can also be helpful in diagnosis but ultimate diagnosis is made on histopathology.⁶

Colonic leiomyomas on histology classically present as well-circumscribed lesions that arise from the muscularis mucosae and occupy the submucosa.³ On immunohistochemistry, they are positive for smooth muscle tumor markers like Desmin, Vimentin, and SMA, negative for CD 117 and DOG-1.

Colonic leiomyomas should be differentiated from other mesenchymal tumors which include ganglioneuroma (GN), perineurioma,

and Schwann cell hamartoma. Inflammatory fibroid polyp (IFP) and gastrointestinal stromal tumor (GIST) but they are more commonly in the stomach or small intestine.

Gastrointestinal ganglioneuroma (GN) are small mucosal-based polyps that are incidentally found during colonoscopy, most commonly in the colon and rectum. Mucosal perineuriomas and Mucosal Schwann cell Hamartomas are small sessile polyps (several millimeters) mainly seen in the sigmoid colon and rectum. Gastrointestinal stromal tumor (GIST) and Inflammatory fibroid polyps (IFP) are rare in the colon. GIST arise from the interstitial cells of Cajal and stain positive for tumor markers like DOG 1 and CD 117. Gastrointestinal ganglioneuroma (GN) are ill-defined lesions composed of spindle cells and ganglion cells that displace the colonic crypts. Mucosal perineuriomas are poorly circumscribed lesions composed of short bland spindle cells arranged in a whirling pattern around crypts. Mucosal Schwann cell hamartomas are composed of spindle cells with eosinophilic cytoplasm and elongated, wavy nuclei, and they entrap colonic crypts involving the lamina propria.

Inflammatory fibroid polyp is characterized by an infiltrative proliferation of spindle and stellate cells in a loose fibromyxoid stroma with increased inflammation, particularly eosinophils.³

A study performed by Alkhowaiter et al. also showed that colonic leiomyomas are rare and are usually harmless and should be treated by conventional polypectomy. Their study also showed similar results on immunohistochemistry analysis like ours, i.e., Desmin and SMA were positive and CD 117 and DOG-1 were Negative.

Treatment includes complete removal, and recurrences are extremely rare. Endoscopic snare polypectomy is useful for small polyps, but surgical resection with wide margins is advised for large polyps as they hold malignant potential.⁶

CONCLUSION

Colonic leiomyoma polyps are rare growths that may protrude into the gut lumen and are formed by cells deriving from the subepithelial smooth muscle wall. Diagnosing colonic leiomyomas via endoscopy alone can be challenging as they are often misdiagnosed as adenomatous polyps and hence diagnosis on histopathology is mandatory for the confirmation and also to rule out malignant potential. Snare polypectomy with complete removal and wide surgical removal with follow-up is an adequate treatment for small and large colonic leiomyoma polyps respectively. Recurrences are usually not seen with benign leiomyomas.

Declaration by Authors

Ethical Approval: 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.

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Conflict of Interest: The authors declare no conflict of interest.

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