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Case Report

Giant colonic leiomyoma mimicked as a gynecological tumor: a case report

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ABSTRACT

Colonic leiomyomas are rare benign smooth muscle tumors that account for a small percentage of gastrointestinal tumors. These tumors often pose diagnostic challenges due to their similarity to other smooth muscle tumors, such as gastrointestinal stromal tumours (GIST), and their potential to mimic gynaecological or adnexal masses. In this report, we present the case of a 43-year-old female who presented with vague abdominal symptoms and was found to have a large extraluminal mass in the colon. Initial radiologic evaluations suggested a gynaecological or adnexal origin, particularly mimicking a uterine leiomyoma or ovarian tumour. However, immunohistochemistry (IHC) confirmed the diagnosis of colonic leiomyoma, which was successfully managed through surgical resection. This case underscores the importance of considering colonic leiomyomas in the differential diagnosis of large abdominopelvic masses, particularly when imaging suggests other origins. It also highlights the essential role of IHC in distinguishing colonic leiomyomas from GIST and other similar tumours to ensure accurate diagnosis and appropriate treatment.

Keywords: Colonic leiomyoma, Diagnostic challenges, Gastrointestinal stromal tumors, Immunohistochemistry

INTRODUCTION

Leiomyoma is a well-circumscribed benign tumor composed of intersecting bundles of mature smooth muscle cells.[1] While leiomyomas most commonly originate in the female genital tract, they are rarely found in extrauterine locations. True gastrointestinal leiomyomas typically occur in the esophagus or stomach, with colorectal leiomyomas being extremely rare, comprising only 3% of all gastrointestinal tumors.[2] The transverse and sigmoid colon are the most frequently affected sites in these rare cases

The clinical presentation of intestinal leiomyomas varies based on their location, size, and growth direction. Macroscopically, these tumors may exhibit intraluminal, intramural, extramural, or dumbbell configurations. Most intestinal leiomyomas remain asymptomatic until they reach a considerable size, with common symptoms including abdominal pain and a palpable mass. Symptomatic leiomyomas in the left colon are rare, with only a few documented cases exceeding 15 cm in diameter.[3]

Histologically, most leiomyomas arise from the muscularis propria and tend to grow extramurally, forming large masses that often remain asymptomatic for extended periods. The key differential diagnoses include malignant leiomyosarcomas and gastrointestinal stromal tumors (GIST). Surgical resection is the preferred treatment for large leiomyomas, with complete excision always being the goal.[4] Although rare and benign, colonic leiomyomas can lead to life-threatening complications requiring emergency intervention. Imaging findings are typically nonspecific, making surgical resection necessary to confirm the diagnosis and exclude malignancy. Here, we present a case of a large extraluminal sigmoid colon

leiomyoma that mimicked an ovarian tumor on preoperative imaging.[5]

CASE REPORT

A 43-year-old, P2L2, previous 2 normal vaginal deliveries, sterilised, no known co morbidities came to the outpatient department (OPD) with c/o of abdominal distension and abdominal discomfort. No relevant past medical, surgical or family history. clinical examination revealed a palpable mass of size corresponds to 28-week gravid uterus (20×15 cm), firm in consistency mobile from side to side, lower border not palpable. the overlying skin was normal except for a subumbilical transverse incision. abdominal ultrasonography revealed a large mixed echogenic mass of size 20×16×15 cm noted in the pelvis extends above the level of umbilicus. Internal vascularity also noted s/o exophytic broad ligament fibroid/adenexal lesion. Uterus enlarged with subserous fibroid also noted. Magnetic resonance imaging (MRI) pelvis large heterogeneously enhancing abdominopelvic solid cystic lesion (13×18×17) extending from the Rt adenexa to supraumbilical region closely abutting anterior abdominal wall - ovarian malignancy. Another well-defined lobulated homogenous enhancing lesion (7.7×5.5×5 cm) in Lt adenexa s/o broad ligament/sub serous fibroid.

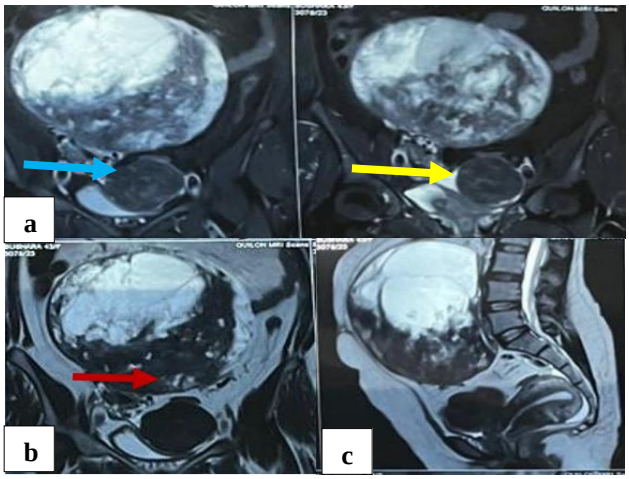

Figure 1: MRI- coronal section showing (a) heterogenous abdominal mass (blue arrow) and hypo intense broad ligament fibroid (yellow arrow), (b) mass arise from the right adenexa probably ovarian tumour, and (c) plain T2 weighted MRI large well defined heterogenous mass arising from the right side of pelvis.

Tumour markers done were normal. Patient prepared for surgery Explorative laparotomy in suspicious of ovarian malignancy from imaging. we put a midline vertical incision. Minimal peritoneal fluid collected and sent for cytology. Uterus enlarged to 10-week size with multiple small fibroids and large broad ligament fibroid size 6×6 cm on left side. A large another mass of size 15×15 cm found in the pelvis, on tracing the origin of the tumour, found to be originating from the sigmoid colon (Figure 2).

Resection of the mass with sigmoid colon resection done. Then TAH + BSO completed. Later colorectal anastomosis and diversion transverse colostomy done (bowel not well prepared). Specimen sent for histopathological examination with a provisional diagnosis of GIST. Postoperative period was uneventful except for mild electrolyte imbalance, which was corrected. Patient was kept NPO for 3 days, then sips of oral fluid started on day 4 gradually changed to soft diet as tolerated. Patient discharged on 10th postoperative day with colostomy, stoma functioning well, tolerating normal diet. Stoma closure done after 6 weeks.

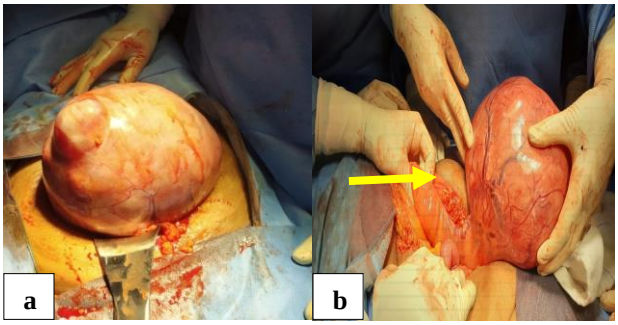

Figure 2 (a and b): Intraoperative findings, large mass arising from the sigmoid colon (arrow).

Post-operative gross pathologic examination found the mass arising from the colonic wall with intact mucosa. Macroscopic specimen in multiple pieces. Large mass (19.5×17×13 cm) nodular gray brown color weighing 2.25 kg with portion of colon mass on section solid and cystic. Solid areas appear grey white trabeculated with myxoid degeneration. Cystic spaces are filled with haemorrhagic fluids (Figure 3).

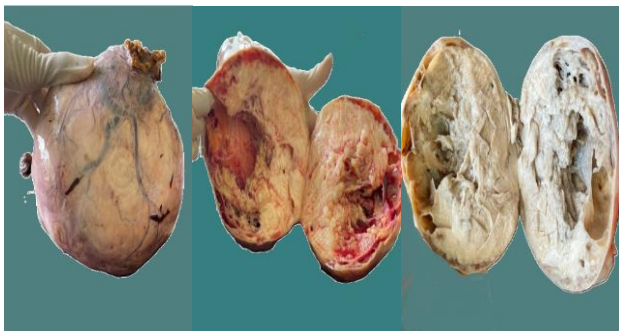

Figure 3: Postoperative specimen, mass on section both solid and cystic and solid areas appear grey white trabaculated with myxoid degeneration.

Microscopic examination revealed circumscribed neoplasm arising from muscularis layer of sigmoid colon composed of bland spindle cells arranged in interlacing bundles and fascicles (Figure 4a and b). moderate amount of cytoplasm, cigar shaped nucleus. incospicous nucleoli. Extensive areas of hyalinisation, foci of calcification and cystic and myxoid degeneration noted. Mitosis is sparse. Sections from bowel shows a lymphnode with reactive

changes. IHC strongly positive for desmin (Figure 4c) and negative for CD 117 (Figure 4d).

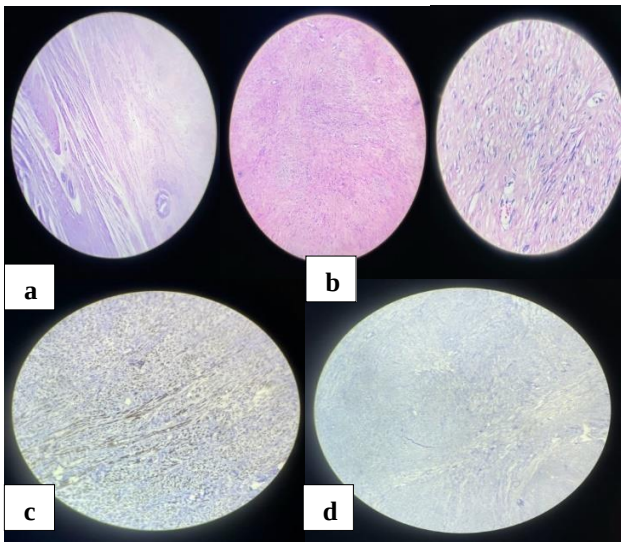

Figure 4: Postoperative histopathological examination of the specimen (a) spindle cell proliferation (red arrow) arising from the muscularis propria of the colonic wall (blue arrow) (H&E 200x), (b) tumor was formed of bland-looking spindle cells arranged in whorls and long fascicles. No detected pleomorphism, abnormal mitosis, or necrosis (H&E 200x), (c) immunohistochemical staining for Desmin showed Strong diffuse cytoplasmic positivity of tumor cells, and (d) CD117 negative.

DISCUSSION

Leiomyomas of the colon are rare, accounting for only 3% of gastrointestinal leiomyomas, which arise from either the muscularis mucosae or muscularis propria, more commonly found on the left side of the colon, particularly in the sigmoid or transverse colon, with a male predominance , but can sometimes be mistaken for adnexal mass due to their presentation as pedunculated polyps.[4] The clinical presentation of colonic leiomyomas varies by site, size, and growth direction, with most being asymptomatic, though symptoms such as abdominal pain, perforation, hemorrhage, anemia, changes in bowel habits, or a palpable mass may occur.[6] In this case report, the patient had abdominal distention and the mass was first detected by ultrasonography. Imaging findings for colonic leiomyomas are not specific enough for diagnosis. The radiologic evaluation of the mass in our patient was conflicting, with USG suggesting a uterine leiomyoma/adenexal mass and MRI indicating a possible ovarian origin.

Accurate diagnosis hinges on the critical differentiation between leiomyoma, leiomyosarcoma, and GIST, as each presents distinct pathological and clinical implications. Leiomyomas, which arise from the muscularis propria, are histologically distinguished from leiomyosarcomas by features such as necrosis, nuclear pleomorphism, cellularity, tumor size, and mitotic figures, with adequate sampling.[2]

Given that GISTs are the most common gastrointestinal tumors and can mimic leiomyomas, particularly under light microscopy. Distinguishing between the two is crucial for accurate diagnosis and effective management and immunohistochemistry being essential to avoid misdiagnosis and to differentiate them from GISTs. Microscopically, leiomyomas present as well-differentiated, well-circumscribed smooth muscle masses composed of interlacing spindle-shaped myofibers, abundant eosinophilic cytoplasm, and pale oval nuclei, notably characterized by the absence of atypia, mitotic activity, or any anaplastic features. Immunohisto-chemically, leiomyomas consistently exhibit diffuse positivity for αSMA, Caldesmon, and Desmin, alongside strong negativity for CD117, with occasional weak positivity for CD34 in some cases. Conversely, GISTs display strong positivity for CD117 and DOG-1, with potential additional positivity for CD34.[5] In our patient, immunohistochemical analysis confirmed the diagnosis of leiomyoma, with the cells demonstrating strong positivity for Desmin and clear negativity for CD117.

Skandalakis et al conducted a review of global literature spanning from 1875 to 1959 and subsequently, Tarasidis and Hatch1 reported a total of 331 colon leiomyomas between 1875 and 1996, revealing that only 5 of the 25 cases involving descending or sigmoid colon leiomyomas exceeded 15 cm.[4] In recent years, Sagnotta et al reported a case of a large sigmoid colon leiomyoma exceeding 15 cm, while Zuhdy et al documented a case of leiomyoma in the ascending colon, contributing valuable insights to the understanding of these rare tumors. Our case is among the rare instances of a giant sigmoid colon leiomyoma documented in the literature.

CONCLUSION

This case contributes to the limited literature on large colonic leiomyomas, underscoring their rarity and the diagnostic challenges they present. Radiologic evaluation initially suggested a gynecological or adnexal origin, mimicking a uterine leiomyoma or ovarian tumor. Given the overlapping clinical and imaging features, IHC plays a critical role in confirming the diagnosis, effectively distinguishing leiomyomas from other smooth muscle tumors, such as GIST. This case underscores the importance of including colonic leiomyomas in the differential diagnosis of large abdominopelvic masses.

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