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Case Report

A rare case of giant broad ligament leiomyoma mimicking abdominopelvic malignancy

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ABSTRACT

Broad ligament leiomyomas are uncommon extra-uterine fibroids which may pose as adnexal or retroperitoneal malignancies because of their position and presentation. A 44-year-old multiparous woman came with an incrementally worsening swelling in the abdomen for 1 year and pain in the abdomen for 15 days. On examination, there was a big abdominopelvic mass from the pelvis, firm in consistency, filling hypogastrium and going up to the upper abdomen. Contrast-enhanced computed tomography (CT) abdomen and pelvis revealed a large heterogeneously enhancing lobulated solid lesion (20×18×25 cm) in the abdominopelvic cavity, causing compression of nearby bowel, bladder, rectum, and ureters, with differential diagnoses including giant broad ligament leiomyoma, ovarian tumor, or desmoid tumor. Exploratory laparotomy with resection of the mass, total hysterectomy, and bilateral salpingo-oophorectomy was done. Histopathological examination established leiomyoma with hyalinization from the broad ligament. Broad ligament leiomyomas are less than 1% of all fibroids and tend to resemble adnexal tumors or sarcomas on imaging. They are hard to diagnose preoperatively, and imaging cannot always distinguish them from ovarian tumors. Surgical resection is still the treatment of choice. Broad ligament leiomyomas may be rare, but they must be included in the differential diagnosis of large abdominopelvic masses in women. Complete surgical resection is definitive treatment.

Keywords: Broad ligament leiomyoma, Extra-uterine fibroid, Giant abdominopelvic mass, SCARE guidelines

INTRODUCTION

Leiomyomas are the most frequent benign tumors of the uterus, occurring in 20–30% of women of childbearing age.[1] Broad ligament leiomyomas are, on the other hand, infrequent extra-uterine variants, accounting for fewer than 1% of fibroids.[2-5] They result from smooth muscle cells in the broad ligament and can be confused with ovarian neoplasms, sarcomas, or retroperitoneal masses because of their rare location.

We report a case of giant broad ligament leiomyoma presenting as huge abdominopelvic mass, treated surgically, and reported according to the SCARE 2023 guidelines.[6]

CASE REPORT

Patient information

The patient was a 44-year-old woman, P1L1, and with no major comorbidities.

Symptoms involved increasing abdominal swelling × 1-year, dull aching abdominal pain × 15 days. Amenorrhea for 3 months was present.

No vomiting, altered bowel habit, urinary, weight loss, or malignancy family history (Figures 1a and b).

Clinical findings

On examination: abdomen distended with large globular mass from hypogastrium to epigastrium, firm in consistency, smooth surface, mobility limited.

Per speculum and per vaginal exam: uterus not palpable separately, mass occupying pelvis. Posterior and lateral fornix fullness present. Mass was bimanually palpable.

Investigations

Contrast-enhanced computed tomography (CECT) abdomen and pelvis: huge heterogeneously enhancing lobulated solid mass (20.6×18.2×25.5 cm) in abdominopelvic cavity, involving bladder, rectum, sigmoid colon, and displacing uterus and adnexa. Differentials involved giant broad ligament leiomyomavarian solid tumor and zesmoid tumor (Figure 2).

Figure 1 (a and b): Clinical image of patient.

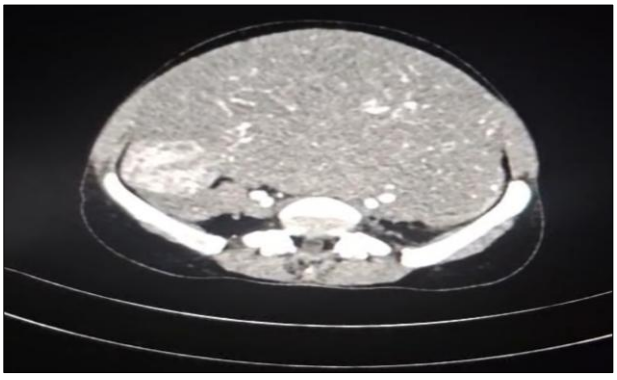

Figure 2: Contrast-enhanced CT abdomen showing large broad ligament mass.

Tumor markers (CA-125, CEA) in normal range.

Later routine hematology and biochemistry normal.

Surgical intervention

Exploratory laparotomy done through lower midline incision (Figure 3).

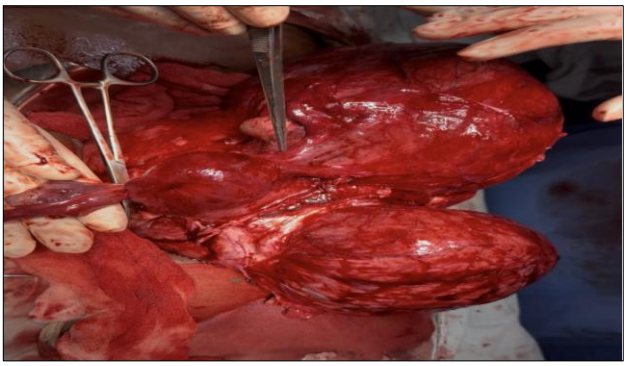

Figure 3: Intraoperative image of lobulated mass.

Findings

Large lobulated solid mass from left broad ligament, adherent to surrounding pelvic structures, displacing uterus. Uterus along with B/L ovaries found normal.

Procedure

Mass excision with total abdominal hysterectomy + bilateral salpingo-oophorectomy.

Blood loss was about ~650 ml. Postoperative course uneventful.

Histopathology

Gross

Well-circumscribed, encapsulated multinodular mass (24×25×12 cm) from broad ligament, attached to myometrium (Figure 4).

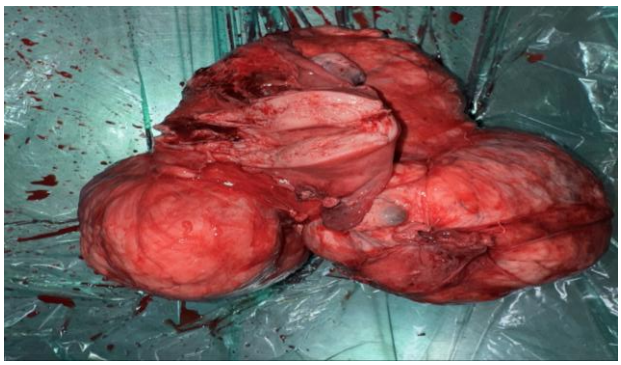

Figure 4: Excised specimen gross image.

Microscopy

Smooth muscle bundles spindle-shaped with hyalinization; no atypia, necrosis, malignancy (Figure 5).

Final diagnosis

Leiomyoma of the broad ligament with hyalinization.

Follow-up

Patient recovered well; discharged on day 7 postoperative. On 1-month follow-up- symptom-free, no recurrence was seen.

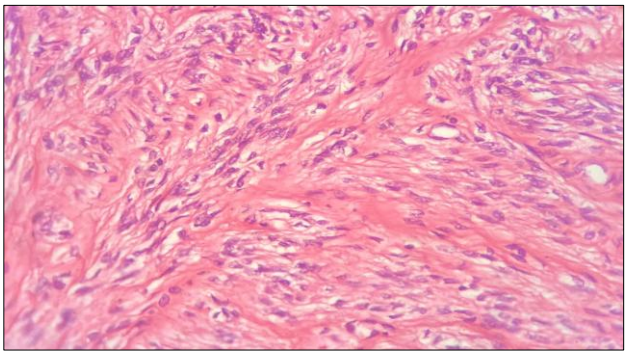

Figure 5: Histopathology slide showing leiomyoma with hyalinization.

DISCUSSION

Broad ligament leiomyomas are extremely uncommon benign smooth-muscle tumors arising either from ectopic smooth-muscle fibers within the broad ligament or from the lateral uterine wall extending into it. They account for only 0.4–1% of all uterine fibroids.[2,3] Their extra-uterine position allows them to grow to massive sizes before producing symptoms, as seen in our patient.

Epidemiology and rarity

Duhan et al reported 14 cases over ten years, with the largest measuring 15×18 cm; most were misdiagnosed pre-operatively as ovarian neoplasms.[2] Kodandapani et al similarly emphasized that these tumors are frequently mistaken for adnexal masses due to anatomical distortion.[4] Similar diagnostic confusion has been described by Kawamura et al who reported a giant broad-ligament leiomyoma initially suspected to be an ovarian malignancy.[5] Our case adds to this limited pool, being one of the few documented broad-ligament fibroids exceeding 25 cm in greatest dimension.

Clinical and diagnostic challenges

The clinical presentation is nonspecific—pelvic pain, distension, or pressure effects on adjacent viscera. Rajaram et al noted that less than one-third of patients could be accurately diagnosed pre-operatively.[4] In our case, tumor markers (CA-125, CEA, β-hCG) were normal, echoing findings by Jha et al, where 90% of benign leiomyomas had normal CA-125 values.[7]

Radiological correlation

Imaging plays a pivotal role but is often inconclusive. Ultrasonography usually reveals a solid hypoechoic mass adjacent to the uterus. CT delineates size and relation to viscera but cannot always define the organ of origin. Magnetic resonance imaging (MRI) remains the gold standard, identifying the bridging vessel sign—continuity of vascular structures between uterus and mass—helpful in differentiating leiomyomas from ovarian tumors.[8] MRI typically shows a whorled low-signal lesion on T2; Kawaguchi et al detailed these radiologic hallmarks.[9] However, as reported by Duhan et al and confirmed in our case, very large lesions can obscure these anatomical landmarks, perpetuating diagnostic uncertainty.[2] Recent reviews, such as that by Dueholm, emphasize MRI as the most accurate tool for characterizing leiomyomas.[10]

Intraoperative and surgical considerations

Surgical management remains the cornerstone of treatment. Because broad-ligament fibroids often displace ureters and major pelvic vessels, the risk of iatrogenic injury is high. Kodandapani et al and Rajaram et al both stress the importance of identifying ureteral course before ligating feeding vessels.[3,4] In our patient, the ureter was visualized and safeguarded throughout dissection; complete excision was achieved along with total abdominal hysterectomy and bilateral salpingo-oophorectomy. Laparoscopic and robotic approaches have been described for smaller tumors (≤10 cm), but open surgery remains preferred for giant lesions to ensure safe vascular control and intact removal.[11] Our decision for laparotomy aligns with this consensus.

Histopathology and degenerative changes

Broad-ligament leiomyomas share microscopic features with uterine counterparts—interlacing fascicles of spindle cells with elongated nuclei and eosinophilic cytoplasm. Degenerative changes such as hyalinization, cystic degeneration, and myxoid change occur in ~60% of large lesions.[2] Our specimen showed extensive hyalinization without atypia or necrosis, confirming benign behavior. Murase et al. correlated hyalinization on histology with low T2-signal areas on MRI.[12] Our case exhibited similar features histologically. Kodandapani et al reported similar hyalinized variants in 21% of cases.[4]

Comparison of outcomes

Postoperative outcomes are excellent when complete excision is achieved. In Duhan's series, no recurrence was noted after a mean follow-up of 18 months.[2] Our patient remains disease-free at one-month follow-up. Literature suggests recurrence is exceedingly rare unless incomplete removal or parasitic myoma remnants persist (Table 1).

Review of literature

Comparable cases seen in women in the age group of 35–50 years, with presentations mimicking ovarian tumors. Surgical removal with or without hysterectomy is still the gold standard.

Table 1: Comparison of present case with published literature.

Parameter	Present case	Duhan et al, 2013 (n=14)	Rajaram et al, 1992 (n=14)	Kodandapani et al, 2013 (n=6)	Fasih et al, 2008	Interpretation
Age of presentation (years)	44	35-50	30-55	32-48	34-52	Comparable; mid-reproductive to perimenopausal age group most affected.
Symptoms	Progressive abdominal distension, dull pain	Abdominal pain and mass (78%)	Pelvic mass (71%)	Pain, pressure symptoms	Variable	Our presentation mirrors common symptoms across series.
Size of tumor (cm)	25×20×18	8-18	10-22	6-20	Up to 15	Largest reported among Indian series; qualifies as "giant" leiomyoma.
Preoperative diagnosis accuracy	Misdiagnosed as ovarian tumor	36% correctly diagnosed	29%	33%	40% (MRI based)	Diagnostic uncertainty remains high despite imaging advances.
Imaging modality	CECT abdomen and pelvis	USG, CT	USG	USG, MRI	MRI	MRI remains superior, but even advanced imaging may fail in giant lesions.
Tumor markers	Normal (CA-125, CEA)	Normal	Normal	Normal	Normal	Reinforces that tumor markers are unhelpful in differentiating benign lesions.
Surgical approach	Open laparotomy with TAH + BSO	Laparotomy/ laparoscopy	Laparotomy	Laparotomy	—	Consistent with literature recommending open surgery for large masses.
Intra-operative challenge	Ureteric displacement; bladder stretching	Ureteral proximity (43%)	Vascular adhesions (35%)	Ureteral displacement (50%)	—	Confirms the high anatomical risk; careful dissection mandatory.
Histopathology	Leiomyoma with hyalinization, no atypia	21% hyalinization	14% cystic degeneration	33% myxoid change	Various degenerations	Our specimen fits benign leiomyoma with common degenerative change.
Outcome and recurrence	Uneventful, no recurrence (1-mo FU)	No recurrence (18-mo FU)	No recurrence (12-mo FU)	No recurrence (6-mo FU)	—	Surgical excision remains curative; recurrence is rare.

CONCLUSION

Giant broad ligament leiomyomas, despite being uncommon, must always be included in the differential diagnosis in the case of large abdominopelvic masses in females. Imaging is usually non-conclusive, and the diagnosis is confirmed by histopathology. Total surgical removal is therapeutic.

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REFERENCES

1. Cramer SF, Patel A. The frequency of uterine leiomyomas. Am J Clin Pathol. 1990;94(4):435-38.
2. Duhan N. Broad ligament fibroid: a diagnostic dilemma. Gynecol Minim Invasive Ther. 2013; 2(1):34-6.
3. Rajaram S. Broad ligament fibroids: an analysis of 14 cases. Int J Gynaecol Obstet. 1992; 38(3):215-8.
4. Kodandapani S. Broad ligament leiomyoma: a diagnostic and surgical challenge. Case Rep Obstet Gynecol. 2013; 2013:1-3.
5. Kawamura N, et al. Giant broad ligament leiomyoma mimicking ovarian tumor: a case report and review. J Obstet Gynaecol Res. 2014;40(4):1135–1139.

6. Agha RA et al. The SCARE 2023 Guideline. Int J Surg. 2023;109:237-42.
7. Jha R et al. CA-125 levels in benign and malignant gynecologic tumors. J Obstet Gynecol India. 2012; 62(6):615-8.
8. Fasih N, Prasad Shanbhogue AK, Macdonald DB, Fraser-Hill MA, Papadatos D, Kielar AZ, et al. Leiomyomas beyond the uterus: unusual locations, rare manifestations. Radiographics. 2008;28(7):1931-48.
9. Kawaguchi K. Imaging of uterine leiomyomas: comprehensive review. Radiographics. 1994;14(6):1275-91.
10. Dueholm M. Imaging techniques for evaluation of uterine myomas. Best Pract Res Clin Obstet Gynaecol. 2018;46:34-52.
11. Pandit P, Chandak S. Laparoscopic management of broad ligament fibroids. J Gynecol Endosc Surg. 2011;2(1):64-6.
12. Murase E, Siegelman ES, Outwater EK, Perez-Jaffe LA, Tureck RW. Uterine leiomyomas: histopathologic features, MR imaging findings, differential diagnosis, and treatment. Radiographics. 1999;19(5):1179-97.

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