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Case Report

Broad ligament leiomyoma with cystic change mimicking as ovarian tumor

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ABSTRACT

Uterine leiomyomas are common benign gynaecological tumours, occurring in 20-40% of cases in India. Broad ligament fibroids, though rare (less than 1%), are the most frequent extrauterine site and can be mistaken for ovarian carcinoma due to their unusual location. This report presents a nearly asymptomatic 50-year-old woman with irregular menstrual cycles who was found to have a non-tender, mobile cystic mass equivalent to an 18-week gravid uterus. Ultrasound detected a 540 CC complex solid-cystic right adnexal lesion with an un-visualized ovary; CECT showed a 780 CC solid-cystic right ovarian mass, and MRI revealed a suspicious 570 CC solid-cystic lesion, raising concerns for malignancy. IVP was omitted as ureters were normal. Laparotomy identified a sizable cystic mass located on the right side within the broad ligament, which exhibited minimal resemblance to leiomyoma and resulted in mild anatomical distortion. Both the uterus and ovaries appeared unremarkable. Histopathological analysis confirmed the lesion as a broad ligament fibroid exhibiting extensive cystic degeneration. Due to this atypical presentation, immunohistochemical studies were recommended to exclude malignancy. Broad ligament leiomyomas, particularly those with solid and cystic components, may mimic ovarian malignancies during clinical and radiological assessment, complicating differential diagnosis due to their atypical presentation. Histopathology plays a crucial role in establishing a definitive diagnosis. This case is presented due to its infrequency and the diagnostic uncertainty it created for both clinicians and the patient.

Keywords: Broad ligament fibroid, Ovarian tumor, Cystic degeneration

INTRODUCTION

Leiomyomas are the most common benign tumors of the female genital tract and typically arise within the uterine myometrium.[1] However, in rare instances, they may develop in extrauterine locations. Among these, the broad ligament is the most frequent site of origin for extrauterine leiomyomas, accounting for less than 1% of all leiomyoma cases.[2] Broad ligament leiomyomas are usually asymptomatic until they reach a large size or undergo secondary changes such as cystic, myxoid, or red degeneration. These changes may lead to diagnostic confusion with adnexal or ovarian neoplasms.

Cystic degeneration occurs in approximately 4% of uterine leiomyomas and even less frequently in extrauterine leiomyomas. Because of their anatomic proximity to the ovaries and tubes, broad ligament tumors may be radiologically interpreted as ovarian neoplasms. Hence, the final diagnosis often depends on histopathological confirmation supplemented by IHC studies to differentiate leiomyoma from other mesenchymal or epithelial tumors.

CASE REPORT

A 50-year-old perimenopausal woman (P2L2) presented with complaints of abnormal uterine bleeding for several

months. She reported intermittent pelvic discomfort but had no history of weight loss, gastrointestinal symptoms, or urinary disturbances. Physical examination revealed a pelvic mass that was firm and slightly mobile. Routine blood work was within normal limits, and tumor markers (including CA-125) were not elevated.

Ultrasonography followed by a pelvic MRI showed a large right-sided adnexal mass with both solid and cystic components. The uterus appeared normal in size with a small subserosal fibroid, while both ovaries were not separately visualized from the mass. Based on radiologic findings, a diagnosis of right adnexal neoplasm with differential possibilities including cystadenoma or ovarian stromal tumor was considered.

The patient underwent exploratory laparotomy for removal of the mass. Intraoperatively, the mass was found to be arising from the right broad ligament and was separate from the ovary and fallopian tube. The uterus and both ovaries were grossly normal. A total abdominal hysterectomy with bilateral salpingo-oophorectomy and excision of the mass was performed.

Gross pathology

The excised mass measured approximately 15 cm in diameter. On cut section, the tumor showed a well-circumscribed, nodular appearance with extensive cystic spaces filled with serous fluid. Solid areas had a whorled appearance typical of smooth muscle tumors.

The uterus showed a small intramural fibroid, and both ovaries and fallopian tubes were unremarkable.

Microscopic examination

Histological examination of the broad ligament mass revealed a tumor composed of interlacing bundles of smooth muscle cells without atypia. Numerous cystic spaces of variable size were seen within the tumor, corresponding to areas of cystic degeneration. No areas of necrosis, mitotic activity, or nuclear atypia were identified. The uterus showed a small leiomyoma, and the endometrium and myometrium were within normal histological limits. Ovaries and fallopian tubes were histologically normal

Immunohistochemistry

To confirm the diagnosis, immunohistochemical staining was performed. The tumor cells were: Positive for:

Desmin, smooth muscle actin (SMA), H-Caldesmon, muscle-specific actin (MSA), negative for: Cytokeratin (CK), CD34, S-100 and MyoD1.

These findings confirmed the diagnosis of leiomyoma of smooth muscle origin and ruled out epithelial, neural, or skeletal muscle tumors.

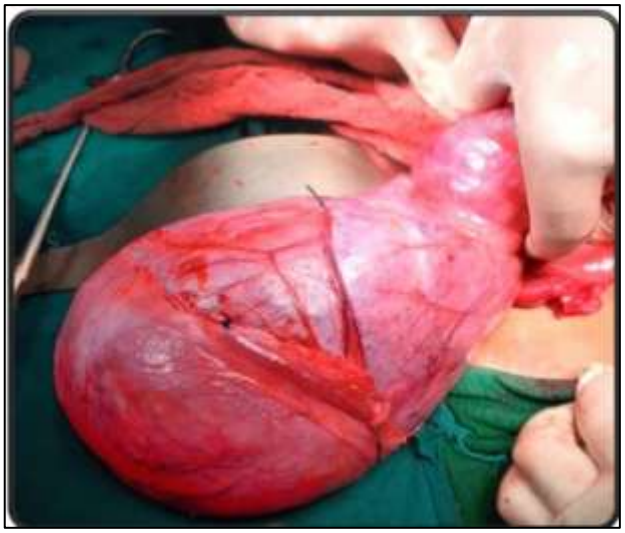

Figure 1: Intra op picture.

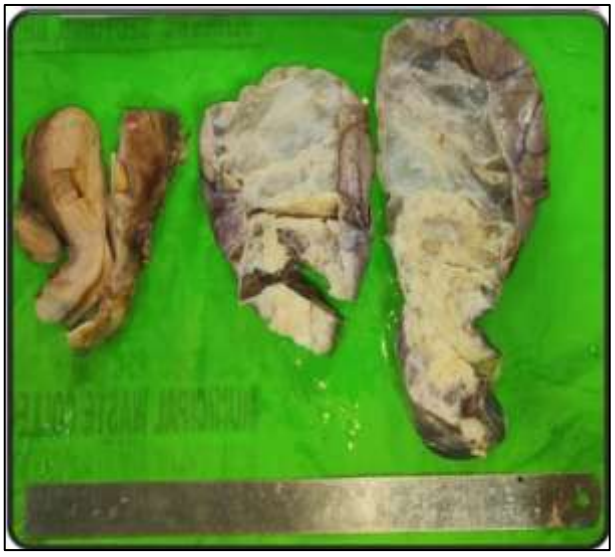

Figure 2: Cut section of the specimen.

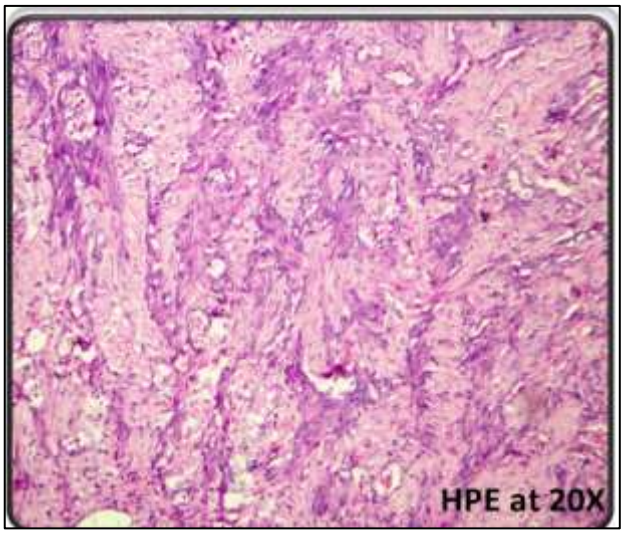

Figure 3: Histopathological picture.

DISCUSSION

Broad ligament leiomyomas are rare but important entities to recognize, particularly due to their ability to mimic malignancy. These tumors may grow to a large size before detection, and when they undergo cystic or hydropic degeneration, radiologic findings may suggest adnexal malignancies.[3]

The differential diagnosis includes epithelial ovarian tumors (like cystadenomas), mesenchymal tumors (such as fibromas or thecomas), and metastatic disease. Because of the overlap in imaging findings, clinical and radiologic assessment alone may be insufficient for accurate diagnosis.

In this case, the tumor's solid-cystic appearance, anatomical location, and radiological features led to an initial diagnosis of an adnexal neoplasm. However, the surgical findings, gross pathology, and most importantly, histopathological and IHC studies confirmed the diagnosis of a benign leiomyoma arising from the broad ligament with extensive cystic degeneration.

IHC plays a crucial role in distinguishing leiomyomas from other spindle cell tumors. Desmin and SMA are key markers of smooth muscle origin, while H-Caldesmon is highly specific. Negative staining for epithelial (CK), neural (S-100), and vascular (CD34) markers further rules out other differentials.

Management of such tumors is primarily surgical. Complete excision is curative, and the prognosis is excellent. However, due to the tumor's location and potential for adherence to surrounding pelvic structures, surgery requires skill and anatomical familiarity.[4]

CONCLUSION

This case underscores the diagnostic challenge posed by broad ligament leiomyomas, especially when associated with degenerative changes like cystic transformation. While rare, they should be included in the differential diagnosis of adnexal masses with solid and cystic components. A high index of suspicion, coupled with detailed histopathological evaluation and confirmatory immunohistochemistry, is essential for correct diagnosis.

Awareness of this rare entity can prevent misdiagnosis and overtreatment. Multidisciplinary collaboration between radiologists, gynecologists, and pathologists is crucial for optimal patient management and surgical planning.

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REFERENCES

1. Ngorili GS, Yadav BB, Takalkar AA. Epidemiological study of uterine fibroids: our experience from urban Maharashtra. Int J Reprod Contracept Obstet Gynecol. 2022;11(8):2101-5.
2. Oliveira JD, Cunha TM, Tereso A. Tumors of the broad ligament: what and when to suspect such rare location. Radiol Bras. 2020;53(5):349-55.
3. Jha S, Singh A, Singh S, Murmu S. Huge broad ligament leiomyoma with cystic degeneration: a diagnostic and surgical challenge. J Obstet Gynaecol Res. 2020;46(5):791-4.
4. Yang XF, Tang M, Liu LL, We XQ. A diagnostic dilemma and surgical attention of a giant broad ligament leiomyoma with cystic degeneration: case report. Clin Exp Obstet Gynecol. 2021;48(3):715-8.
5. Declas E, Lucot JP. Extrauterine leiomyomatosis: review of literature. Eur J Obstet Gynecol Reprod Biol. 2019;47(7-8):582-90.
6. Jena S, Sinha NK, Prasad A, Gopal K, Mallik J. Giant Broad Ligament Leiomyoma: A Diagnostic and Surgical Challenge. Cureus 2024;16(11):e72890.
7. Panda SR, Chandra C. A rare case of leiomyoma of uterus with cystic degeneration Int J Reprod Contracept Obstet Gynecol. 2015;4(3):863-5.

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