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Case Report

Giant Broad Ligament Leiomyoma Mimicking Adnexal Tumor: a Case Report

Aymane Ouriaghli[1*], MD; Benali Saad[1], MD; Alilou Ismail[2], MD; Moukit Mounir[2], MD; Rahmoune Mohammed[2], MD; Kouach Jaouad[1], MD; Baba Habib Moulay Abdellah[2], MD

[1]Department of Obstetrics and Gynecology, Military Hospital, Mohamed V University, Rabat, Morocco
[2]Department of Obstetrics and Gynecology, Military Hospital, Hassan 2 University, Meknès, Morocco

Corresponding author:* Aymane Ouriaghli, MD; Department of Obstetrics and Gynecology, Military Hospital, Mohamed V University, Postal code: 10000, Rabat, Morocco. **Tel: +212-621-238440; **Email:** our.aayman@gmail.com

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Abstract

Introduction: Broad ligament leiomyomas are rare extrauterine smooth muscle tumors accounting for less than 1% of all uterine fibroids. Their atypical location leads to distortion of pelvic anatomy and frequent misdiagnosis as adnexal or ovarian tumors. Even advanced imaging modalities may fail to clearly identify the site of origin, creating significant diagnostic and surgical challenges.
Case Presentation: We reported a case of a giant broad ligament leiomyoma initially suspected to be an adnexal tumor. A 40-year-old multiparous woman presented with progressive abdominal distension and pelvic discomfort. Imaging revealed a 12 × 10 cm adnexal mass suspicious for ovarian pathology. Exploratory laparotomy identified a right broad ligament leiomyoma, which was successfully excised with preservation of the uterus and adnexa. Histopathology confirmed a benign leiomyoma with degenerative changes. The postoperative course was uneventful, and follow-up showed no recurrence.
Conclusions: Broad ligament leiomyomas should be considered in the differential diagnosis of adnexal masses, especially when imaging findings are inconclusive. Despite advances in radiologic evaluation, definitive diagnosis is often achieved intraoperatively. Awareness of this entity is essential to avoid misdiagnosis, prevent unnecessary radical surgery, and ensure careful intraoperative identification of displaced structures such as the ureter; surgical excision provides an excellent prognosis.

Keywords: Leiomyoma, Broad Ligament, Adnexal Diseases, Organ Sparing Treatments, Gynecologic Surgical Procedures

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1. Introduction

Leiomyomas are the most prevalent benign tumors of the female genital tract, arising from smooth muscle cells of the myometrium. Although most leiomyomas are intramural, subserosal, or submucosal, extrauterine leiomyomas may develop in unusual anatomical locations such as the cervix, round ligament, utero-ovarian ligament, and broad ligament. Broad ligament leiomyomas represent a particularly rare entity, accounting for <1% of all leiomyomas, and may arise either from smooth muscle fibers within the mesometrium or from parasitic myomas that detach from the uterus and acquire an independent blood supply (1, 2).

Their ectopic location results in distortion of normal pelvic anatomy, making clinical and radiologic diagnosis difficult. These tumors frequently displace the uterus and adnexa and may simulate ovarian neoplasms, retroperitoneal tumors, or tubo-ovarian masses (3, 4). Because growth occurs in a relatively expandable retroperitoneal space, tumors may reach considerable size before detection. Symptoms are usually related to mass effect, including pelvic pain, abdominal distension, urinary frequency, constipation, or venous compression (1, 5).

Ultrasonography remains the first-line imaging modality but is often limited when anatomy is distorted. Magnetic resonance imaging (MRI) provides superior tissue characterization, typically demonstrating low T2-signal intensity and a whorled architecture; however, even MRI may fail to clearly define the organ of origin in giant tumors (3, 6, 7).

We reported a case of a giant broad ligament leiomyoma initially suspected to be an adnexal tumor, emphasizing diagnostic pitfalls, surgical challenges, and correlation with current literature (3, 6, 8).

2. Case Presentation

2.1. Patient Description: A 40-year-old multiparous woman (G3P3) presented with a six-month history of progressive lower abdominal distension and intermittent pelvic discomfort.

2.2. Case History: Menstrual cycles were regular, and there was no abnormal uterine bleeding. She denied urinary, gastrointestinal, or constitutional symptoms. Regarding her reproductive history, all three of her previous pregnancies resulted in uncomplicated full-term vaginal deliveries. She reported no current or prior use of hormonal medications, including oral contraceptive pills. Furthermore, there was no documented family history of uterine or extrauterine fibroids.

2.3. Physical Examination Results: Abdominal examination revealed a firm, mobile mass reaching the umbilicus, corresponding to a 16-week gravid uterus. Bimanual examination suggested a right adnexal mass, while the uterus was palpated separately and appeared normal in size.

2.4. Results of Pathological Tests and Other Investigations: Preoperative laboratory investigations were within normal limits, aside from a mildly elevated CA-125; given that the mass involved the broad ligament—a peritoneal fold—this was considered a nonspecific finding related to local peritoneal irritation rather than a marker of malignancy. Carcinoembryonic Antigen (CEA) and Alpha-Fetoprotein (AFP) were within normal limits, arguing against a germ cell tumor component. Ultrasound demonstrated a well-circumscribed heterogeneous right adnexal mass (Figure 1). Magnetic Resonance Imaging (MRI) revealed a 12 × 10 cm encapsulated lesion with predominantly low T1 and T2 signal intensity and focal hyaline degeneration—features suggestive of leiomyoma. However, the mass appeared distinct from the uterus and adjacent to the right adnexa, preventing definitive exclusion of ovarian origin. The definitive diagnosis could only be confirmed after surgery, once the specimen was available for histopathological examination. Gross examination showed a firm, whorled, and encapsulated tumor weighing approximately 800 g (Figure 2). Microscopic evaluation showed interlacing smooth muscle bundles without atypia, necrosis, or increased mitotic activity, confirming benign leiomyoma.

2.5. Treatment Plan: Given the diagnostic uncertainty and the size of the mass, exploratory laparotomy was planned. The surgical team planned to preserve the uterus and adnexa whenever intraoperative findings allowed.

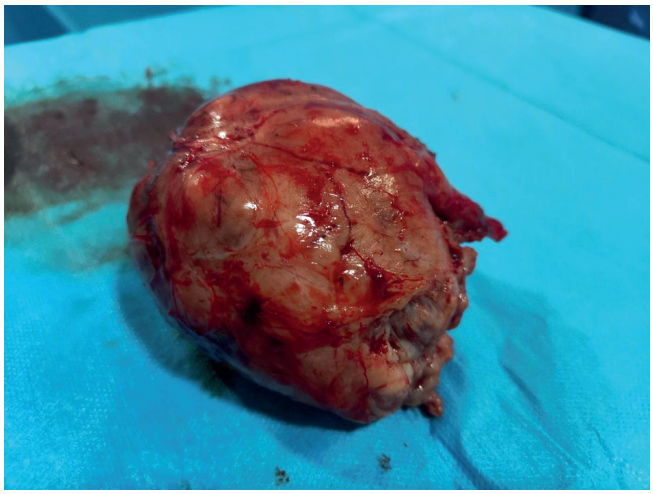

Figure 2: The figure shows the Resected Giant Broad Ligament Leiomyoma Specimen.

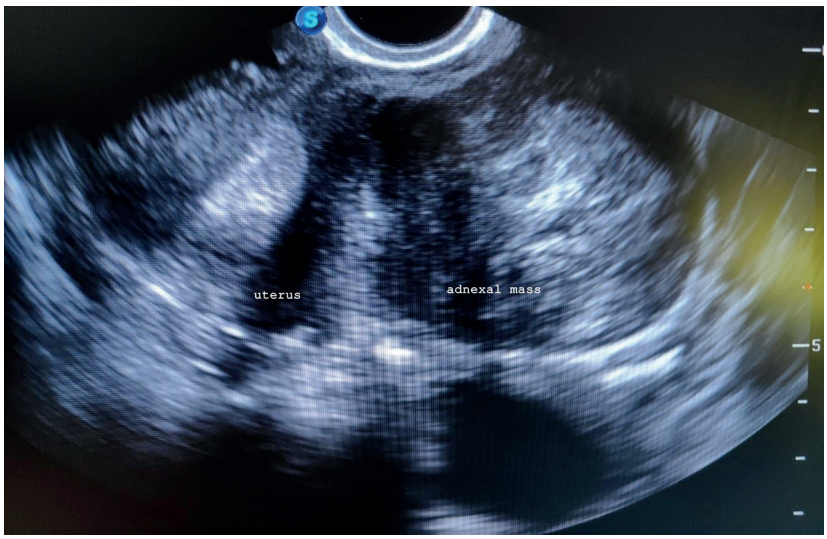

Figure 1: The figure shows the transvaginal ultrasound image; a 9 cm, well-circumscribed heterogeneous right adnexal mass, appearing separate from the uterus.

2.6. Expected Outcome of the Treatment Plan: Because imaging suggested a leiomyoma, complete excision with preservation of the uterus and adnexa was expected, along with an uneventful recovery. However, an ovarian tumor could not be fully excluded before surgery.

2.7. Actual Outcome: During laparotomy, a large, encapsulated mass was identified arising from the right broad ligament, separate from the uterus, ovary, and fallopian tube. Significant displacement of pelvic structures was observed, but no invasion was present. The ureter was displaced laterally but intact. The mass was carefully dissected from the broad ligament while protecting the ureter and major pelvic vessels, and complete excision was achieved without rupture; the uterus and adnexa were preserved. Recovery was uneventful; the patient resumed normal activity by postoperative day 5 and remained asymptomatic at the 3-month and 6-month follow-up visits, with no recurrence on pelvic ultrasound.

3. Discussion

Broad ligament leiomyomas are rare extrauterine smooth-muscle tumors arising either from the muscular fibers within the broad ligament or from parasitic fibroids that detach from the uterus and develop an independent blood supply (1, 2). Although histologically identical to conventional uterine leiomyomas, their atypical anatomical location results in altered pelvic relationships and makes preoperative diagnosis challenging. They may displace the uterus, ovaries, fallopian tubes, bladder, ureter, or iliac vessels, creating a clinical picture similar to that of ovarian neoplasms, tubo-ovarian masses, or even retroperitoneal tumors (3, 4).

Broad ligament leiomyomas are further classified as true (originating from smooth muscle fibers of the mesometrium) or false/parasitic leiomyomas, which detach from the uterus and develop an independent blood supply. Their vascular supply may arise from uterine or ovarian vessels, explaining variability in intraoperative bleeding risk (2, 6).

3.1. Diagnostic Challenges

The nonspecific symptoms of broad ligament leiomyomas—pelvic pain, abdominal distension, urinary frequency, constipation, or pressure effects—often reflect the mass effect rather than tumor biology. In many reported cases, patients remain asymptomatic until the tumor reaches a considerable size, as seen in our patient and in some previous reports (1, 5). Because clinical examination frequently fails to determine the site of origin, imaging plays a pivotal role in evaluation. Distortion of pelvic landmarks, displacement rather than enlargement of the uterus and frequent non-visualization of ovaries contribute significantly to diagnostic confusion. Even MRI may fail to demonstrate the "bridging vessel sign," which can help establish uterine origin, particularly in giant tumors (2).

Ultrasonography is widely used as an initial modality; however, its ability to differentiate leiomyomas from adnexal tumors is limited when anatomy is significantly distorted (1, 3). MRI provides superior soft-tissue characterization, demonstrating typical features such as low-signal intensity on T2-weighted images and the classical "whorled pattern". Nonetheless, large masses may obscure the interface with the uterus or ovary, leading to misinterpretation, as highlighted in some previous studies (3, 7). In our case, despite high-resolution MRI, the mass remained inseparable from the right adnexal region, which reinforced the suspicion of an ovarian tumor.

Differential diagnoses include ovarian fibroma, pedunculated subserosal fibroid, broad ligament cyst, leiomyosarcoma, and nerve-sheath tumors. In particular, ovarian fibromas and thecomas may closely mimic the radiologic appearance of a broad ligament leiomyoma (8). Tumor markers add limited specificity in this setting. CA-125 is produced by the peritoneum, so any condition that irritates it—including uterine and broad ligament leiomyomas—can raise CA-125, not just malignancy (5). In our patient, CA-125 was mildly elevated, a finding attributed to local peritoneal irritation from the mass's broad ligament location rather than to malignancy; as this illustrates, an elevated value, like a normal one, cannot reliably exclude ovarian pathology and must be interpreted alongside imaging and clinical findings (9).

3.2. Surgical Considerations

Surgery remains both diagnostic and therapeutic. Broad ligament leiomyomas are often encountered incidentally during operative procedures, but preoperative suspicion is crucial because they pose technical challenges due to

altered pelvic anatomy. The ureter and uterine vessels are commonly displaced, making them vulnerable to injury during dissection. Ureteral injury is a recognized risk during dissection of broad ligament fibroids, since large tumors displace the ureter unpredictably and can make it difficult to locate safely (6). Broad ligament leiomyomas may receive vascular supply from both uterine and ovarian vessels, which explains the potential for significant intraoperative bleeding. Careful identification of the ureter along the pelvic sidewall before mass mobilization is critical (2, 6). In our case, the ureter was displaced laterally but remained intact due to meticulous dissection.

Considering the patient's age (40 years old), a central focus of the surgical management was a conservative and organ-sparing intervention. In women of reproductive age, practicing uterus- and ovary-sparing surgery is crucial for maintaining endogenous hormone production, reproductive health, and overall quality of life. However, managing giant broad ligament leiomyomas poses significant technical challenges to this conservative approach. Severe distortion of the pelvic anatomy and the mass's proximity to major vessels and the fallopian tubes require surgeons to meticulously dissect the tumor capsule and enucleate the mass without compromising the vascular supply to the adjacent healthy ovary and uterus. This case underscores the necessity of high intraoperative vigilance to safely achieve complete excision, ensuring that patients are spared from unnecessary radical interventions—such as premature oophorectomy or hysterectomy—when a mass mimicking an adnexal malignancy is encountered.

Although minimally invasive approaches have gained popularity, laparotomy is generally preferred for large (>10 cm) fibroids, uncertain diagnosis, or suspected malignancy (3, 7). Laparoscopic resection is feasible in smaller tumors but requires advanced skills due to limited working space and potential for significant bleeding. The use of Harmonic and bipolar vessel sealing devices (LigaSure, Harmonic) reduces intra-operative blood loss (10).

3.3. Pathology and Prognosis

Histopathologic evaluation confirms diagnosis by demonstrating interlacing smooth-muscle bundles without atypia or high mitotic activity. These tumors lack continuity with the myometrium, which explains the low recurrence rate after complete excision. Malignant transformation into leiomyosarcoma is exceedingly rare but mandates thorough histopathological evaluation (1, 6). Degenerative changes—hyaline, cystic, or myxoid—are common in large tumors and may account for atypical radiological appearances (8).

Prognosis after surgical removal is excellent, with very low recurrence rates because broad ligament leiomyomas typically have an isolated vascular supply and no remaining myometrial origin. Most reported patients—including ours—remain symptom-free during long-term follow-up (1, 5).

3.4. Comparison with Literature

Review of published literature showed that tumor size at presentation frequently exceeds 10 cm, likely reflecting delayed diagnosis, since symptoms are often mistaken for adnexal or gastrointestinal conditions (1, 5, 7). Our case reinforced this pattern: even advanced imaging did not reliably determine tumor origin before surgery.

Like the findings of the previous studies (2, 5), preoperative imaging suggested an adnexal tumor, and definitive diagnosis was made only intraoperatively. The tumor size in our case is comparable to sizes reported across the literature, which typically range from 8–20 cm (3, 4, 7). Our findings reflected a recurring theme in the literature: imaging cannot always distinguish broad ligament leiomyomas from ovarian tumors, and surgical exploration remains essential for diagnosis and cure (3, 6, 7).

4. Conclusions

Broad ligament leiomyomas are rare but essential considerations when evaluating adnexal masses. Their atypical location leads to significant diagnostic challenges, even with advanced imaging. Surgical exploration remains the definitive diagnostic and therapeutic intervention. Complete excision yields excellent outcomes, and awareness of this condition can prevent unnecessary oophorectomy or radical surgery.

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Declaration of AI

No AI-assisted technology was used in the writing, analysis, or preparation of this manuscript.

Authors' Contribution

Aymane Ouriaghli: Contribution to the conception and design of the report; acquisition and interpretation of clinical data; drafting of the work. Benali Saad: Contribution to the acquisition and interpretation of clinical and imaging data; reviewing the work critically for important intellectual content. Alilou Ismail: Contribution to the interpretation of clinical data; reviewing the work critically for important intellectual content. Moukit Mounir: Contribution to interpretation of clinical data; reviewing the work critically for important intellectual content. Rahmoune Mohammed: Contribution to the acquisition and interpretation of clinical data; reviewing the work critically for important intellectual content. Kouach Jaouad: Contribution to the interpretation of data; reviewing the work critically for important intellectual content. Baba Habib Moulay Abdellah: Contribution to the supervision of case management and interpretation of clinical data; reviewing the work critically for important intellectual content. All authors have reviewed and approved the final manuscript and take responsibility for all aspects of the work, including questions regarding the accuracy or integrity of any part.

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Ethical Approval

Written informed consent was obtained from the patient for the surgical procedure and for the publication of this case report, including the use of intraoperative images. Patient confidentiality and anonymity have been preserved in accordance with the Declaration of Helsinki.

References

1. Gupta RK, Wasnik P. Extra-Uterine Fibroids. In Abduljabbar H. Fibroids. IntechOpen; 2021. doi: 10.5772/intechopen.95127.
2. Ghuge RS, Mitra K, Onkar P, Phatak S, Pantawane PB. Broad Ligament Fibroid Mimicking an Ovarian Tumor: A Case Report. Cureus. 2026;18(8):e113977. doi: 10.7759/cureus.113977. PubMed PMID: 42698771; PubMed Central PMCID: PMC13542675.
3. Tauro SR, Devi NP, Meetei LT, Sen S. Broad ligament fibroid-clinical presentation and surgical challenges: a case series. International Journal of Reproduction, Contraception, Obstetrics and Gynecology. 2025;14(11):3991–3994. doi: 10.18203/2320-1770.ijrcog20253549.
4. Lodhia J, Gaffur R, Sadiq A, Amsi P, Tsandiraki J, Maro E. Unusual case of broad ligament leiomyoma: A diagnostic and surgical challenge. Clin Case Rep. 2022;10(9):e6350. doi: 10.1002/ccr3.6350. PubMed PMID: 36177066; PubMed Central PMCID: PMC9474899.
5. Huang X, Yao Q, Wu YC, Liu SC. Diagnostic and surgical management of giant broad ligament myoma with cystic degeneration: a case report. World J Clin Cases. 2025;13(27):108923. doi: 10.12998/wjcc.v13.i27.108923. PubMed PMID: 40881898; PubMed Central PMCID: PMC12362462.
6. Song JY, Rotman C, Yordan EL. The Broad Ligament Fibroid. In Moawad N, editors. Uterine Fibroids. Switzerland: Springer, Cham; 2018. p. 217-34. doi: 10.1007/978-3-319-58780-6_11.
7. 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. doi: 10.1148/rg.287085095. PubMed PMID: 19001649.
8. Dave A, Patidar R, Mandloi N, Joshi R, Dave A. Bilateral giant broad ligament fibroids: a diagnostic and surgical dilemma! Indian Obstetrics & Gynaecology. 2017;7(3):30-32.
9. Yang XF, Tang M, Liu LL, Wei 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):715-718. doi: 10.31083/j.ceog.2021.03.2216.
10. Jena S, Sinha NK, Prasad A, Gopal K, Mallik J. Giant Broad Ligament Leiomyoma: A 10. Diagnostic and Surgical Challenge. Cureus. 2024;16(11):e72890. doi: 10.7759/cureus.72890. PubMed PMID: 39624552; PubMed Central PMCID: PMC11611425.