

Diagnostic Challenges of Broad Ligament Fibroids: Two Case Reports

Sholen Acharya [1*], Deepak Rath [2]
[1] Department of Obstetrics and Gynaecology, S.C.B. Medical College, Cuttack, Odisha, India
[2] Department of Rheumatology, SUM Ultimate Medicare, Bhubaneswar, Odisha, India

* Corresponding Author: **Sholen Acharya**

Article Info

ISSN (online): 2582-8940
Volume: 06
Issue: 03
July - September 2025
Received: 06-05-2025
Accepted: 04-06-2025
Published: 02-07-2025
Page No: 09-12

Abstract
Background: Broad ligament fibroids are rare extrauterine leiomyomas that can mimic adnexal or retroperitoneal masses, often leading to diagnostic and surgical challenges.
Case Presentation: We report two cases of broad ligament fibroids with distinct presentations. The first case involved a 42-year-old woman presenting with abdominal distension and a mass equivalent to 34 weeks' gestation. Imaging suggested a retroperitoneal or uterine mass; surgical exploration revealed a large right-sided broad ligament fibroid with cystic degeneration. The second case was a 70-year-old woman with anorexia, weakness, and renal dysfunction. Imaging showed a pelvic mass with mild left hydronephrosis. Surgical removal and histopathology confirmed a broad ligament fibroid with hyaline degeneration.
Conclusion: These cases highlight the diagnostic complexities of broad ligament fibroids, in differentiating them from ovarian or malignant pelvic masses. Early surgical intervention remains the definitive treatment, with intraoperative care essential to avoid injury to adjacent structures and to confirm diagnosis via histopathology.

DOI: https://doi.org/10.54660/IJMBHR.2025.6.3.9-12

Keywords: Broad Ligament Fibroid, Extrauterine Leiomyoma, Cystic Degeneration, Hyaline Degeneration, Ovarian Malignancy

Introduction

Uterine fibroids, or leiomyomas, are the most common benign tumours of the female reproductive tract, originating from smooth muscle cells of the myometrium. While intramural, submucosal, and subserosal fibroids are frequently encountered, broad ligament fibroids represent a rare and atypical variant. These arise from the smooth muscle fibers located within the broad ligament, either as true primary fibroids developing from smooth muscle remnants or as secondary extensions of uterine fibroids that grow laterally into the ligament [1].

Due to their location, broad ligament fibroids may present with unusual symptoms or remain asymptomatic until they reach a considerable size. Clinical presentation may include abdominal distension, pelvic mass, pressure effects on adjacent organs such as the bladder, rectum, or ureters, and rarely, systemic symptoms such as anorexia or fatigue. Large fibroids can mimic ovarian or retroperitoneal masses on imaging due to the displacement of pelvic anatomy. Imaging modalities including ultrasonography, computed tomography (CT), and magnetic resonance imaging (MRI) aid in preoperative assessment but may not definitively differentiate broad ligament fibroids from adnexal masses or malignancies. Surgical exploration remains essential not only for therapeutic relief but also for accurate diagnosis. Histopathological examination is necessary to confirm the benign nature of the tumor and to exclude rare instances of malignant transformation such as leiomyosarcoma

In this report, we present two cases of broad ligament fibroids with distinct clinical and intraoperative features, emphasising the diagnostic challenges, management approach, and surgical outcomes associated with this rare entity.

Case 1

A 42-year-old female, para 3, living 3, presented to the Gynaecology outpatient at a tertiary care centre, with a complaint of progressive abdominal distention for one year. Her menstrual cycles were regular. She had mild pallor on general examination, while her blood pressure, pulse, and respiratory rate were within normal limits. Systemic examination revealed no abnormalities.

Per abdominal (P/A) examination: A firm, smooth-surfaced, regular, non-tender mass corresponding to 34 weeks of gestation was palpated arising from the pelvis. There was no shifting dullness.

Per speculum (P/S) examination: The cervix and vagina appeared healthy.

Per vaginal (P/V) examination: The cervix was firm. A firm, non-tender mass was palpable in the pouch of Douglas, extending superiorly to the level of a 34-week uterine size. The mass could not be differentiated from the uterus.

Per rectal (P/R) examination: Normal findings.

Routine haematological investigations were within normal limits. Transabdominal ultrasonography revealed a large heterogeneous space-occupying lesion (SOL) with cystic spaces and necrotic areas extending bilaterally into the lumbar region from the epigastrium downwards, compressing the uterus and displacing bowel loops peripherally. Differential diagnoses included a retroperitoneal mass or an ovarian tumour.

Contrast-enhanced computed tomography (CECT) showed a minimally enhancing heterogeneous mass lesion measuring 20.5 × 7.6 × 5.5 cm, likely arising from the fundal part of the uterus, suggestive of either a large fibroid or a leiomyosarcoma.

Tumour markers, including CA-125, CEA, AFP, and LDH, were within normal limits.

Surgical exploration was planned. Intraoperatively, a large right-sided broad ligament fibroid (15 × 15 × 10 cm) was identified. The peritoneum and ureter were identified and carefully dissected and retracted laterally. The round ligament was isolated, and the fibroid, along with the uterus, cervix, and bilateral adnexa, was removed entirely by clamping, cutting, and ligating the uterine supports (Figure 1).

Histopathological examination confirmed the diagnosis of a broad ligament fibroid with cystic degeneration.

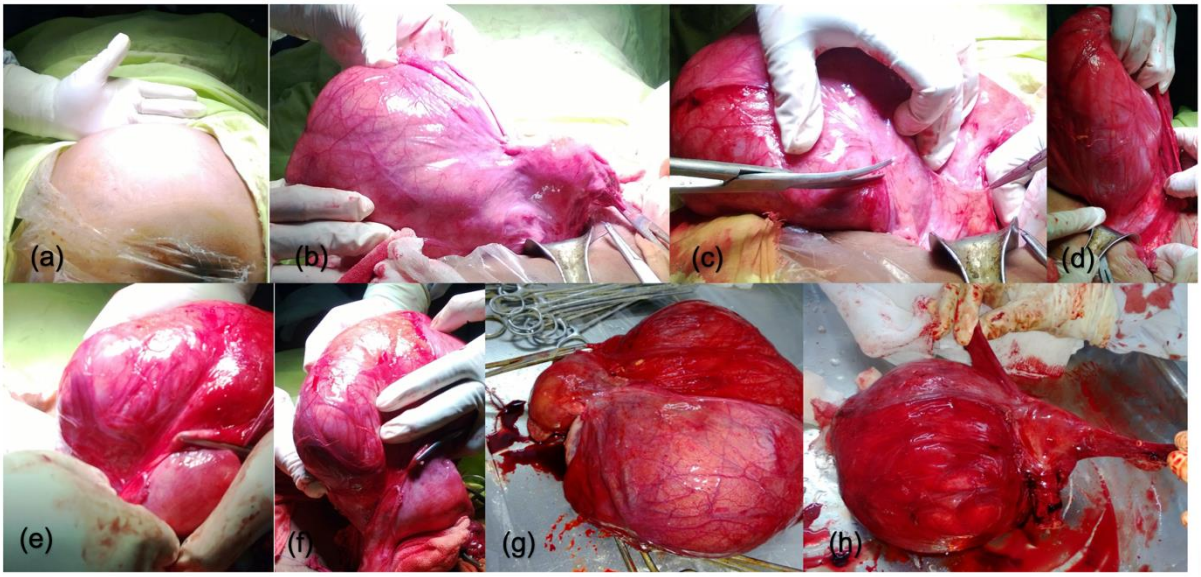


Fig 1: Intraoperative images demonstrating surgical steps in Case 1, (a) Per-abdominal image showing a large abdominopelvic mass corresponding to a 34-week gravid uterus, (b) Intraoperative view of the uterus with a large right-sided broad ligament fibroid, (c) The peritoneum is carefully deflected laterally along with the ureter to minimize risk of ureteric injury, (d) Thickened ureter visualized lateral to the fibroid, highlighting the importance of ureteric identification in large pelvic masses (e, f) Uterus along with the broad ligament fibroid being held and mobilised for en bloc removal, (g, h) Excised specimen showing the uterus with an attached broad ligament fibroid with prominent surface vasculature and cystic degeneration.

Case 2

A 70-year-old female presented with complaints of anorexia and generalised weakness for 15 days and loss of appetite for the past three months. On abdominal examination, a mass corresponding to 12 weeks of gestation was palpated in the left iliac region. It was firm to variable in consistency, fixed, non-tender, and the cervix was flush with the vaginal vault.

Ultrasound imaging revealed a heterogeneous, hypoechoic pelvic mass located posterior to the bladder, inseparable from the uterus, with indistinct visualisation of both ovaries. A CT scan reported a large exophytic uterine leiomyoma with possible mitotic changes and mild left-sided hydronephrosis. Renal function tests showed elevated serum urea and creatinine levels.

The patient underwent resection of a left-sided broad ligament fibroid along with total abdominal hysterectomy (Figure 2). Postoperatively, serum urea and creatinine normalised by day 8, indicating a relief of the obstructive uropathy. Histopathological evaluation confirmed a broad ligament fibroid with hyaline degeneration.

The patient had an uneventful recovery. Sutures were removed on postoperative day 8, and she was discharged on day 10 with a recommendation for nephrology follow-up due to preoperative renal involvement.

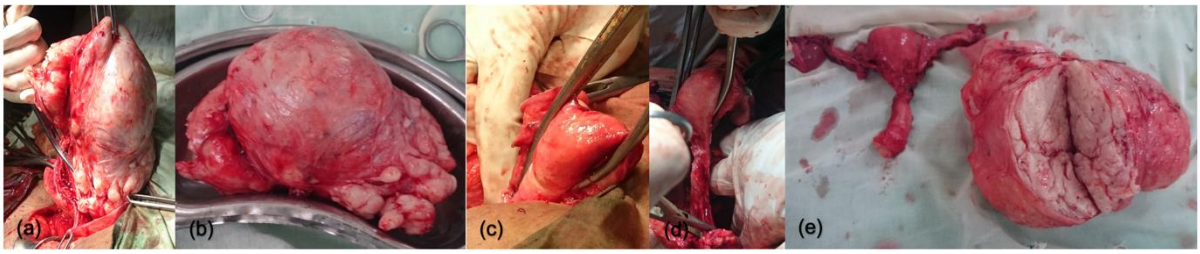


Fig 2: Intraoperative and specimen images of Case 2, **(a)** Broad ligament fibroid being elevated with the bladder carefully pushed downward to prevent injury, **(b)** Excised broad ligament fibroid showing well-encapsulated surface with lobulated contour, **(c, d)** Total abdominal hysterectomy performed following removal of the fibroid, **(e)** Postoperative specimen showing the uterus and broad ligament fibroid with a cut section revealing hyaline degeneration.

Discussion

Broad ligament fibroids are a rare form of extrauterine fibroids with an incidence of less than 1% [1]. Despite their rarity, they are the most common type of extrauterine fibroids. They arise from smooth muscle fibres in the broad ligament, separate from the uterine corpus. These fibroids present unique diagnostic challenges due to their location and potential to mimic other conditions, such as ovarian tumours or pregnancy. The complexity of the anatomy in the broad ligament area, which includes critical structures like the ureters and major blood vessels, further complicates diagnosis and surgical management. The presented cases highlight the varied clinical presentations, diagnostic dilemmas, and management strategies associated with these rare tumours.

In Case 1, the patient presented with a long-standing abdominal distension and a mass of 34 weeks' size, raising suspicion of an ovarian tumour or retroperitoneal mass due to the mass's large size and displacement of surrounding structures. Despite normal tumour markers (CA-125, CEA, AFP, LDH), imaging findings were inconclusive and suggested either a degenerating fibroid or malignancy such as leiomyosarcoma. Broad ligament fibroids often grow to large sizes before becoming symptomatic, due to the anatomical laxity of the broad ligament and absence of early pressure effects on surrounding organs [2-4]. The large fibroid was successfully excised along with the uterus and adnexa, and histopathology confirmed cystic degeneration, a common secondary change due to inadequate vascular supply in large fibroids [5].

In Case 2, the elderly patient presented with non-specific constitutional symptoms including anorexia and fatigue, along with a fixed pelvic mass and impaired renal function. Imaging revealed a mass indistinct from the uterus and compressing adjacent structures, leading to mild hydronephrosis and elevated renal parameters. It was misdiagnosed as ovarian malignancy due to a similar clinical presentation. But on laparotomy, it was diagnosed as a broad ligament fibroid. Postoperative normalisation of urea and creatinine values confirmed obstructive uropathy secondary to the fibroid's pressure effect. Hyaline degeneration, the most frequent form of fibroid degeneration, was identified histologically in this case. These degenerative changes can complicate imaging interpretation, often making the fibroid appear heterogeneous and suspicious of malignancy.

Broad ligament fibroids mimic other gynaecological pathologies like adnexal masses, ovarian malignancies or leiomyosarcoma. This is because clinically, patients present with symptoms such as abdominal pain, menstrual irregularities, or a palpable abdominal mass. These symptoms can be attributed to other gynaecological conditions [6]. Due to their location and degenerative changes, they are again mistaken for different pathologies. Ultrasonography may not delineate the origin of the mass due to displacement of uterine and ovarian structures. CT and MRI are superior in assessing pelvic masses' anatomical relations and vascularity and are instrumental in surgical planning. Nonetheless, even with advanced imaging, preoperative distinction between broad ligament fibroids and adnexal or retroperitoneal tumours can remain difficult, as seen in both cases and several other reported cases [7, 8].

Surgical management remains the mainstay of treatment, particularly for symptomatic, enlarging, or suspicious fibroids. Several studies have reported successful management using laparoscopy [9, 10], but both our cases underwent laparotomy due to the size and complexity of their fibroids. Intraoperatively, identification of the ureters and major pelvic vessels is critical, especially in large or degenerating fibroids that distort normal anatomy. Histopathological confirmation remains the gold standard for diagnosis and to exclude malignant transformation. Ultrasound-guided high-intensity focused ultrasound (HIFU) ablation has shown promising results in selected patients, with successful treatment reported in 12 cases of broad ligament fibroids measuring between 6 to 8 cm in diameter [11]. However, in the presence of larger or suspicious masses, surgical excision, either via laparotomy or laparoscopy, remains the most appropriate and effective therapeutic option.

Conclusion

Broad ligament fibroids, though rare, should be considered in the differential diagnosis of large pelvic masses, particularly when clinical findings and imaging are inconclusive. These tumours can attain significant size and cause compressive symptoms or mimic ovarian malignancies, posing diagnostic and surgical challenges. Early recognition and surgical intervention are essential not only for symptom relief but also to prevent complications such as obstructive uropathy, as illustrated in Case 2. Careful preoperative planning, intraoperative identification of adjacent structures, especially the ureters, and complete surgical excision are essential for optimal outcomes.

Acknowledgement

None

References

1. Song JY, Rotman C, Yordan EL. The broad ligament fibroid. In: Moawad NS, editor. Uterine fibroids.

Springer International Publishing; 2018. p. 217-34. doi:10.1007/978-3-319-58780-6_11.
2. Jha S, Singh A, Singh S, Murmu S. Huge broad ligament leiomyoma with cystic degeneration: a diagnostic and surgical challenge. J Obstet Gynaecol. 2020;46(5):791-4. doi:10.1111/jog.14213.
3. Gowri V, Sudheendra R, Oumachigui A, Sankaran V. Giant broad ligament leiomyoma. Int J Gynecol Obstet. 1992;37(3):207-10. doi:10.1016/0020-7292(92)90383-T.
4. Jena S, Sinha NK, Prasad A, Gopal K, Mallik J. Giant broad ligament leiomyoma: a diagnostic and surgical challenge. Cureus. 2024 Nov 2. doi:10.7759/cureus.72890.
5. Cramer SF, Patel A. The frequency of uterine leiomyomas. Am J Clin Pathol. 1990;94(4):435-8. doi:10.1093/ajcp/94.4.435.
6. Verma K, Kumari S. A rare case of broad ligament fibroid: a case report. J SAFOMS. 2019;7(1):37-41. doi:10.5005/jp-journals-10032-1168.
7. Barkale RS, More VS, Kulkarni S, Changede P, Ramugade A. A case of large broad ligament fibroid imitating ovarian tumor. Int J Sci Res. 2023 Dec:67-8. doi:10.36106/ijsr/5305655.
8. Dulewad S, Chandak P. A case report on broad ligament fibroid mistaken as pregnancy. Int J Reprod Contracept Obstet Gynecol. 2019;8(11):4573. doi:10.18203/2320-1770.ijrcog20194897.
9. Bahall V, De Barry L. Laparoscopic management of a true broad ligament leiomyoma in a patient with advanced endometriosis and a solitary kidney – a case report and literature review. Case Rep Womens Health. 2022;36:e00436. doi:10.1016/j.crwh.2022.e00436.
10. Theodoridis TD, Zepiridis L, Grimbizis G, Bontis J. Laparoscopic management of broad ligament leiomyoma. J Minim Invasive Gynecol. 2005;12(6):469. doi:10.1016/j.jmig.2005.09.016.
11. Wang Y, Xu Y, Wong F, Wang Y, Cheng Y, Yang L. Preliminary study on ultrasound-guided high-intensity focused ultrasound ablation for treatment of broad ligament uterine fibroids. Int J Hyperthermia. 2021;38(2):18-23. doi:10.1080/02656736.2021.1921287.

Copyright and License
© 2025 The Author(s). Authors retain the copyright of their published articles.
This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution NonCommercial-ShareAlike 4.0 International (CC BY-NC-SA 4.0) License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.
Deed - Attribution-NonCommercial-ShareAlike 4.0 International - Creative Commons