

Case Report

Recurrent Giant Cystic Leiomyoma with Bilateral Ovarian Hemorrhagic Cysts Mimicking Malignancy in a Young Woman: A Diagnostic and Surgical Challenge

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ABSTRACT

Uterine leiomyomas are the most common benign tumors of the female genital tract and may undergo secondary degenerative changes, including cystic degeneration, which can lead to diagnostic confusion with malignancy, particularly when associated with rapid growth and adnexal masses. We report a rare case of a young nulliparous woman with a History of prior myomectomy who presented with massive abdominopelvic masses, radiological suspicion of Leiomyosarcoma, and extra-uterine Leiomyomatous involvement. Definitive diagnosis was established only after exploratory laparotomy and histopathological examination.

Key words: Leiomyoma, cystic degeneration, adnexal mass, malignancy

INTRODUCTION

Uterine fibroids are estrogen-dependent benign smooth muscle tumors affecting up to 70% of women of reproductive age.¹ Cystic degeneration is an uncommon variant, occurring in approximately 4% of leiomyomas, and may present as large heterogeneous masses on imaging, often mimicking ovarian tumors or uterine sarcomas.^{2,3} The coexistence of large fibroids with adnexal masses and extra-uterine leiomyomas further complicates preoperative diagnosis.^{4,5} We present a challenging case of recurrent giant cystic leiomyoma with Bilateral ovarian haemorrhagic cysts and an abdominal wall leiomyoma in a young woman.

CASE PRESENTATION

A 26-year-old nulliparous woman, married for 10 months, with a history of open myomectomy for a large fundal fibroid with cystic degeneration (July 2022), presented with progressive abdominal pain and distension.

Four months post-myomectomy, she developed heavy menstrual bleeding and abdominal pain. Ultrasonography revealed a left lateral wall fibroid measuring 5.6 × 4.8 × 6.4 cm, for which she was started on Ulipristal acetate 10 mg daily for 3 months after normal liver function tests.

She was subsequently diagnosed with Pulmonary tuberculosis. HRCT performed during evaluation revealed a Left tubo-ovarian mass measuring 7.6 × 10 × 9 cm with abdominal lymphadenopathy and ascites, suggestive of a tubercular etiology. She completed 9 months of anti-tubercular therapy; however, symptoms progressed.

MRI abdomen and pelvis demonstrated 17.4 × 5.6 × 16.7 cm mass arising from the uterine fundus suspicious for leiomyosarcoma with possible anterior abdominal wall deposits, highlighting the limitations of imaging in differentiating benign degenerative leiomyomas from sarcomas.^{6,7,8} She was advised Exploratory laparotomy but was lost to follow-up.

She re-presented in October 2025 with abdominal pain, bloating, and amenorrhea. Examination revealed a 36-week size cystic mobile mass. Exploratory laparotomy revealed:

1. Large left ovarian cyst (25 × 10 × 15 cm) with stretched fallopian tube and sigmoid colon adherent posteriorly
2. Right para-ovarian cyst (15 × 10 × 8 cm) with normal right ovary and fallopian tube
3. Giant fundal fibroid (~ 30 cm) with cystic degeneration
4. Dense adhesions involving omentum and bowel

Figure 1, 2, 3 reveals Gross anatomy of the specimen.

Approximately 2.5 L and 900 mL cystic fluid were drained from left and right cysts respectively and sent for cytology.

Given extensive disease, Total Abdominal Hysterectomy with Bilateral Salpingo-oophorectomy was performed. Figure 4 shows the Post hysterectomy specimen. A 1-cm Leiomyomatous nodule

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over rectus muscle was excised, consistent with extra-uterine leiomyoma.⁹

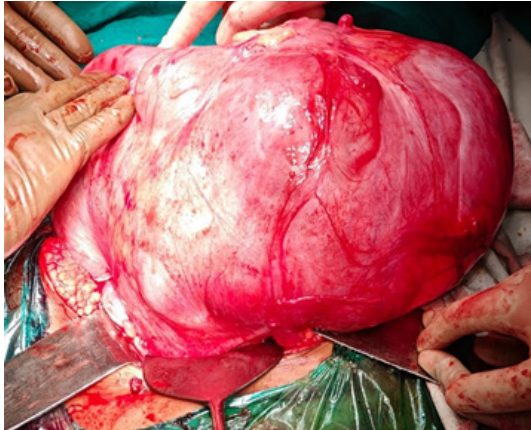


Figure 1: Anterior view of large Left ovarian cyst merging with large cystic fibroid

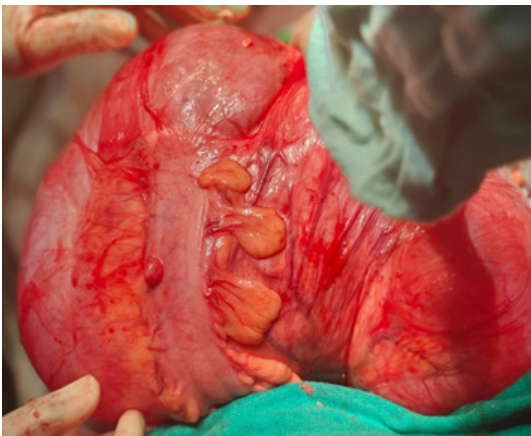


Figure 2: Posterior view of Left ovarian cyst with adherent sigmoid colon over it with Right ovarian cyst with Cystic degenerated fibroid.



Figure 3: Stretched out Left fallopian tube over Left ovarian cyst

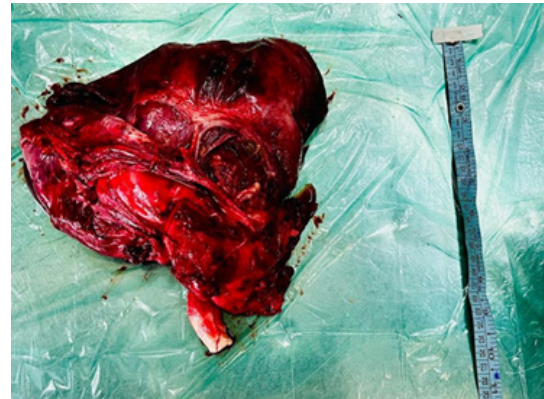


Figure 4: Specimen of uterine fibroid with Total Abdominal Hysterectomy with Bilateral Salpingo-oophorectomy following Bilateral cyst aspiration.

HISTOPATHOLOGY

- Uterus: Leiomyoma with Cystic degeneration
- Bilateral Ovaries: Hemorrhagic cysts
- Bilateral fallopian tubes: Unremarkable
- Rectus nodule: Leiomyoma

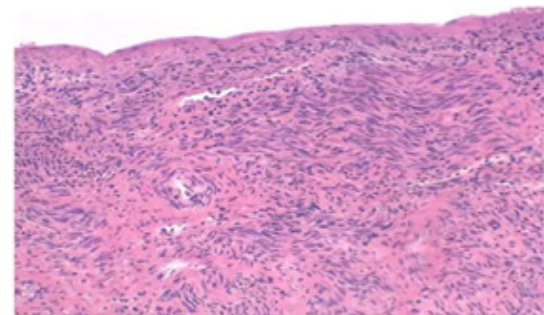


Figure 5: Histopathology of uterine fibroid showing interlacing bundles of smooth muscle cells with Cystic degenerations.

Immunohistochemistry showed Estrogen receptor positivity, supporting hormone-dependent benign pathology.^{10,11} Cytology was negative for malignancy.

DISCUSSION

Uterine leiomyomas are common benign estrogen-dependent tumors that may present with atypical features such as massive size, cystic degeneration, and extra-uterine spread, creating diagnostic challenges.

Cystic degeneration may produce heterogeneous imaging findings, mimicking ovarian tumors or uterine sarcomas. In this case, rapid recurrence, adnexal masses, and suspected deposits raised suspicion of malignancy.

The coexistence of ovarian cysts and fibroids reflects a shared hormonal milieu rather than causation. These cysts can obscure the organ of origin, complicating diagnosis.

Extra-uterine leiomyomas are increasingly reported, especially after prior uterine surgery, due to iatrogenic implantation or metaplasia.

Leiomyomatosis Peritonealis Disseminata (LPD) was considered due to the patient's young age, ER positivity and prior surgery; however, absence of diffuse peritoneal nodules excluded this diagnosis.¹²

Immunohistochemistry plays a key role in differentiation. Leiomyomas show ER/PR positivity with low proliferative indices, whereas Leiomyosarcomas exhibit high Ki-67 and p16/p53 overexpression correlating with aggressive biological behavior.^{13,14}

Although PR, Ki-67, p16, and p53 were not performed in the present case, the absence of cytological atypia, tumor necrosis, increased mitotic activity, and the concordant benign histopathological findings across uterine, ovarian, and extra-uterine lesions, together with ER positivity, strongly supported a Benign leiomyomatous process.

This case highlights the importance of integrating clinical, radiological, and pathological findings to avoid overtreatment.

CONCLUSION

Giant cystic leiomyomas with associated ovarian cysts and extra-uterine lesions can closely mimic malignancy. Imaging alone is insufficient for diagnosis.

Comprehensive surgical evaluation and histopathological confirmation remain the cornerstone of definitive diagnosis in such complex presentations. Immunohistochemistry, especially Estrogen receptor analysis, is crucial in distinguishing benign from malignant pathology.

Awareness of such presentations can prevent misdiagnosis and unnecessary radical treatment.

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