Primary Ovarian Leiomyoma Diagnosed during Emergency Caesarean Section For Severe Early-onset Pre-eclampsia

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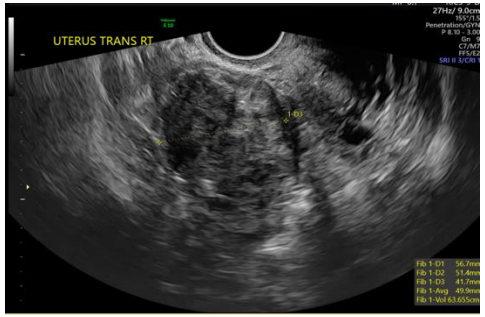
Background

Primary ovarian leiomyoma is a rare benign ovarian tumour representing less than 1% of benign ovarian neoplasms. Its clinical and radiological features frequently overlap with more common pelvic masses, particularly pedunculated uterine leiomyomas, making preoperative diagnosis difficult.

Discussion

- Primary ovarian leiomyomas are rare benign smooth muscle tumour, and most cases are asymptomatic and diagnosed incidentally following surgery.[1]
- Preoperative diagnosis is challenging because imaging features often overlap with pedunculated uterine leiomyomas, ovarian fibromas and other solid adnexal masses. In pregnancy, distortion of pelvic anatomy by the enlarging uterus further limits accurate localisation of adnexal lesions.[1,2]
- In this case, serial ultrasound examinations consistently interpreted the lesion as a pedunculated fibroid despite progressive enlargement and normal tumour markers. The diagnosis only became apparent following direct intraoperative assessment at emergency caesarean section.
- Histopathological examination with immunohistochemistry confirmed ovarian leiomyoma and excluded fumarate hydratase-deficient leiomyoma.
- This case highlights the importance of maintaining a broad differential diagnosis for enlarging solid adnexal masses during pregnancy and demonstrates the value of multidisciplinary intraoperative decision-making and definitive histopathological assessment.



USS in Dec 2024- 57 x 51 x 42mm pedunculated fibroid R) adnexa

USS at k32+0 (Mar 2026)– reported as 86x91x79mm subserosal R) lateral wall fibroid

Take home messages

- ✓ Primary ovarian leiomyoma is an uncommon but important differential for a solid adnexal mass.
- ✓ Pregnancy may obscure the true origin of pelvic masses on ultrasound.
- ✓ Serial imaging and normal tumour markers cannot reliably distinguish ovarian leiomyoma from a pedunculated fibroid.
- ✓ Histopathology with immunohistochemistry remains the diagnostic gold standard.
- ✓ Intraoperative assessment may alter surgical management when unexpected adnexal pathology is encountered.

References

1. Pervan M, Gembicki M, Princk H, Rody A, Hanker L, Hemptenmacher F, et al. Primary ovarian leiomyoma: a rare ovarian tumour. Arch Gynecol Obstet. 2023;308(4):1379-80.
2. Liang G, Wu Z, Zhu L, Ruan F. Case report: primary ovarian leiomyoma: a clinical analysis of case series and literature review. Front Med (Lausanne). 2022;9:822339.

Case outline

Feb 2024 – Pelvic USS
Bulky fibroid uterus measuring 11 × 5 × 7 cm with multiple fibroids, the largest being a 5 cm right-sided subserosal fibroid. Normal right ovary.

July 2024 – Pelvic USS
Heterogenous solid right ovarian mass measuring ~5cm with enlargement of right ovary

Dec 2024 – Pelvic USS + Tumour markers
Tumour markers – Ca 125, CA 19.9, He4/ ROMA – normal
Pelvic USS - previously identified right adnexal lesion is a pedunculated fibroid measuring 5.7 cm, with the right ovary visualised separately and appearing normal

Serial antenatal imaging 2025-2026
Demonstrated progressive enlargement of the presumed right lateral wall fibroid, measuring up to 9 cm during pregnancy

Emergency CS for severe PET at k32+1
Incidental finding of large right ovarian mass ~9 x 7x 6cm
Right sided salpingo-oopherectomy + peritoneal washings performed

Histopathology
Ovarian leiomyoma involving the right ovary and fallopian tube
Immunohistochemistry-> retained fumarate hydratase (FH) expression with negative 2SC staining. This pattern excluded fumarate hydratase-deficient leiomyoma