

AMSER Case of the Month

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Enlarging Adnexal Mass in Pregnancy

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Patient Presentation

- **HPI:** 27-year-old G1P0 female at 21 weeks gestation presenting for follow-up MRI of a left ovarian cyst, initially discovered incidentally on an 8-week dating ultrasound. Pregnancy has otherwise been uncomplicated. Serial ultrasounds over the course of the pregnancy demonstrated interval growth of the cyst along with the appearance of a heterogenous, vascular solid component, prompting MRI for further characterization. She reports intermittent mild left-sided pelvic pain but is otherwise asymptomatic.
- **PMHx:** Chronic immune thrombocytopenia (ITP) and von Willebrand disease, both diagnosed in childhood; painful menses as a teenager, controlled with OCPs; pathology-confirmed endometriosis following prior excision of umbilical cyst
- **Vitals:** BP 102/62, Temp 96.8F, BMI 26.0 kg/m²
- **Physical Exam:** Well-appearing, no acute distress; unremarkable including gynecologic exam

Pertinent Labs

- CA-125: 8 (ref <35)
- Platelets: 136 (L) (ref 150-400)
- Hemoglobin: 12.9 (ref 12.0-15.5)
- Hematocrit: 40.5% (ref 36-46%)

What Imaging Should We Order?

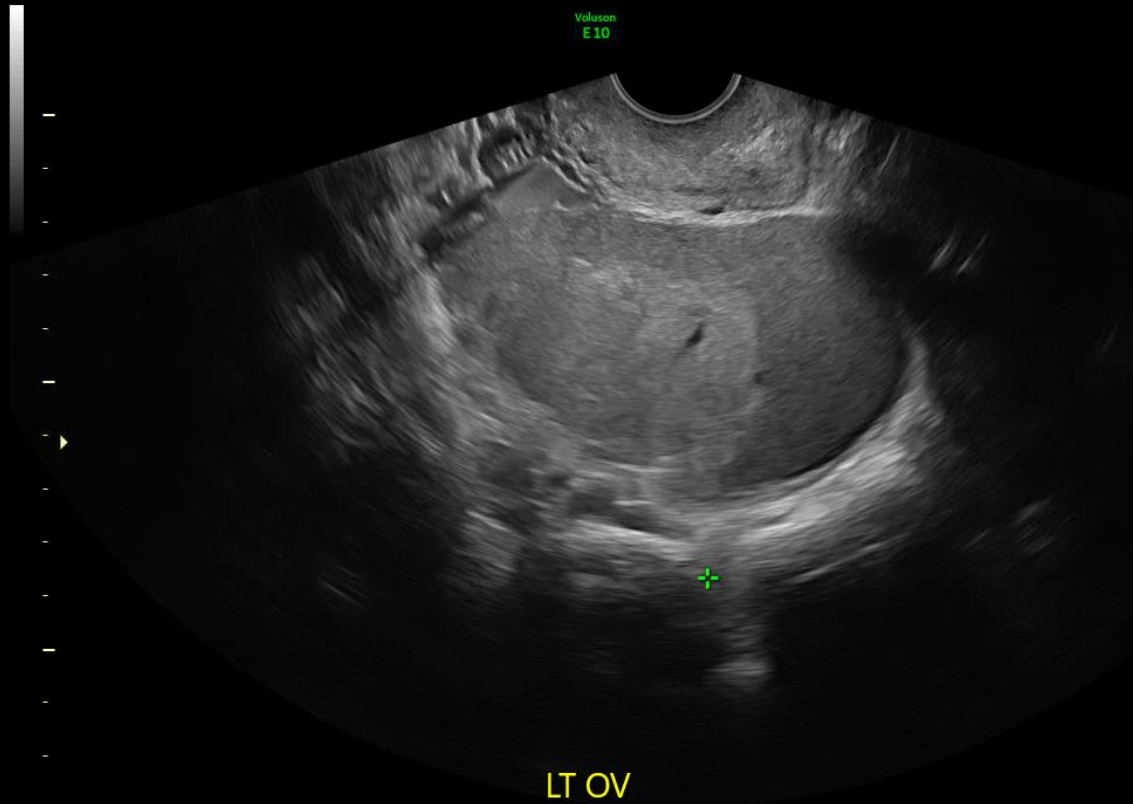
Select the applicable ACR Appropriateness Criteria

Variant: 9 Female . Adnexal mass, indeterminate on initial pelvic US, no acute symptoms. Pregnant. Next imaging study for characterization.

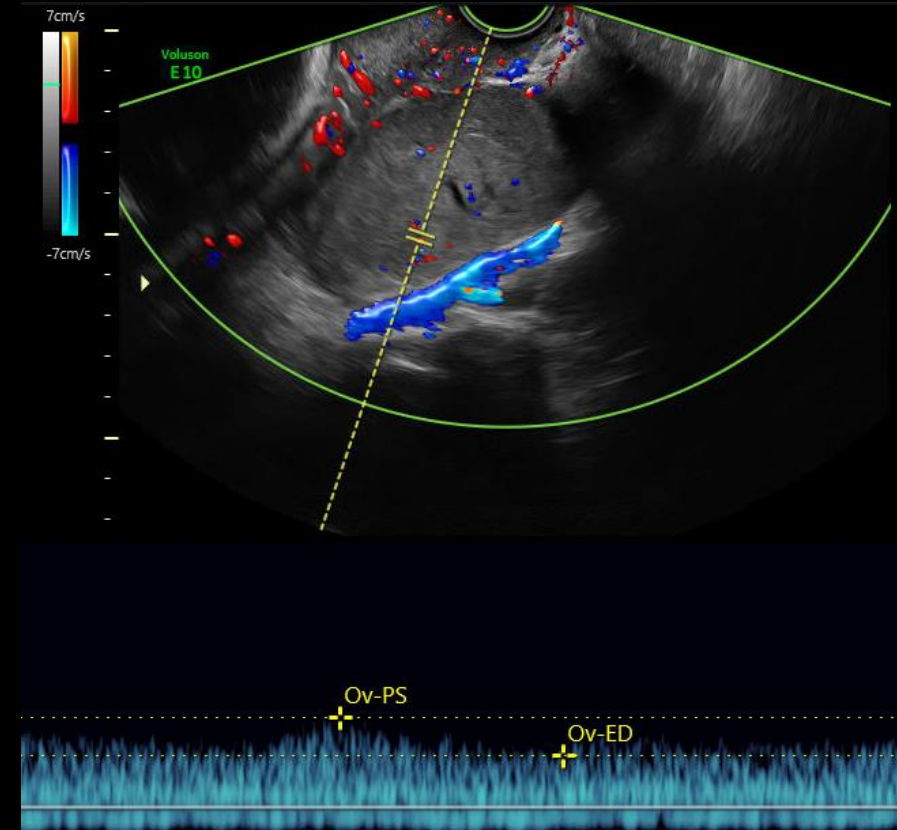
Procedure	Appropriateness Category	Relative Radiation Level
MRI pelvis without IV contrast	Usually Appropriate	○
MRI pelvis without and with IV contrast	Usually Not Appropriate	○
CT pelvis with IV contrast	Usually Not Appropriate	⊗⊗⊗
CT pelvis without IV contrast	Usually Not Appropriate	⊗⊗⊗
CT pelvis without and with IV contrast	Usually Not Appropriate	⊗⊗⊗⊗
FDG-PET/CT skull base to mid-thigh	Usually Not Appropriate	⊗⊗⊗⊗⊗

**No contrast was administered due to patient's current pregnancy.¹

Findings (unlabeled) – Initial Ultrasound

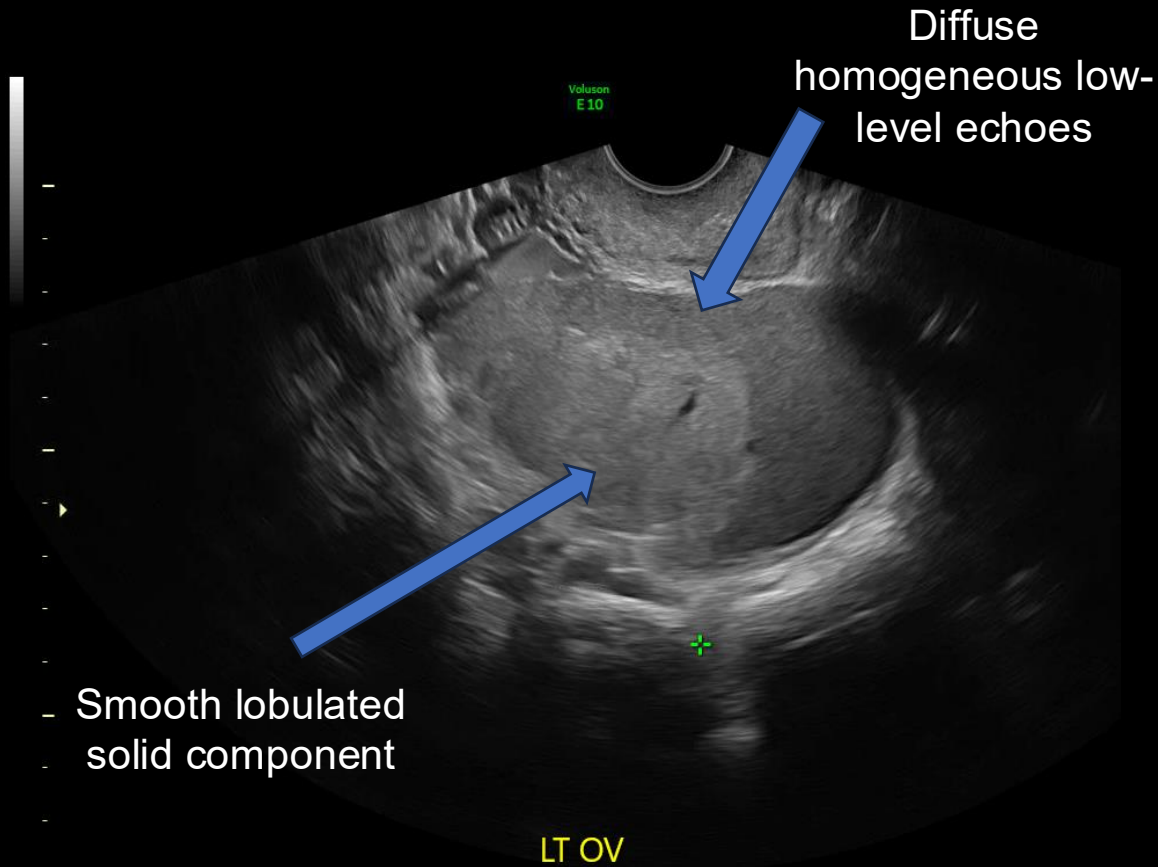


Long Axis Transvaginal Ultrasound (TVUS)

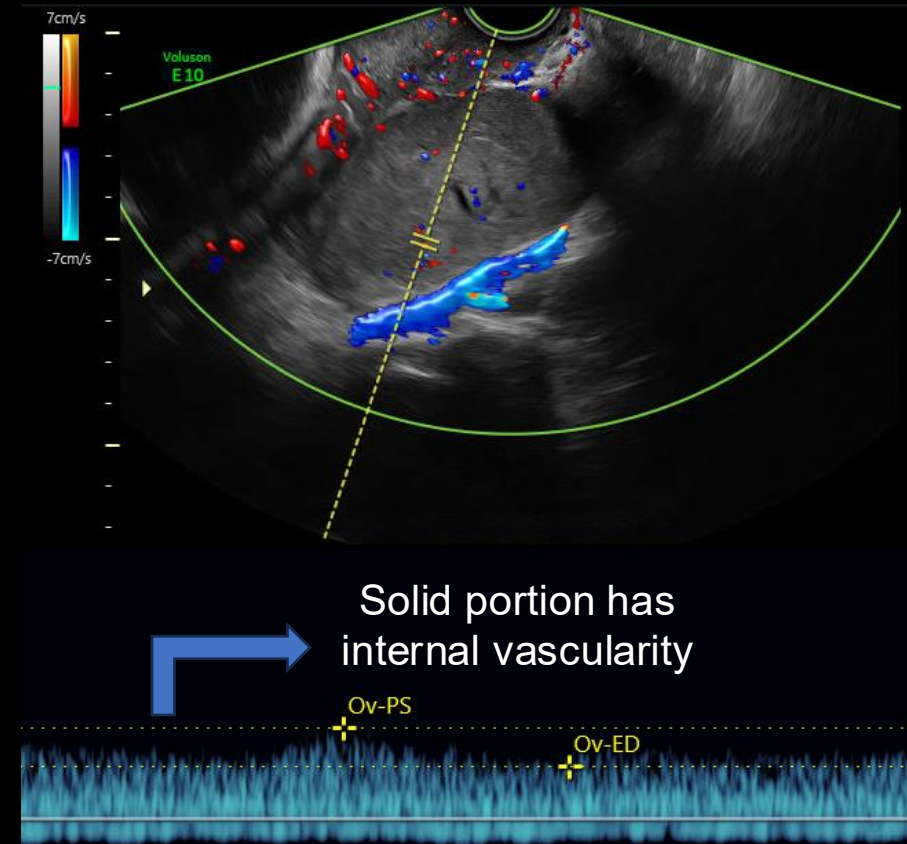


Long Axis TVUS with Doppler

Findings (labeled) – Initial US

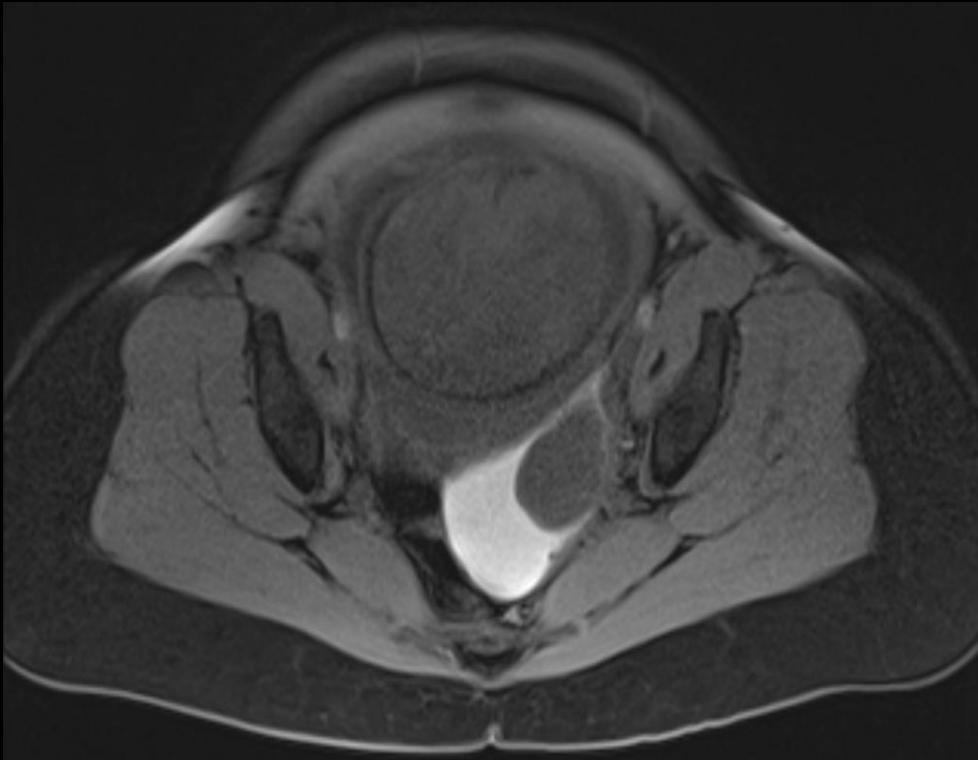


Long Axis TVUS

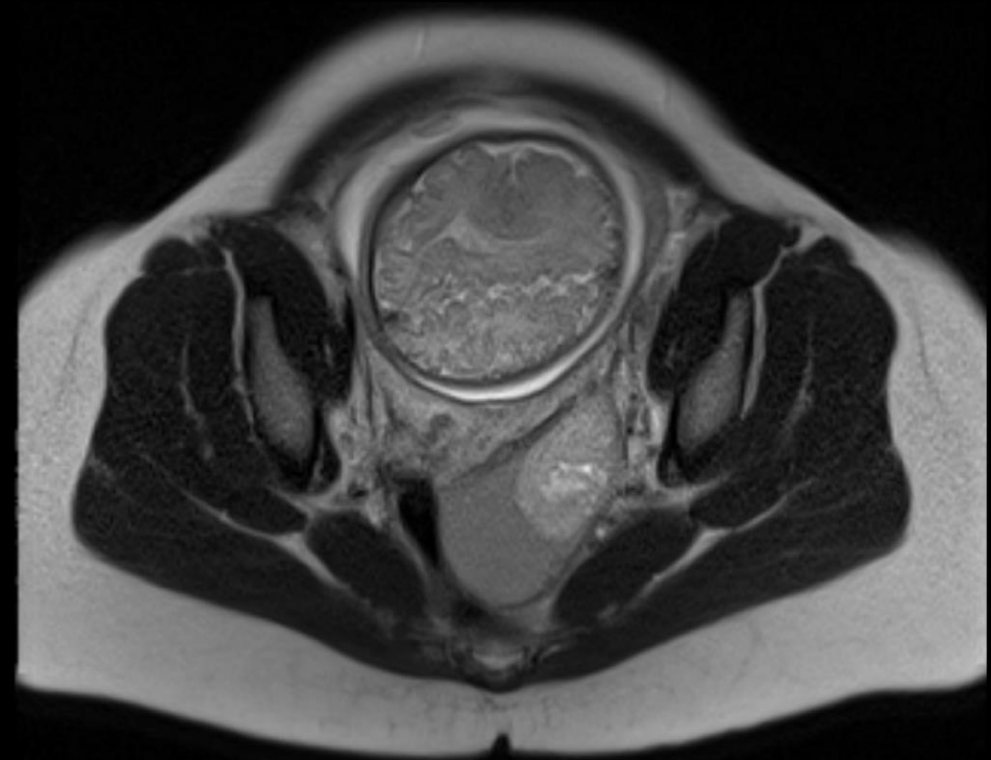


Long Axis TVUS with Doppler

Findings (unlabeled) – Initial MRI

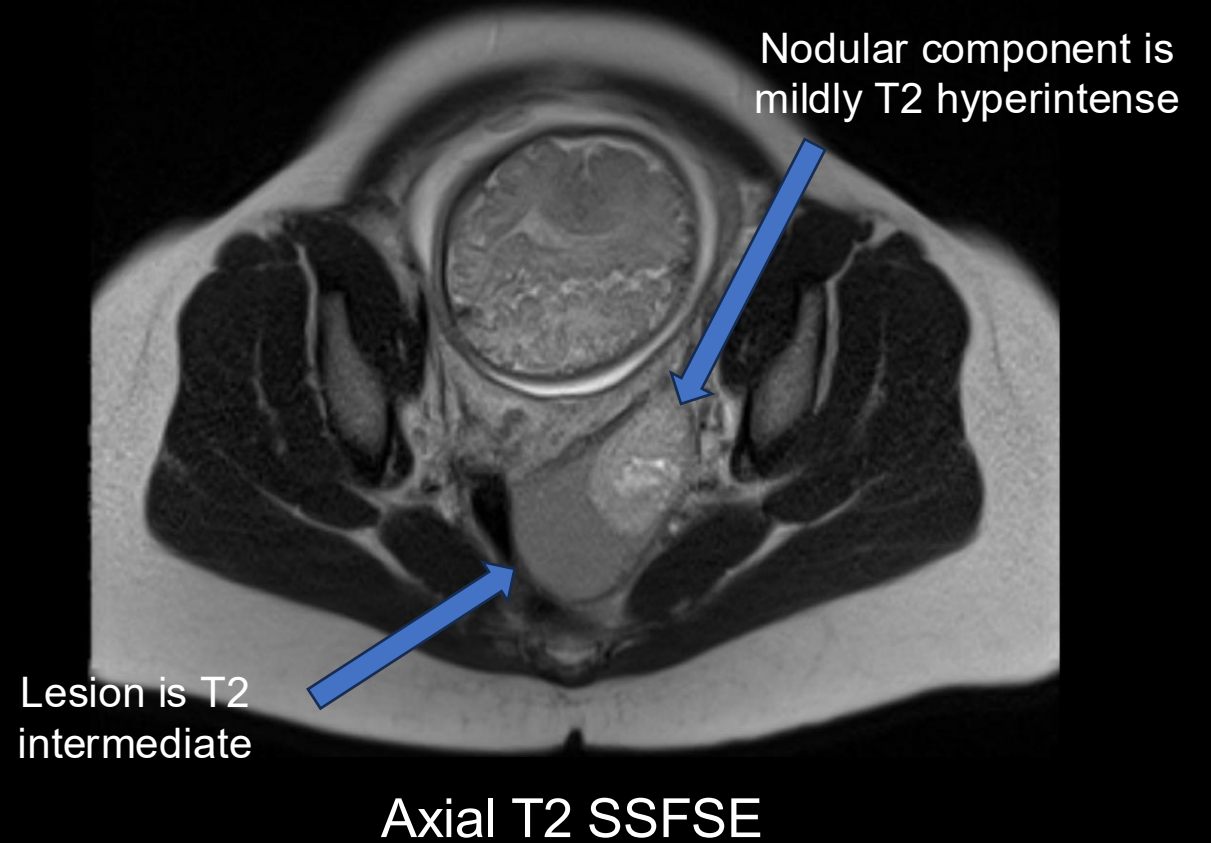
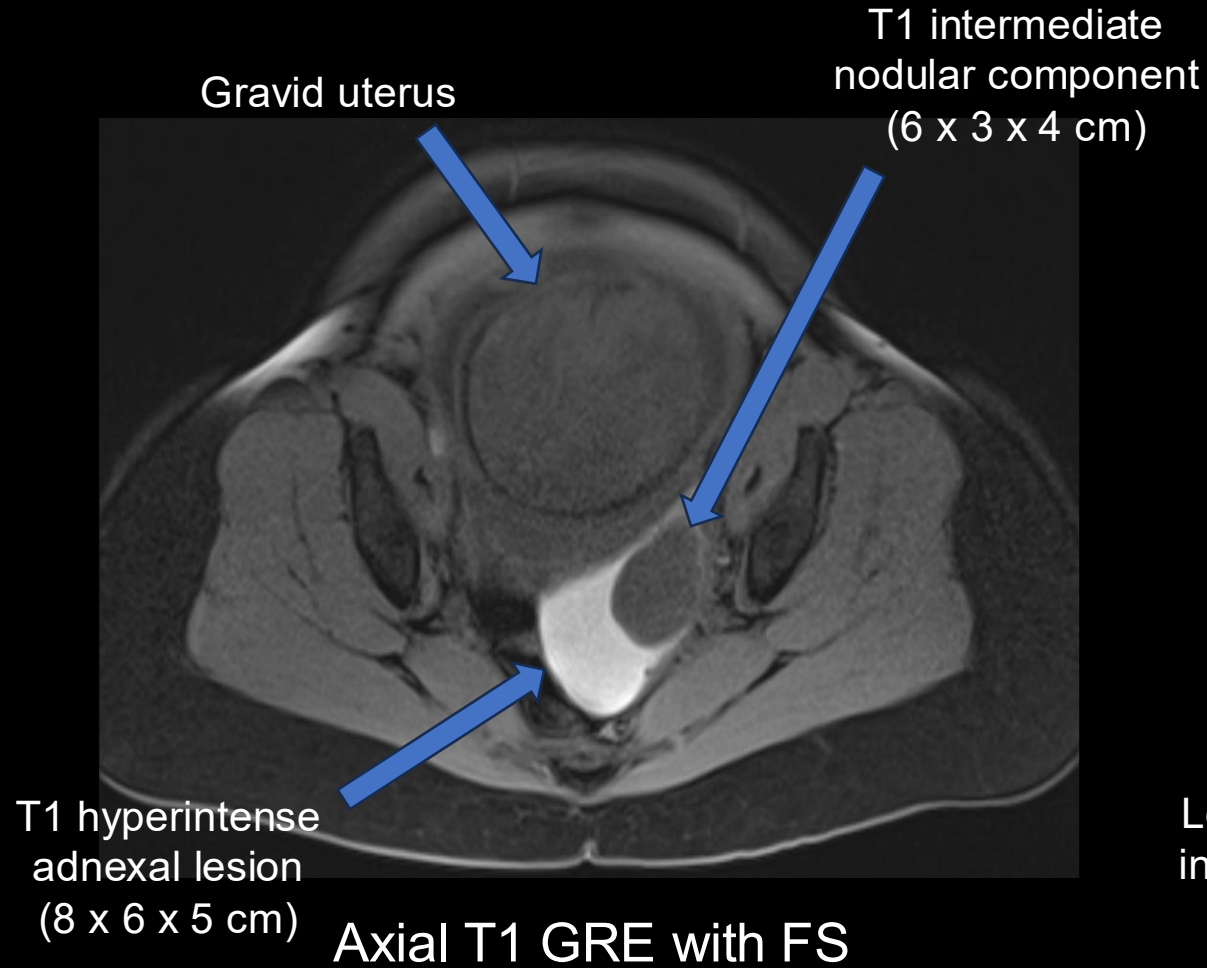


Axial T1 GRE with FS

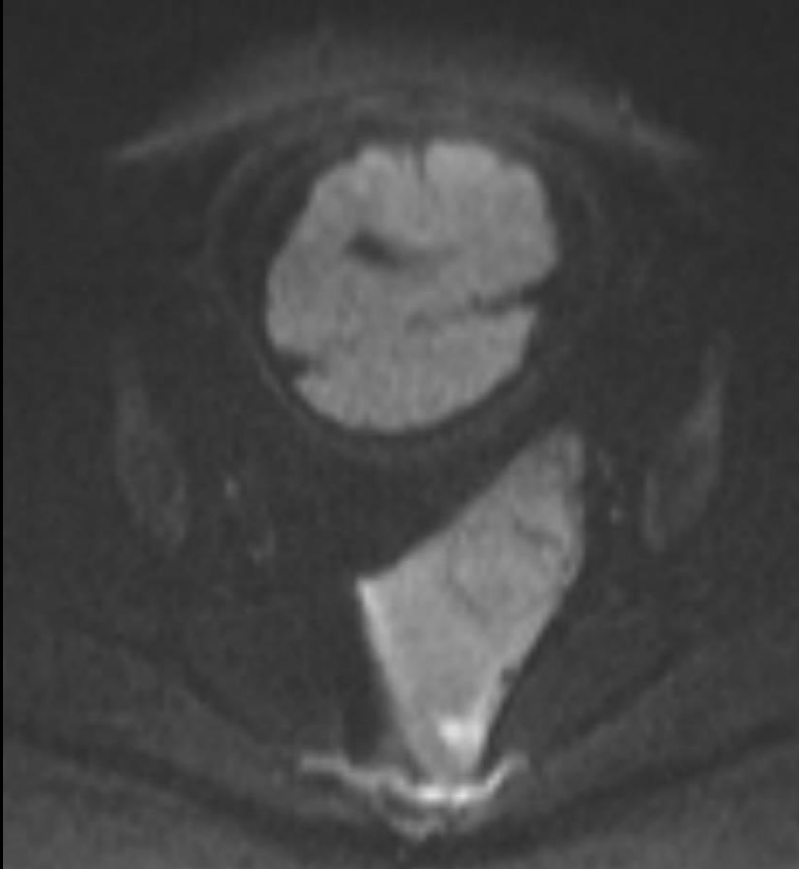


Axial T2 SSFSE

Findings (labeled) – Initial MRI



Findings (labeled) – Initial MRI



Axial B1000

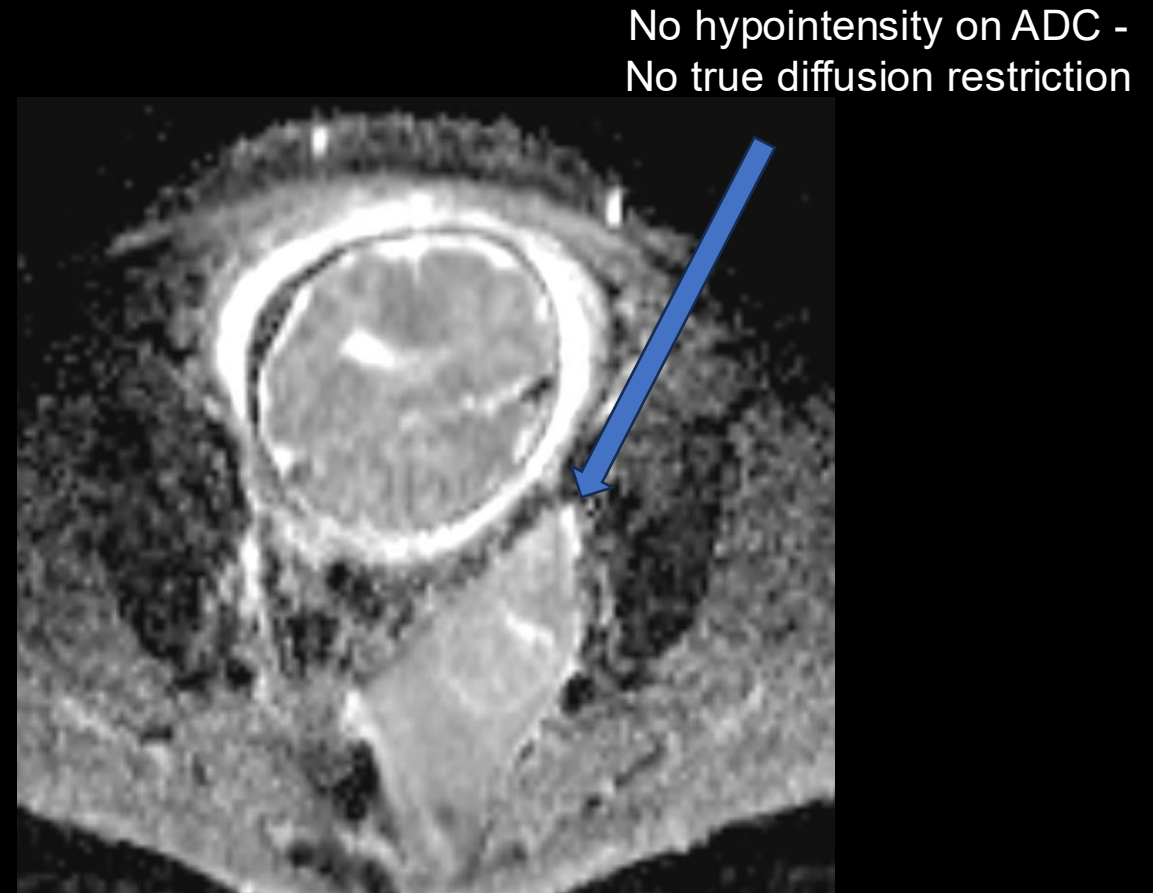


Axial ADC

Findings (labeled) – Initial MRI

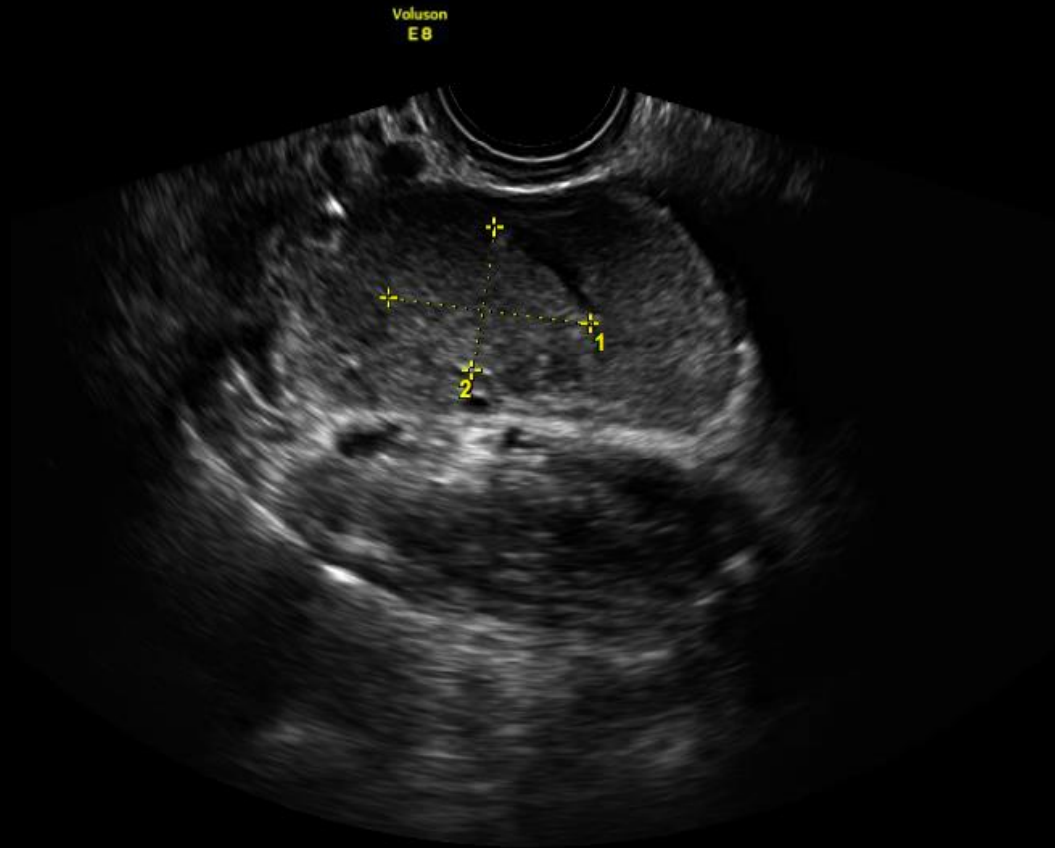


Axial B1000



Axial ADC

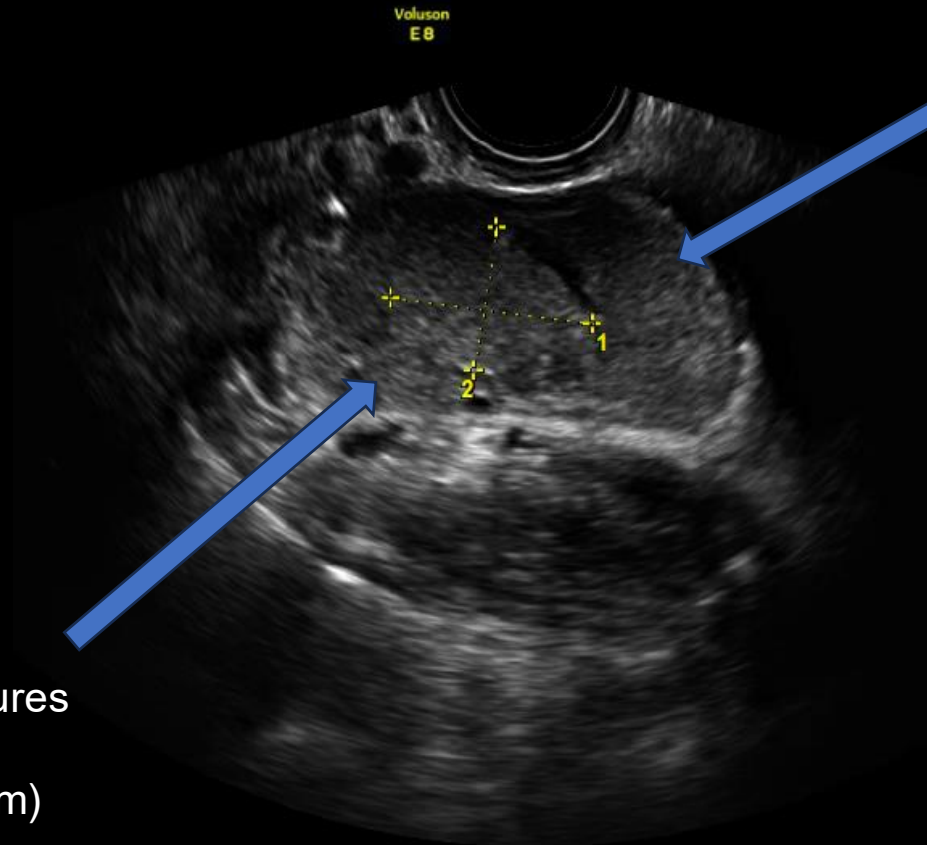
Findings (unlabeled) – Postpartum TVUS



Long Axis TVUS

LTOV

Findings (labeled) – Postpartum TVUS



Lesion with homogeneous low-level echoes; measures 6 x 6 x 4 cm (previously 8 x 6 x 5 cm)

Long Axis TVUS

Solid component measures 3 x 2 x 2 cm (previously 6 x 3 x 4 cm)

Final Dx:

Decidualized endometrioma

Management, Surgery & Pathology

- Managed expectantly during pregnancy, CA-125 deferred antenatally given unreliable interpretation in pregnancy
- Postpartum imaging showed progressive decrease in size with resolution of solid component
- Elective laparoscopic left ovarian cystectomy performed postpartum
 - Intraoperative findings: ~5 cm hemorrhagic cyst replacing the left ovary
 - Pathology: endometriotic cyst with extensive pigmented/foamy histiocyte accumulation – no evidence of malignancy

Clinical Discussion

- Endometriosis affects ~10% of reproductive-age women; progesterone-induced decidualization in pregnancy can affect both ovarian endometriomas and peritoneal implants^{2,3,4}
- Decidualization causes vascularized, lobulated mural nodules that mimic malignancy and is reported in ~16% of endometriomas^{2,4,5,8,9}
- Doppler will show low-resistance internal vascularity⁴⁻⁶
- MRI will show lobulated nodules with high ADC (T2 shine-through) rather than true restriction. The solid component is isointense to the decidualized endometrium.⁴⁻⁶
- Malignant transformation within an endometrioma is a key differential but is exceedingly rare^{7,8,9}
- Rare malignant transformation (most commonly clear cell carcinoma) may appear multiloculated with irregular enhancing mural nodules¹⁰
- Endometriomas generally regress during pregnancy and postpartum and can be conservatively managed with interval imaging⁷⁻⁹

Case Summary

- 27F with ITP/vWD with left ovarian cyst found incidentally at 8 weeks pregnant
 - Showed interval growth and development of new vascular solid component
- Managed conservatively with serial US/MRI and gynecologic oncology involvement; no intervention during pregnancy
- Postpartum: progressive decrease in size, resolution of solid component
- Elective laparoscopic cystectomy postpartum confirmed benign endometriotic cyst with resolved solid component
- Decidualization is a benign mimicker of malignancy that typically occurs during pregnancy and will regress on post-partum follow-up imaging

References:

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