

AMSER Case of the Month: April 2023

HPI: 26 y.o. F G3P2002 presents for transfer of care
after vaginal bleeding episode.

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Patient Presentation-Subjective

- HPI: 26 y.o. F G3P2002 at 31w0d with a previous vaginal bleeding episode presents for transfer of care for placenta previa on an outside facility ultrasound (images unavailable). Report raised concern for placenta accreta.
- PMHx/PSHx: No past medical history on file. Past surgical history includes two cesarean sections.
- OBHx: G3P2002. G1: Term c-section for FTP (failure to progress) at 4cm. G2: Scheduled repeat c-section.
- A full 12-point review of system was negative.

Patient Presentation-Objective

- Vitals: BP 112/50, HR 124, Height 162.6cm, Weight 138.8 Kg, BMI 52.52 Kg/m².
- Physical exam: NAD (No Abnormality Detected)
- Pertinent Labs: RPR nonreactive, GLT (Glucose Loading Test) 114, HIV neg, Hep B neg, TSH 2.6, Hct 37, Plt 203, nl pap, neg gonorrhea/chlamydia screen.

What Imaging Should We Order?

Select the applicable ACR Appropriateness Criteria

This imaging modality was ordered by the physician



Variant 2: High risk for placenta accreta spectrum disorder. Initial imaging.

Procedure	Appropriateness Category	Relative Radiation Level
US duplex Doppler pregnant uterus	Usually Appropriate	0
US pregnant uterus transabdominal	Usually Appropriate	0
US pregnant uterus transvaginal	Usually Appropriate	0
MRI abdomen and pelvis without IV contrast	May Be Appropriate	0
MRI abdomen and pelvis without and with IV contrast	Usually Not Appropriate	0



Findings (report)*

- Complete anterior placenta previa.
- Small number of placenta lacunae.
- Hypervascularization at the placental-uterine site.
- Thinning at the interface between the placenta/uterus/ bladder interface.

*Note: US done at an outside facility.
Images unavailable.

Findings (report)

- US exam extremely limited by poor acoustics due to the patient's weight and lateral position of the placenta.

What Other Imaging Should We Order?

Select the applicable ACR Appropriateness Criteria

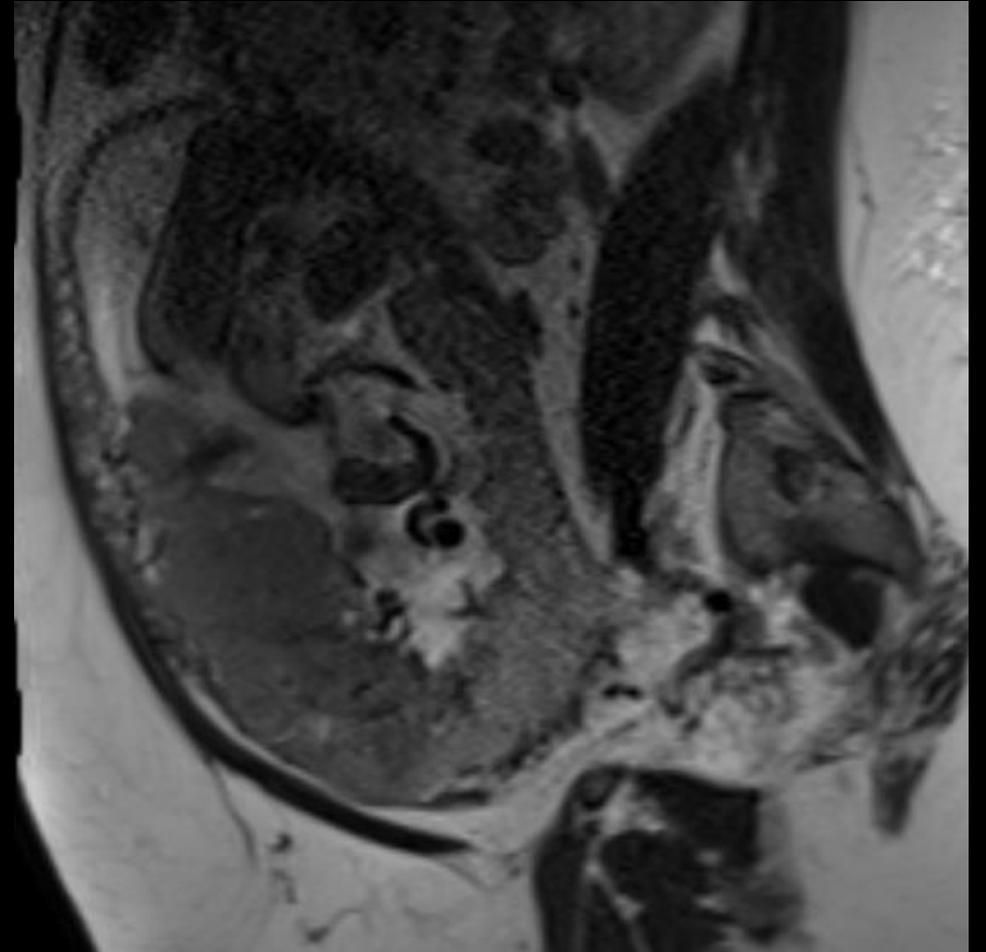
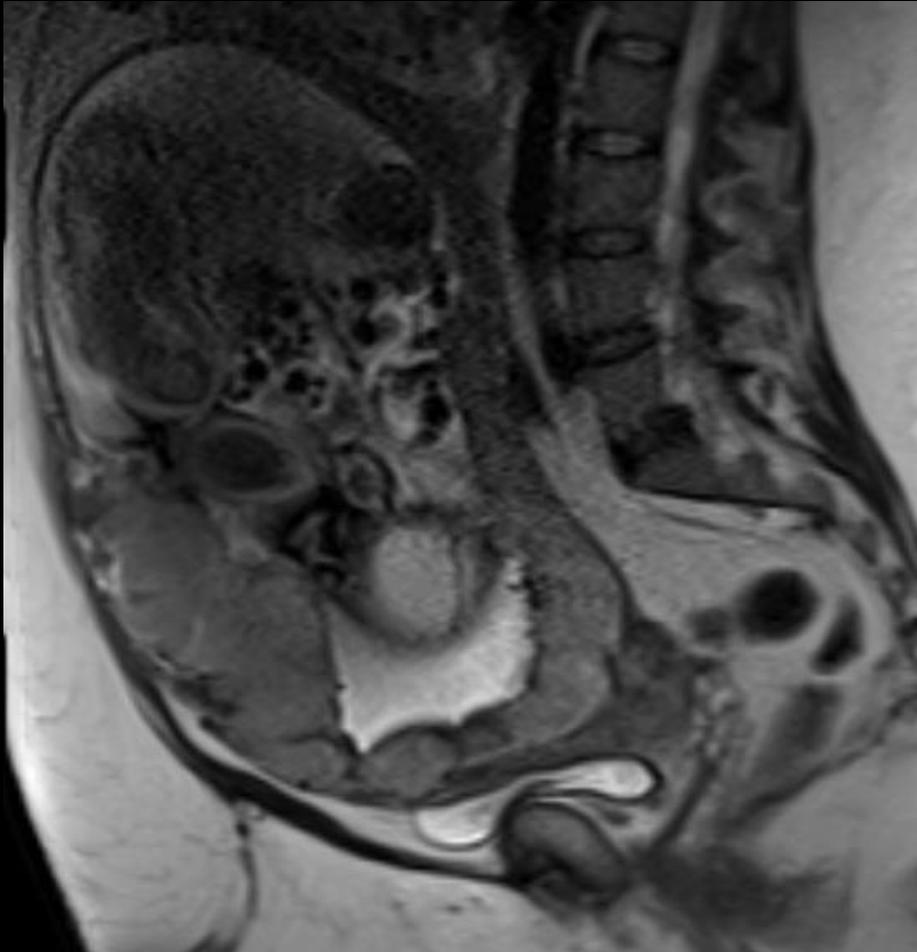
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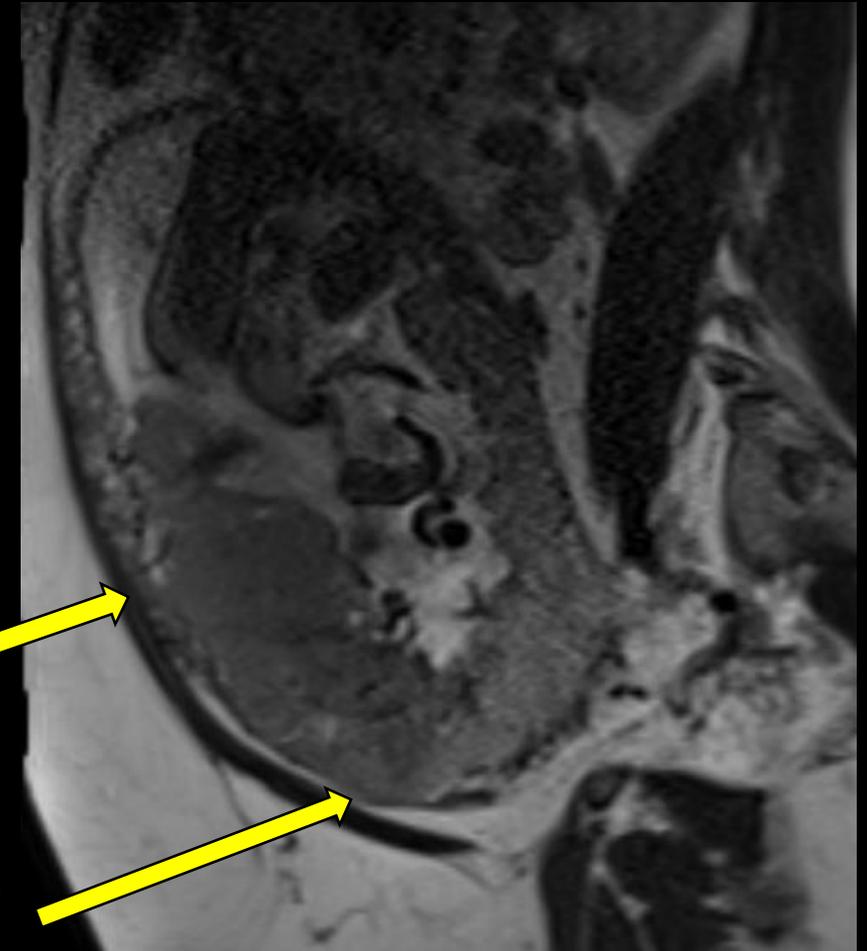
Findings (unlabeled)



Findings (labeled)

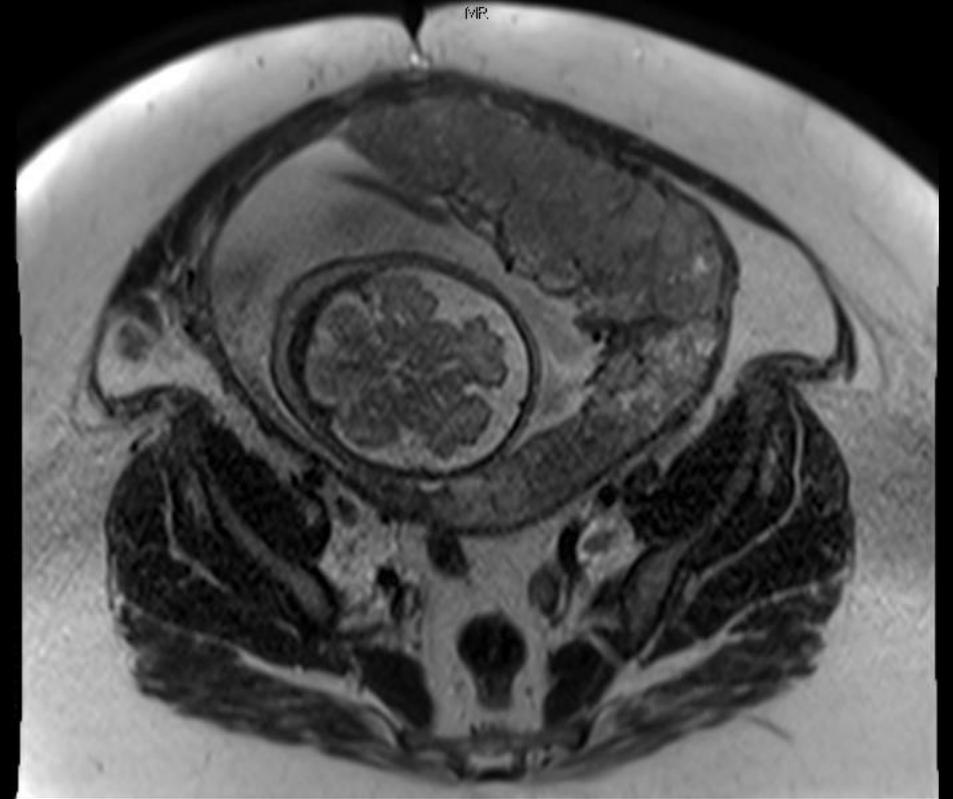
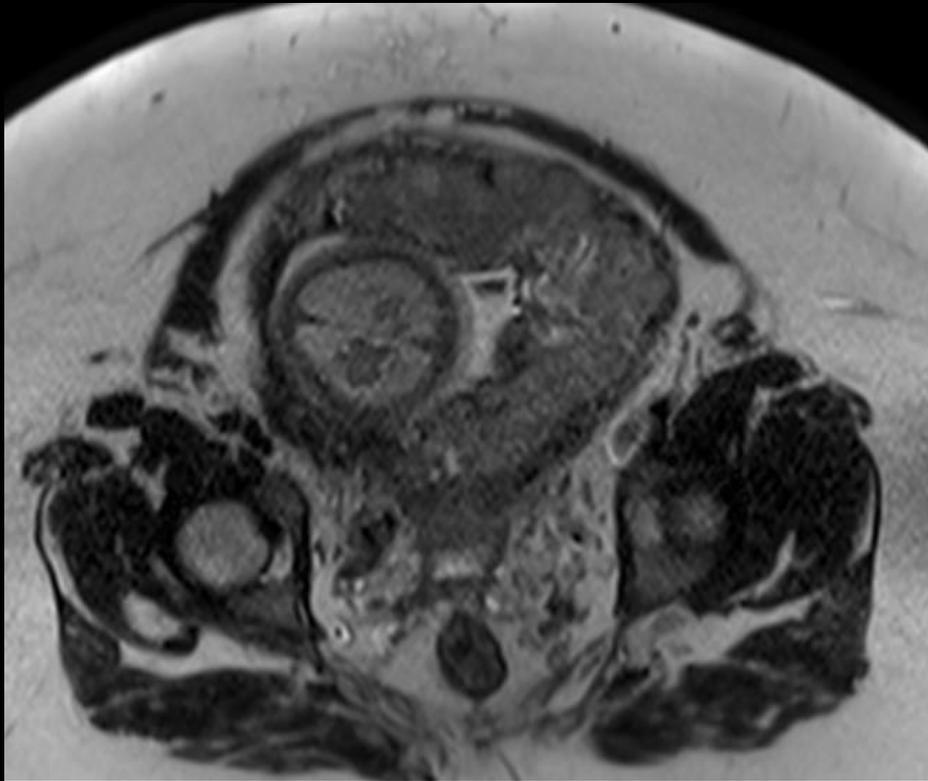


Placenta completely covers the internal cervical os (placenta previa).



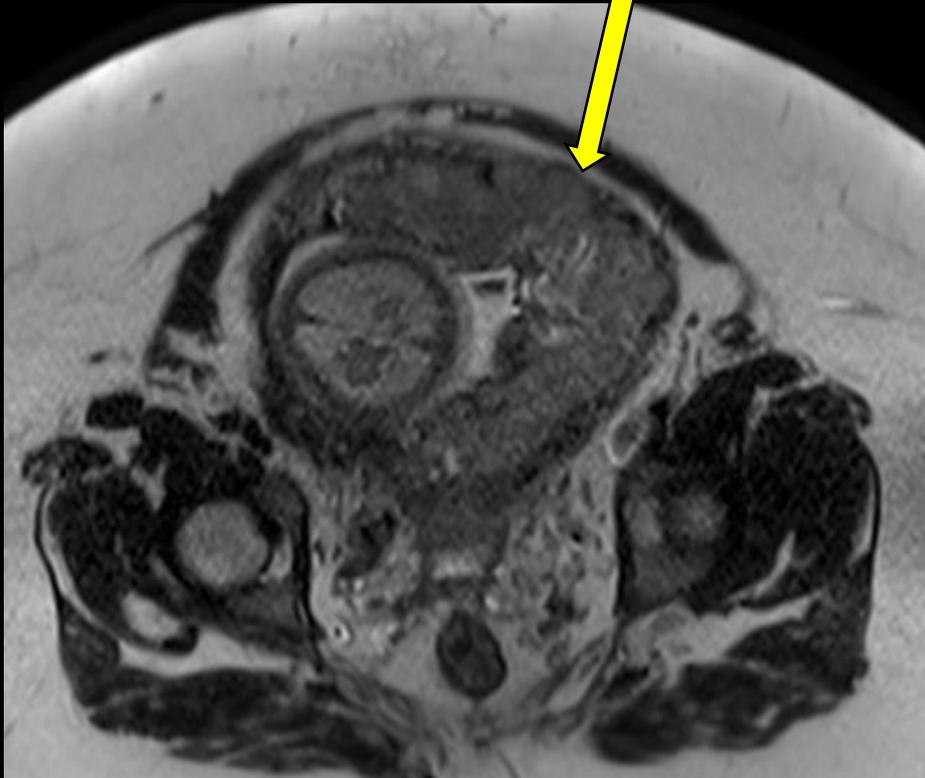
Anteriorly located placenta with areas of extension through the entire thickness of the uterine myometrium and poor definition of the overlying serosa.

Findings (unlabeled)

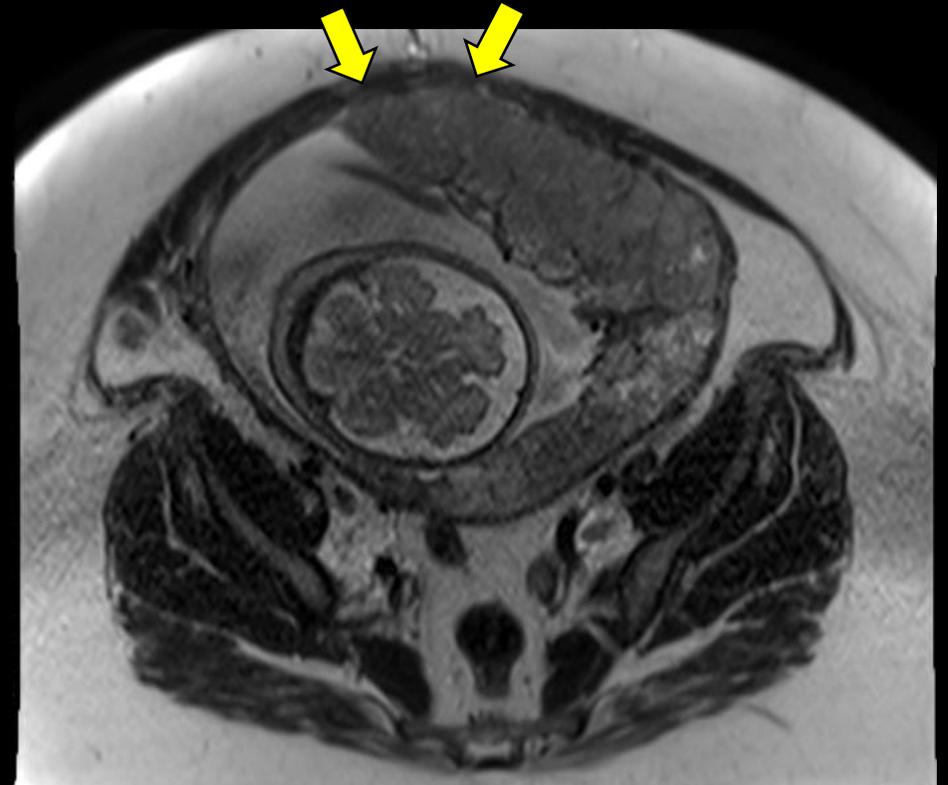


Findings (labeled)

Placenta involves the entire uterine wall with areas of thinned overlying serosa.



Placenta anteriorly directly abuts the abdominal wall musculature with loss of fat plane and infiltrative appearance suggesting invasion of the muscle.



Findings/Follow-up

- Operative findings:
 - From initial C-section:
 - Increased vascularization in the lower uterine segment with evidence of placenta likely invading at least the bladder reflection.
 - Unclear if invasion into the bladder serosa.
 - Interval uterine artery embolization was performed to reduce bleeding risk at the time of delayed hysterectomy.

Findings/Follow-up

- Operative findings (6 weeks later):
 - From delayed hysterectomy after uterine artery embolization:
 - No breach of the bladder mucosa, however the placenta was determined to have breached the uterine serosa and was invading into the adipose tissue surrounding the bladder.

Findings/Follow-up

- Pathology:
 - Uterus with placenta percreta, and abundant vascular embolization material with numerous placental infarcts.

Final Dx:

Placenta previa and percreta.

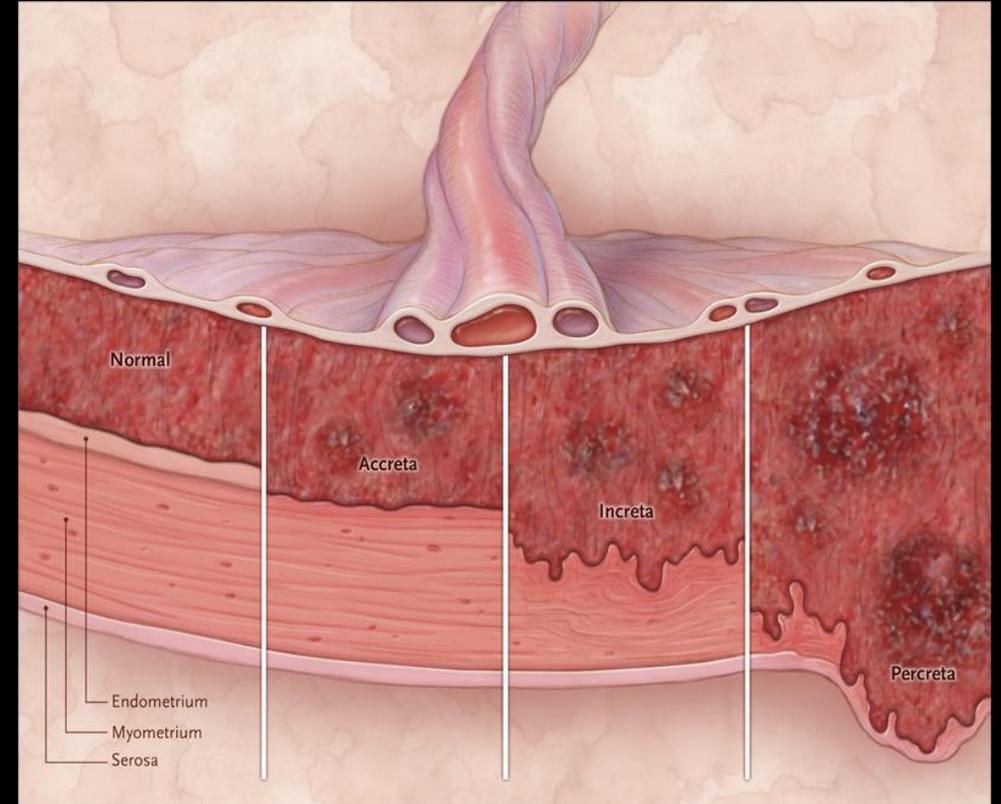
Case Discussion

**Differential
diagnosis for
abnormal
placentation**

- Previa
- Accreta
- Increta
- Percreta

Case Discussion

- Incidence of Placenta Accreta Spectrum Disorder (PASD) has increased over past decades from approximately 1 in 2,500 to 1 in 500 deliveries.
- Pathology is related to a defect in trophoblastic function, failure of normal decidualization, or a combination of both.
- In placenta accreta, the chorionic villi adhere directly to the myometrium with trophoblastic invasion.
- In placenta increta, placental villi invade into the myometrium.
- In placenta percreta, villi invade through the myometrium and into the serosa and adjacent structures.



Case Discussion

Risk factors

- Placenta previa
- Cesarean delivery
- Advanced maternal age
- In vitro fertilization
- Prior uterine surgery and trauma
- Asherman syndrome
- Uterine anomalies (congenital or acquired)
- Smoking
- Hypertension

Case Discussion

Diagnostic Imaging

- First line

- US pregnant uterus (transabdominal/transvaginal/Doppler):
 - Presence of intraplacental lacunae
 - Loss of normal hypoechoic retroplacental zone
 - Myometrial thickness <1cm
 - Placental bulging
 - Bladder wall abnormalities

- If US non-diagnostic:

- Posterior placentation
- Obesity

- MRI abdomen and pelvis without contrast:
 - Disruption of hypointense line at myometrial interface by placenta
 - Loss of fat plane between placental tissue and adjacent organs or abdominal wall.
 - Intraplacental bands/heterogeneity
 - Increased vascularity at the placental-myometrial interface
 - Lumpy placental contour with uterine bulging.

Case Discussion

Management

Planned cesarean delivery:

- With or without hysterectomy (depending on the suspected severity of PASD)
- Around 34 to 38 weeks.

References

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