



INTRODUCTION

Cesarean scar pregnancy (CSP) is becoming more frequent. It occurs when a pregnancy implants at a prior hysterotomy site. CSP can lead to serious complications, such as bleeding and uterine rupture, even during the first trimester. Treatment options include medical or surgical interventions, depending on the timing of presentation and diagnosis. This case series focuses on different CSP presentations and the importance of early diagnosis and proper interventions to prevent maternal morbidity.

CASE DESCRIPTIONS

Case One: A 36-year-old G2P0102 at uncertain gestation who presented after abnormal findings on an initial prenatal ultrasound. She had a history of one prior cesarean delivery for twin gestation. A family medicine provider initially saw her, and an ultrasound performed at that visit revealed a hyper-vascular, heterogeneous mass in the mid-anterior uterus, raising concern for a molar pregnancy. A follow-up ultrasound in the maternal-fetal medicine clinic demonstrated the adjacent findings within the cesarean scar niche, with no visible embryo. The patient was asymptomatic and had falling beta-hCG levels, so she opted for expectant management. About one month later, her beta-hCG levels plateaued, and she underwent excision of the CSP via exploratory laparotomy.

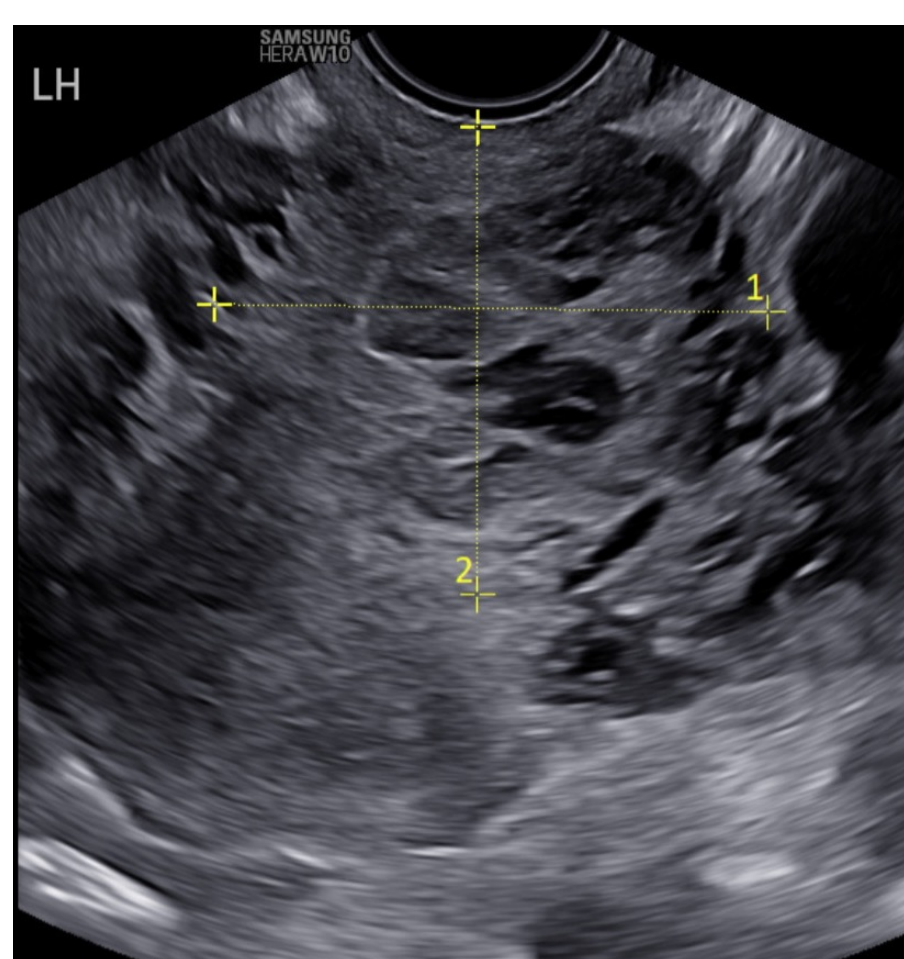


Figure 1A (above): Heterogenous, hypervascular (no color flow demonstrated in image) mass along anterior left lower uterine segment within cesarean scar

Figure 1B (below): Intraoperative findings of products of conception within cesarean scar from Case One



Case Two: A 38-year-old G4P1021 presenting to her first prenatal visit at 6 weeks and 2 days gestation. She had a history of one prior low transverse cesarean delivery for breech presentation. An ultrasound performed at that visit revealed fetal cardiac activity, and she was diagnosed with a Type IIIb CSP, a subtype characterized by vascular lacunae within the placenta adjacent to the bladder wall and myometrial vascular remodeling with increased flow. The patient underwent laparoscopic resection of the CSP, followed by dilation and curettage and repair of the uterine defect without complications. She has already had a successful subsequent pregnancy.

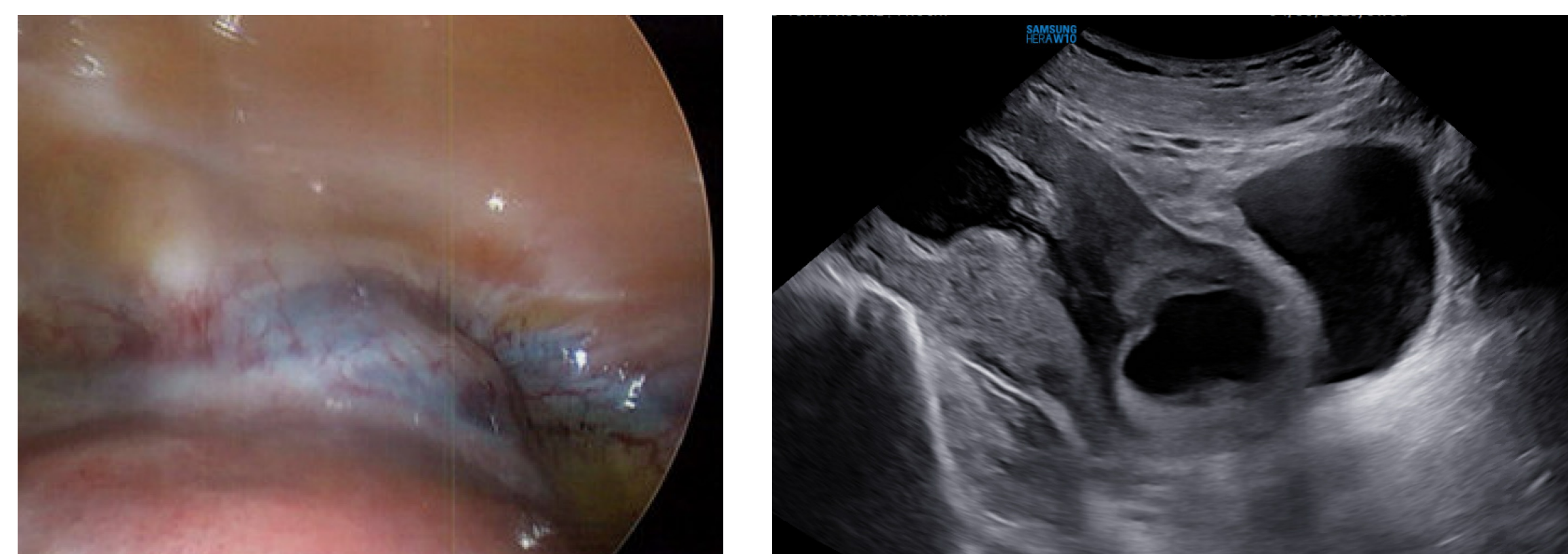


Figure 2A (left): Intraoperative picture of CSP with thin overlying peritoneum, **Figure 2B (right):** Defect in anterior myometrium with pregnancy implanted into cesarean scar

Case Three: A 27-year-old G4P3013 presented to the maternal-fetal medicine clinic with heavy vaginal bleeding despite two prior suction dilation and curettage (D&C) procedures for a missed abortion and presumed retained products of conception. Her obstetric history was noteworthy for a prior cesarean delivery in her first pregnancy, followed by two successful VBACs. Heavy vaginal bleeding persisted, and a follow-up ultrasound showed enhanced myometrial vascularity at the endocervical-endometrial junction and pulsatile flow within the myometrium, raising suspicion for residual CSP. Tamponade was attempted with an intrauterine Foley balloon, but the patient subsequently underwent bilateral uterine artery embolization, and the bleeding resolved. Serial beta-hCG levels were monitored following treatment until resolution.

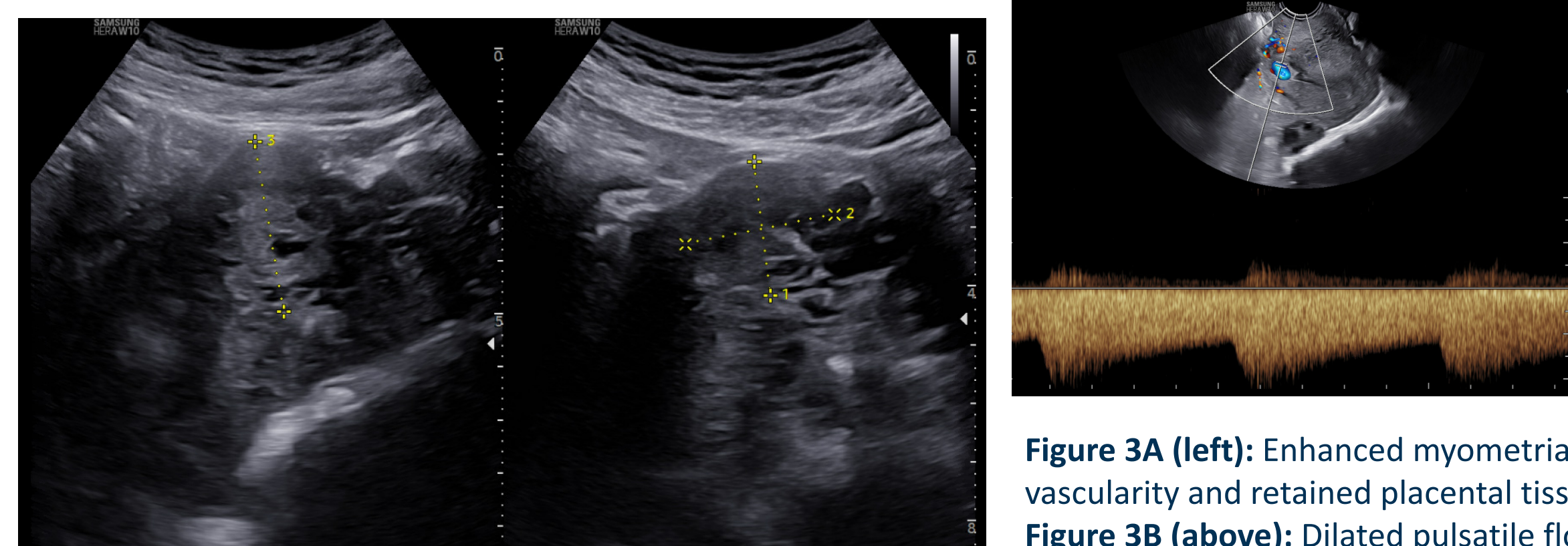


Figure 3A (left): Enhanced myometrial vascularity and retained placental tissue, **Figure 3B (above):** Dilated pulsatile flow within myometrium shown with spectral doppler

DISCUSSION

These cases illustrate the range of surgical options for CSP. While management may be individualized depending on to each patient presentation, timely intervention often involves multidisciplinary teams and is essential to reduce CSP morbidity. Two patients in this series experienced complications following initial management, leading to treatment escalation. While medical therapy with methotrexate may be suitable in selected cases, recent study data indicates that medical therapy alone is associated with higher rates of persistent bleeding or incomplete resolution with medical therapy alone (Huo et al., 2023). Most CSPs require surgical management such as dilation and curettage, CSP excision, or gravid hysterectomy. Uterine artery embolization often serves as an adjunct to surgery while surgical excision allows for concurrent scar revision. Given the potential severity of CSP complications, novel surgical techniques for cesarean scar repair are also being explored during the preconception period.

CONCLUSION

CSP is a rare but is becoming more frequent in patients with a history of cesarean delivery. Providers should familiarize themselves with the range of symptoms and ultrasound findings of CSP, especially in the first trimester, to efficiently avoid maternal morbidity. Surgical intervention for CSP offers safer, definitive management.

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