

## **Timely Surgical Management of Cesarean Scar Ectopic Pregnancy Limits Maternal Morbidity: A Case Series**

**Hannah Harper Kumpf, MD<sup>1</sup>; Lindsey Grater, MS<sup>4</sup><sup>1</sup>; Manvi Pudukollu, MS<sup>4</sup><sup>1</sup>; William Toussaint, MD<sup>1</sup>; Kelli Braun<sup>1</sup>, MD; James Maher, MD<sup>1</sup>; Lawrence Devoe, MD<sup>1</sup>**

<sup>1</sup> = Medical College of Georgia

### Background

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.

### Cases

A 36-year-old G2P0102 at approximately 3 weeks gestation who presented to our facility after abnormal findings on an initial prenatal ultrasound. Her obstetric history was notable for a primary cesarean delivery for twin gestation two years ago. 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 above 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 had plateaued, and she underwent excision of the CSP via exploratory laparotomy. Her postoperative course was uncomplicated.

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.

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 marked vascularity at the endocervical-endometrial junction and pulsatile flow within the myometrium, raising suspicion for 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.

## 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 need 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.

## Citations

Huo, S., Shen, L., Ju, Y., Liu, K., & Liu, W. (2023). Treatments for cesarean scar pregnancy: 11-year experience at a medical center. *The Journal of Maternal-Fetal & Neonatal Medicine*, 36(1). <https://doi.org/10.1080/14767058.2022.2162818>

E. Jauniaux, D. Jurkovic, Placenta accreta: Pathogenesis of a 20th century iatrogenic uterine disease, *Placenta*, Volume 33, Issue 4, 2012, Pages 244-251, ISSN 0143-4004, <https://doi.org/10.1016/j.placenta.2011.11.010>.

Kaelin Agten A, Cali G, Monteagudo A, Oviedo J, Ramos J, Timor-Tritsch I. The clinical outcome of cesarean scar pregnancies implanted "on the scar" versus "in the niche". *Am J Obstet Gynecol.* 2017 May;216(5):510.e1-510.e6. doi: 10.1016/j.ajog.2017.01.019. Epub 2017 Jan 20. PMID: 28115056.

Panaitescu, A.M., Ciobanu, A.M., Gică, N., Peltecu, G. and Botezatu, R. (2021), Diagnosis and Management of Cesarean Scar Pregnancy and Placenta Accreta Spectrum. *J Ultrasound Med*, 40: 1975-1986. <https://doi.org/10.1002/jum.15574>

Rachel Yoon, Kirsten Sasaki, Charles E. Miller, Laparoscopic Excision of Cesarean Scar Pregnancy with Scar Revision, *Journal of Minimally Invasive Gynecology*, Volume 28, Issue 4, 2021, Pages 746-747, ISSN 1553-4650, <https://doi.org/10.1016/j.jmig.2020.06.017>.