Journal of **R**eproduction & **I**nfertility
Volume 26, Issue no. 2
https://doi.org/10.18502/jri.v26i2.19438

Case Report

Check for updates

From High Risk to Hope: A Case Report of Live Birth from Cesarean Scar Pregnancy with Placenta Percreta

Nona Sabeti [1], Houra Mousavi Vahed [2], Seyedeh Azam Pourhoseini [2*]

1- Department of obstetrics and gynecology, Faculty of Medicine, Mashhad University of Medical Science, Mashhad, Iran
2- Associate Professor of obstetrics & Gynecology, Faculty of Medicine, Mashhad University of Medical Sciences, Mashhad, Iran.

** Corresponding Author:*
Seyedeh Azam Pourhoseini, Associate Professor of obstetrics & Gynecology, Fellowship of laparascopy, Department of Obstetrics and Gynecology, Faculty of Medicine, Mashhad University of Medical Sciences, Mashhad, Iran
E-mail:
PourhoseiniA@mums.ac.ir

Received: 20, Feb. 2025
Accepted: 29, Jun. 2025

Abstract

Background: Cesarean scar pregnancy (CSP) is a rare yet serious condition involving implantation of the gestational sac at the site of a prior cesarean delivery. The management becomes increasingly complex with the addition of placenta percreta. In this paper, a case of CSP complicated by placenta percreta was reported which was successfully managed through a multidisciplinary approach.

Case Presentation: A 35-year-old G4P3 woman was diagnosed with CSP at 6 weeks of gestation. Despite counseling on the risks, she opted to continue the pregnancy. Placenta percreta was diagnosed at 18 weeks. A multidisciplinary team monitored the pregnancy closely, leading to the delivery of a healthy infant at 32 weeks via cesarean delivery and subsequent hysterectomy.

Conclusion: Multidisciplinary management and close follow-up are crucial in managing high-risk CSP cases, especially those complicated by abnormal placentation.

Keywords: Abnormal placentation, Cesarean scar pregnancy, Hysterectomy, Live birth, Placenta percreta.
To cite this article: Sabeti N, Mousavi Vahed H, Pourhoseini SA. From High Risk to Hope: A Case Report of Live Birth from Cesarean Scar Pregnancy with Placenta Percreta. J Reprod Infertil. 2025;26(2):126-130. https://doi.org/10.18502/jri.v26i2.19438.

Introduction

Cesarean scar pregnancy (CSP) is a rare and potentially life-threatening form of ectopic pregnancy in which the gestational sac implants within the scar tissue of a previous cesarean delivery (1). There are two main types of CSP. In the first type, the embryo implants on the scar and grows toward the uterine cavity. Although this may result in a live birth, it carries a significant risk of severe hemorrhage. The second type, referred to as niche pregnancy, involves deep implantation within the cesarean scar, extending toward the bladder and abdominal cavity. This variant is associated with a high risk of uterine rupture and severe maternal morbidity (2).

CSP is considered a precursor to placenta accreta spectrum (PAS) disorders. These include: placenta accreta, where chorionic villi attach directly to the myometrium without an intervening decidual layer; placenta increta, where the villi invade into the myometrium; and placenta percreta, the most severe form, in which the villi penetrate through the uterine serosa and invade adjacent organs, such as the bladder (3, 4). The incidence of CSP has increased in recent years, primarily due to the rising global cesarean delivery rates and advancements in imaging techniques that enable earlier and more accurate diagnoses (5). Current estimates suggest that CSP accounts for approximately 6% of ectopic pregnancies in women with a history of cesarean section (6).

Managing CSP is a complex and often contentious issue. Treatment options include medical management, minimally invasive surgery, or definitive approaches such as hysterectomy (7). Early diagnosis is crucial for optimal management and mitigating severe complications (8). Cases become particularly challenging when patients elect to continue the pregnancy despite counseling

(9). The risks escalate further when CSP is complicated by PAS disorders, especially placenta percreta (10).

A rare case of CSP complicated by placenta percreta was reported, resulting in a live birth following multidisciplinary management. The diagnostic process, counseling, management decisions, and maternal outcomes were all discussed to emphasize the importance of individualized care and close monitoring in such high-risk pregnancies.

Case Presentation

This case was managed at Imam Reza Hospital, Mashhad, Iran, between March 2023 and September 2023. A 35-year-old woman, gravida 4, para 3, presented to Imam Reza Hospital's gynecology clinic at 6 weeks and 5 days of gestation, confirmed by transvaginal ultrasound. Her obstetric history included three previous cesarean deliveries, the first of which was performed due to fetal distress. Ultrasound revealed a gestational sac implanted at the site of the previous cesarean scar, consistent with a diagnosis of CSP. The patient was asymptomatic, with no complaints of pain or vaginal bleeding.

The patient was counseled regarding the diagnosis and offered termination options, including hysteroscopy and laparoscopy, due to the significant risks of continuing the pregnancy, such as uterine rupture and life-threatening hemorrhage. However, the patient expressed a desire to preserve fertility and opted against termination. She was placed under close follow-up.

An anomaly scan was done at 18 weeks and was found to be normal. However, ultrasound findings were consistent with total placenta previa and features suggestive of placenta percreta, including bridging vessels and multiple placental lakes (Figure 1). Despite repeated counseling regarding the risks, including hemorrhage, maternal and fetal mortality, peripartum hysterectomy, and extensive blood product transfusion, the patient chose to continue the pregnancy.

At 29 weeks of gestation, the patient experienced a mild vaginal bleeding episode and was admitted to Imam Reza Hospital. Ultrasound confirmed persistent placenta percreta (Figure 2). Vital signs were stable. She received neuroprotective magnesium sulfate and two doses of betamethasone for fetal lung maturity. After 72 *hr*, the bleeding resolved, and she was discharged with instructions

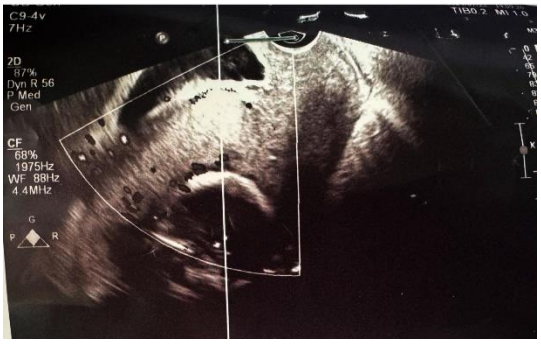

Figure 1. Ultrasonographic image at 18 weeks of gestation showing a complete placenta previa with thinning of the myometrium between the placenta and the bladder, indicating placenta previa

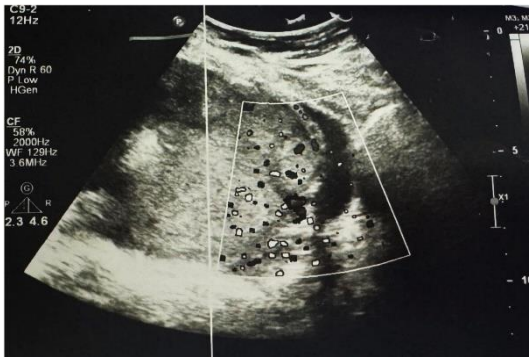

Figure 2. Ultrasound image demonstrating loss of interface between the myometrium and placenta, with increased vascularity behind the placenta and presence of multiple placental lakes, consistent with placenta percreta

for close monitoring and immediate return if symptoms recurred.

At 32 weeks and 1 day of gestation, the patient was readmitted due to a recurrent bleeding episode. She remained hemodynamically stable. A rescue dose of betamethasone was administered, and an emergency cesarean delivery was planned.

In the operating room, a midline incision was extended above the umbilicus due to severe adhesions. Given the extensive placental invasion, a fundal incision was performed to deliver the fetus. A breech female infant weighing 1690 grams with an Apgar score of 8-9 was delivered during a two-hour-long cesarean delivery operation. Due to severe lower uterine segment adhesions, a hysterectomy was performed (Figure 3). The placenta was not removed and was kept in situ. The uterus and placenta were successfully removed intact, with the cervix visible, as shown in the attached images (Figure 4). The cervix was clearly identifiable, and both ovaries were preserved, consider-

Figure 3. Intraoperative photograph showing placental infiltration into the uterine wall and bulging of the anterior surface, consistent with placenta percreta

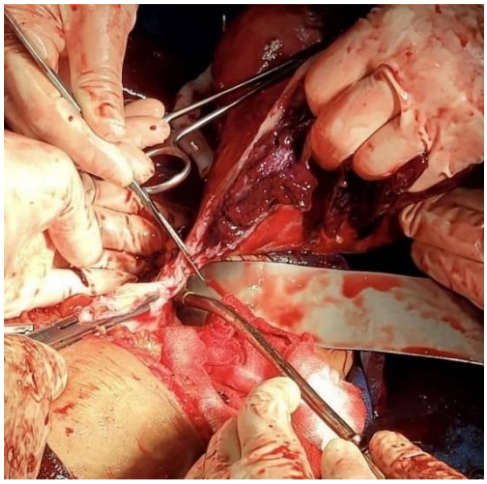

Figure 4. Intraoperative image showing the uterus and placenta removed en bloc, with clear visualization of the cervix

ing the patient's age. Estimated intraoperative blood loss was approximately 2,000 *ml*, and one unit of packed red blood cells was transfused based on an anesthesiologist's assessment. The fully extracted placenta was transferred to the pathology laboratory for further study. The patient had an uneventful postoperative recovery and was discharged from the hospital on postoperative day 3.

Discussion

CSP is a rare but potentially life-threatening condition with significant maternal morbidity if not managed promptly (11). It is characterized by the implantation of the gestational sac within the fibrous tissue of a previous cesarean scar, predisposing patients to serious complications, including PAS disorders (12). Early diagnosis using high-resolution ultrasound and timely intervention are essential to reduce complications (13). The diagnosis of CSP can be challenging, especially in early pregnancy (14). Misdiagnosis and inappropriate procedures such as curettage may lead to catastrophic outcomes (15). A high index of suspicion is required, as up to 40% of patients may not present with specific clinical symptoms (16). Studies have shown that approximately 13% of CSP cases are initially misdiagnosed as intrauterine or cervical pregnancies (17). Early and accurate diagnosis is essential to avoid life-threatening complications and preserve future fertility.

Placenta percreta, the most severe form of PAS, can lead to significant hemorrhage, uterine rupture, and may require surgical intervention (18). Based on our experience and recent literature, early termination remains the safest management strategy for viable CSPs (19). Expectant management may occasionally result in a live birth; however, it is associated with a high rate of complications and a significant likelihood of hysterectomy. There are recent reports of expectant management of CSPs with cardiac activity. Timor-Tritsch et al. reported ten patients with viable CSP managed expectantly (20). Four women (40%) achieved a live birth by scheduled cesarean delivery at 32–36 weeks, three of whom required hysterectomy due to placenta previa percreta. Conversely, five patients experienced pregnancy loss between 15–20 weeks, and eight of the ten ultimately underwent hysterectomy. In a meta-analysis conducted by Calì et al. in 2018, 52 cases of viable CSPs managed expectantly were reviewed. Of these, 76.9% reached the third trimester; however, 40% experienced severe bleeding, 10% suffered uterine rupture, and over 60% required hysterectomy at the time of cesarean. Moreover, approximately 75% of the cases were complicated by abnormal placentation (21). Consequently, it is crucial to inform women with CSP about the favorable outcomes of future pregnancies following the termination of CSP during their consultations (15). The management of CSP is multifaceted, requiring a multidisciplinary approach and often involving complex decision-making processes.

In our case, the patient elected to continue the pregnancy despite repeated counseling about associated risks. This decision led to the progression of placenta percreta and ultimately necessitated cesarean hysterectomy. Although a healthy infant

was delivered, the patient's fertility was irreversibly compromised. While there are documented cases of live births following cesarean scar pregnancy, these often involve early intervention and termination to prevent complications such as placenta accreta spectrum disorders. A meta-analysis by Calì et al. highlighted that early termination significantly reduces the risk of uterine rupture, severe hemorrhage, and hysterectomy. In contrast, expectant management, especially for viable pregnancies, frequently results in adverse outcomes, including the need for radical surgical interventions like hysterectomy. Therefore, counseling must include evidence-based data on the potential outcomes of future pregnancies after early termination of CSP versus the risks of complications when pregnancies are continued (22). Early diagnosis, individualized management, and comprehensive counseling remain the cornerstones of effective CSP care.

Conclusion

This case highlights the critical impact of early decision-making in managing cesarean scar pregnancies. Despite successful delivery, the continuation of pregnancy in this case led to placental percreta and necessitated a hysterectomy, resulting in permanent loss of fertility. Counseling for patients diagnosed with CSP should emphasize the delicate balance between the desire for live birth and the risks of uterine rupture, severe hemorrhage, abnormal placentation, and the potential need for radical surgical intervention. A multidisciplinary approach remains essential for optimizing outcomes, but patient decisions significantly shape the trajectory of care and outcomes.

Conflict of Interest

Authors declare no conflict of interest.

References

1. Seow KM, Huang LW, Lin YH, Lin MY, Tsai YL, Hwang JL. Cesarean scar pregnancy: issues in management. Ultrasound Obstet Gynecol. 2004;23(3):247-53.
2. Valasoulis G, Magaliou I, Koufidis D, Garas A, Daponte A. Caesarean scar pregnancy: a case report and a literature review. Medicina (Kaunas). 2022;58(6):740.
3. Kutlesic R, Kutlesic M, Vukomanovic P, Stefanovic M, Mostic-Stanisic D. Cesarean scar pregnancy successfully managed to term: when the patient is determined to keep the pregnancy. Medicina (Kaunas). 2020;56(10):496.
4. Timor-Tritsch IE, Monteagudo A, Santos R, Tsymbal T, Pineda G, Arslan AA. The diagnosis, treatment, and follow-up of cesarean scar pregnancy. Am J Obstet Gynecol. 2012;207(1):44.e1-13.
5. Maymon R, Halperin R, Mendlovic S, Schneider D, Vaknin Z, Herman A, et al. Ectopic pregnancies in Caesarean section scars: the 8 year experience of one medical centre. Hum Reprod. 2004;19(2):278-84.
6. Huang J, Phillips C, Moshiri M. Scarred for life: a review of cesarean section scar pregnancy and potential pitfalls in diagnosis. Abdom Radiol (NY). 2023;48(8):2672-83.
7. Wang CB, Tseng CJ. Primary evacuation therapy for Cesarean scar pregnancy: three new cases and review. Ultrasound Obstet Gynecol. 2006;27(2):222-6.
8. Jurkovic D, Wilkinson H. Diagnosis and management of ectopic pregnancy. BMJ. 2011;342:d3397.
9. Zhang Y, Zhang Z, Liu X, Zhang L, Hong F, Lu M. Risk factors for massive hemorrhage during the treatment of cesarean scar pregnancy: a systematic review and meta-analysis. Arch Gynecol Obstet. 2021;303(2):321-8.
10. Jurkovic D, Hillaby K, Woelfer B, Lawrence A, Salim R, Elson CJ. First-trimester diagnosis and management of pregnancies implanted into the lower uterine segment Cesarean section scar. Ultrasound Obstet Gynecol. 2003;21(3):220-7.
11. Suzuki N, Kyozuka H, Fukuda T, Murata T, Kanno A, Yasuda S, et al. Late-diagnosed cesarean scar pregnancy resulting in unexpected placenta accreta spectrum necessitating hysterectomy. Fukushima J Med Sci. 2020;66(3):156-9.
12. Jayaram PM, Okunoye GO, Konje J. Caesarean scar ectopic pregnancy: diagnostic challenges and management options. Obstet Gynaecol. 2017;19(1):13-20.
13. Malhotra N, Noor N, Bansal P, Sharma K. Successful management of caesarean scar ectopic pregnancies: a report of five cases. J Reprod Infertil. 2021;22(3):220-4.
14. Lin R, DiCenzo N, Rosen T. Cesarean scar ectopic pregnancy: nuances in diagnosis and treatment. Fertil Steril. 2023;120(3 Pt 2):563-72.
15. Shiber Y, Maymon R, Gal-Kochav M, Kugler N, Pekar-Zlotin M, Smorgick N, et al. Caesarean scar pregnancy: is there a light in the end of the tunnel? Arch Gynecol Obstet. 2023;307(4):1057-64.

16. Rotas MA, Haberman S, Levgur M. Cesarean Scar Ectopic Pregnancies: Etiology, Diagnosis, and Management. Obstet Gynecol. 2006;107(6):1373-81.
17. Sun H, Wang J, Fu P, Zhou T, Liu R. Systematic evaluation of the efficacy of treatments for cesarean scar pregnancy. Reprod Biol Endocrinol. 2024;22(1):84.
18. Calì G, Timor-Tritsch IE, Palacios-Jaraquemada J, Monteaugudo A, Buca D, Forlani F, et al. Outcome of cesarean scar pregnancy managed expectantly: systematic review and meta-analysis. Ultrasound Obstet Gynecol. 2018;51(2):169-75.
19. Silva B, Viana Pinto P, Costa MA. Cesarean scar pregnancy: a systematic review on expectant management. Eur J Obstet Gynecol Reprod Biol. 2023;288:36-43.
20. Timor-Tritsch IE, Khatib N, Monteagudo A, Ramos J, Berg R, Kovács S. Cesarean scar pregnancies: experience of 60 cases. J Ultrasound Med. 2015;34(4):601-10.
21. Calì G, Timor-Tritsch IE, Palacios-Jaraquemada J, Monteaugudo A, Buca D, Forlani F, et al. Outcome of cesarean scar pregnancy managed expectantly: systematic review and meta-analysis. Ultrasound Obstet Gynecol. 2018;51(2):169-75.
22. Birch Petersen K, Hoffmann E, Rifbjerg Larsen C, Svarre Nielsen H. Cesarean scar pregnancy: a systematic review of treatment studies. Fertil Steril. 2016;105(4):958-67.