

Early Diagnosis of Cesarean Site Ectopic Pregnancy: The Critical Role of Ultrasound in Preventing Complication

Iqra Shaukat¹, Mohsin Jamil¹, Beenish Suhail¹, Farayha Khalid¹, Hassaan Ahmed Khan Niazi², Abdullah Ahmad Khan Niazi³

¹Department of Radiology, Akbar Niazi Teaching Hospital Islamabad; ²Islamabad Medical and Dental College, Islamabad; ³Fauji Foundation Medical College, Rawalpindi

ABSTRACT

Cesarean scar ectopic pregnancy (CSP) is a rare type of ectopic pregnancy where the embryo implants on the cesarean scar from a prior surgery. We present a case of a 34-year-old woman, gravida 6, para 5, with history of five previous cesarean sections and uncontrolled type 2 diabetes. She presented with 8 weeks and 3 days of amenorrhea. Transabdominal and transvaginal ultrasound confirmed a viable gestation implanted in the anterior part of the lower uterine segment, within the cesarean scar region. Subsequently, laparotomy for excision of ectopic pregnancy was done. Gestational sac adherent to previous uterine scar was removed with all its membranes. Histopathology report confirmed the product of conception. Early diagnosis of cesarean scar ectopic pregnancy (CSP) via ultrasound is vital. Recognizing a gestational sac in the lower uterine segment helps guide timely treatment and prevent serious complications.

Key Words: Cesarean scar ectopic pregnancy (CSP), ultrasound diagnosis, laparotomy.

Authors' Contribution:

^{1,2}Conception; ¹Literature research; ¹manuscript design and drafting; ^{3,4}Critical analysis and manuscript review; ⁵Data analysis; ¹Manuscript Editing.

Correspondence:

Iqra Shaukat
Email: Iqrashaukatimdc@gmail.com

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Introduction

Cesarean scar ectopic pregnancy (CSP) is a rare form of ectopic pregnancy where the gestational sac implants within a previous cesarean section scar. This condition poses significant risks, including uterine rupture and severe hemorrhage, making early diagnosis crucial. With rising cesarean delivery rates globally, CSP is being increasingly recognized. Ultrasound, particularly transvaginal sonography (TVS), is essential for early detection, offering detailed evaluation of the gestational sac and surrounding structures. This article emphasizes the critical role of ultrasound in diagnosing CSP and discusses a case that highlights the importance of

prompt management to prevent life-threatening complications.¹

Case Presentation

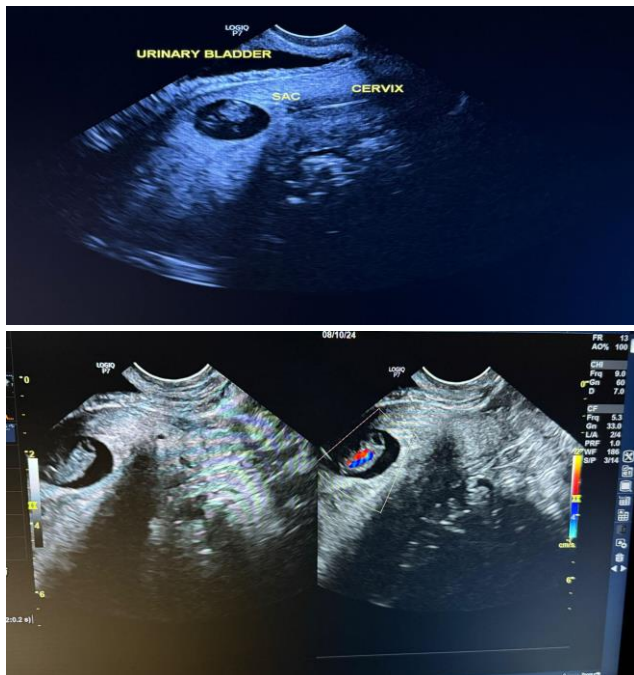
The patient, a 34-year-old woman, married for 12 years, gravida 6, para 5, with five previous cesarean sections, presented with 8 weeks and 3 days of amenorrhea. She was asymptomatic at the time of presentation. Her medical history includes uncontrolled type 2 diabetes. She is not taking any medication for diabetes. Physical examination was unremarkable, with stable vital signs and no abdominal tenderness. Laboratory results revealed an elevated beta-hCG level (24460 mIU/ml)

consistent with early pregnancy. Given her obstetric history, a transabdominal ultrasound followed by transvaginal ultrasound (TVS) was performed for further evaluation.

Imaging Findings:

Transabdominal and Transvaginal Ultrasound:

- A well-defined intrauterine gestational sac with a yolk sac and fetal pole was identified in the anterior part of the lower uterine segment, located within the cesarean scar region.
- Positive cardiac activity was observed, consistent with a viable single gestation.
- The gestational sac abutted the lower portion of the endometrial cavity, with thinning of the myometrium between the sac and the urinary bladder wall, indicating an implantation in the scar region with minimal intervening myometrial tissue.
- The cervical canal was empty, excluding the possibility of cervical or low-lying ectopic pregnancy.



Figures 1 and 2: Transvaginal ultrasound showing gestational sac with a fetal pole at the site of previous cesarean scar with positive fetal cardiac activity.

The sonographic features were consistent with a live cesarean scar ectopic pregnancy, with measurements corresponding to an 8-week gestation.

Diagnosis:

Based on the patient's history and ultrasound findings, a diagnosis of cesarean scar ectopic pregnancy was made. The presence of cardiac activity indicated a viable pregnancy, raising considerations for both immediate management and potential complications.

Management:

Patient underwent laparotomy for excision of ectopic pregnancy. Per-op findings were consistent with sonological findings confirming gestational sac adherence to previous uterine scar which was removed with all its membranes. Histopathology report further confirmed the product of conception.

Discussion

The early diagnosis of cesarean scar ectopic pregnancy (CSP) is critical to prevent potentially life-threatening complications such as uterine rupture and hemorrhage. This case highlights the importance of timely ultrasound evaluation in high-risk patients, particularly those with multiple cesarean sections and comorbid conditions, such as diabetes. Our study emphasizes that transvaginal ultrasound can provide clear imaging of the gestational sac within the cesarean scar, aiding in the early identification of CSP.

Key findings from this case include the identification of a viable pregnancy within the cesarean scar, with positive cardiac activity observed on ultrasound. This aligns with previous studies, such as Jameel et al. (2021), which highlights the importance of detecting cardiac activity to assess the viability of CSP (2). Additionally, our imaging findings, showing thinning of the myometrium between the sac and the bladder wall, are consistent with those reported by Hoffman and Lin (2020), who stress that such features are characteristic of CSP.³

Compared with other published studies, our findings support the effectiveness of early ultrasound diagnosis, as highlighted by Nwankwo et al. (2024), who emphasize the diagnostic challenges CSP presents in low-resource settings.⁴ The early recognition of CSP in our patient enabled timely surgical intervention, which is in line with the recommended management approach for cases involving viable pregnancies.

In conclusion, this case emphasizes the importance of early and accurate ultrasound evaluation in managing cesarean scar ectopic pregnancies, particularly in high-risk populations.

Management options for CSP include:

Medical Management: Administration of methotrexate may be used in non-viable cases or as an adjunct in cases where surgical resection is difficult.

Surgical Intervention: Given the patient's multiple cesarean scars and viable pregnancy, a laparoscopic resection or transvaginal ultrasound-guided curettage may be considered to prevent rupture. Alternatively, hysteroscopic resection may be considered if expertise is available.⁴

Uterine Artery Embolization (UAE): To reduce vascularity and minimize the risk of hemorrhage, UAE may be performed preoperatively in selected cases.⁵ The multidisciplinary team's approach, involving radiologists, obstetricians, and endocrinologists, is crucial for optimal management and prevention of complications, especially given the patient's coexisting diabetic condition.

Conclusion

This case illustrates the importance of early and

precise imaging in identifying cesarean scar ectopic pregnancy, especially in high-risk patients with a history of multiple cesarean sections and other comorbidities. Early diagnosis and intervention can be critical to prevent life-threatening complications, including uterine rupture and massive hemorrhage. This case highlights the role of detailed ultrasound evaluation and the importance of a tailored, multidisciplinary treatment approach.

References

1. Deepika, Gupta T, Wahi S. A rare case report of caesarean scar ectopic pregnancy. **J Clin Diagn Res**. 2017 Aug;11(8):QD10-QD11. <https://doi.org/10.7860/JCDR/2017/24611.10523>.
2. Jameel K, Abdul Mannan GE, Niaz R, Hayat DE. Scar ectopic pregnancy: a diagnostic and management challenge. **Cureus**. 2021 Apr 13;13(4): e14463. <https://doi.org/10.7759/cureus.14463>.
3. Hoffman T, Lin J. Cesarean scar ectopic pregnancy: diagnosis with ultrasound. **Clin Pract Cases Emerg Med**. 2020 Jan 15;4(1):65-68. <https://doi.org/10.5811/cpcem.2019.10.43988>.
4. Nwankwo ME, Egeonu RO, Ikeotuonye AC, Eleje GU, Okafor CO, Ikpeze GC, Ugadu SN, Agbanu CM, Nwankwo AF, Okafor CG. Diagnostic and management challenges of a rare case of caesarean scar pregnancy in a low-resource setting: a case report. **SAGE Open Med Case Rep**. 2024 Sep 25; <https://doi.org/10.1177/2050313X241286670>.
5. Guo J, Yu J, Zhang Q, Song X. Clinical Efficacy and Safety of Uterine Artery Embolization (UAE) versus Laparoscopic Cesarean Scar Pregnancy Debridement Surgery (LCSPDS) in Treatment of Cesarean Scar Pregnancy. *Med Sci Monit*. 2018 Jul 6; 24:4659-4666. <https://doi.org/10.12659/MSM.907404>.