

DOI: <https://dx.doi.org/10.18203/2320-1770.ijrcog20264034>

Case Report

Scar niche pregnancy successfully managed by laparotomy and excision of a caesarean scar ectopic pregnancy

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Received: 12 September 2026

Revised: 12 October 2026

Accepted: 14 October 2026

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ABSTRACT

Caesarean scar pregnancy (CSP) is a rare form of ectopic pregnancy in which the gestational sac implants within a previous caesarean section scar. Its recognition is increasing with rising caesarean delivery rates and improved ultrasonography. Transvaginal ultrasonography is the primary diagnostic modality, assessing gestational sac location and residual myometrial thickness. Management depends on gestational age, clinical stability, and fertility preferences, with options including medical therapy and surgical intervention. Early diagnosis and appropriate treatment are essential to prevent haemorrhage, uterine rupture, and other serious maternal complications while preserving fertility. A 31-year-old woman, G3P1L1A1, presented at approximately 7 weeks of gestation with vaginal spotting without abdominal pain or discomfort. She had a history of one caesarean delivery four years earlier and suction and evacuation for abortion seven months previously. Transvaginal ultrasonography revealed a caesarean scar ectopic pregnancy, with the gestational sac predominantly within the scar niche, a crown-rump length of 3.4 mm, and residual myometrial thickness of approximately 2.1 mm. Her serum β -hCG was 13,895 mIU/ml, and haemoglobin was 8.6 g/dL. After transfusion of two units of packed red blood cells, she initially received two intramuscular doses of methotrexate (50 mg) with leucovorin rescue. However, β -hCG increased to 14,554 mIU/ml on day 4, prompting surgical intervention. Laparotomy revealed a 2-cm bulge at the previous caesarean scar. The ectopic pregnancy was evacuated vaginally under direct supervision, followed by excision of the scar and two-layer uterine repair. The patient tolerated the procedure well. There has been an increase in scar ectopic pregnancy cases alongside rising caesarean section rates. Various medical and surgical treatments have been explored, but no consensus exists on the best approach. The authors advocate for laparotomy with scar ectopic tissue excision, especially in resource-limited settings lacking advanced technology or expertise.

Keywords: Caesarean scar pregnancy, Serum BHCG, Treatment

INTRODUCTION

Caesarean scar pregnancies (CSP) are a rare but serious type of ectopic pregnancy, with an incidence estimated at 1 in 2000 pregnancies and rising due to increasing caesarean delivery rates. CSP involves embryo implantation within the myometrial tissue of a prior cesarean section scar, away from the endometrial cavity, which can lead to severe complications such as uterine

rupture, severe maternal hemorrhage, and even death.¹⁻³ CSP accounts for about 6.1% of all ectopic pregnancies, with recurrence rates around 5% and a mortality rate of approximately 1 in 500 cases. Early diagnosis is critical to mitigate life-threatening outcomes linked to complications including placenta accreta spectrum. Enhanced awareness and improved early pregnancy ultrasonography are essential for timely identification and intervention.^{4,5}

Transvaginal ultrasonography, supplemented by colour Doppler assessment and serum beta-human chorionic gonadotropin (β -hCG) estimation, is the primary diagnostic approach. Management depends on gestational age, haemodynamic stability, β -hCG levels, residual myometrial thickness, and the patient's reproductive preferences. Available treatment options include medical therapy, ultrasound-guided uterine aspiration, and surgical excision through laparoscopic, transvaginal, or open abdominal approaches.^{5,6}

Systemic methotrexate alone is not recommended as a definitive treatment for caesarean scar ectopic pregnancy by the Society for Maternal-Fetal Medicine. Instead, surgical excision with uterine repair is effective, particularly when medical management fails.⁷ This case report details the successful management of a caesarean scar ectopic pregnancy through laparotomy, excision of the scar pregnancy, and two-layer uterine repair, following an inadequate response to systemic methotrexate. Early diagnosis and treatment are essential, as laparotomy and surgical scar excision have a success rate of approximately 96% in these cases.

CASE REPORT

A 31-year-old woman (G3P1L1A1) presented with 7 weeks of gestation age with spotting per vaginally. The patient did not have any abdominal pain or discomfort. She is married for 8 years and had a history of 1 caesarean delivery 4 year back and an abortion followed by suction and evacuation 7 months back. She had no other significant medical or surgical history. Her vitals were stable.

Investigations

All routine investigation was done along with serum B HCG. Value of B HCG was 13,895 Miu/ml. Transvaginal Ultrasound findings were suggestive of single gestational sac at the site of scar in lower uterine segment, total size of decidual reaction nearly 14*16*11 mm with CRL measuring 3.4 mm corresponding to 6 weeks. Sac is seen predominantly within the niche with residual myometrium thickness ~2.1mm. Sac is seen away from uterine arteries. Patient haemoglobin level was 8.6gm/dl and rest of the investigations were within normal limits (Figure 1).

Course in the hospital

Patient and attendants were provided all options of treatment modalities and their availability. Initially they opted for conservative management with systemic methotrexate. Her Hemoglobin was built up with 2 units of PRBC transfusion. She received 2 doses of injection methotrexate 50 mg intramuscularly on alternate days along with injection leucovorin. The B HCG level was 14,554miu/ml on day 4, they opted for surgical intervention and decision of laparotomy followed by scar excision was taken with informed consent. During

laparotomy, no free fluid or blood was noticed in the abdomen with normal fallopian tubes and ovaries. An approximately 2 cm bulge was noted above the bladder at the site of the previous cesarian section scar. Uterus was evacuated vaginally under direct supervision and sample obtained sent for histopathology. Abdominally uterine scar was excised and defect was closed in 2 layers. Patient stood procedure well.

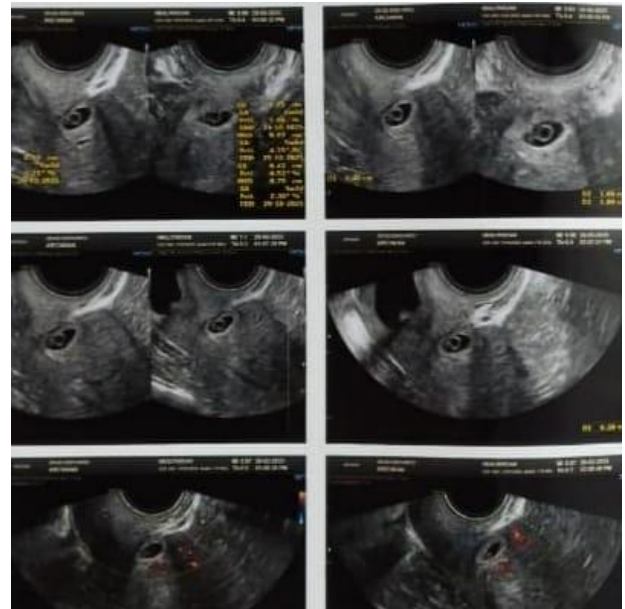


Figure 1: Transvaginal ultrasonography shows a gestational sac located mainly within the previous caesarean section scar in the lower uterine segment, featuring a crown–rump length of 3.4 mm and significantly thinned myometrium at about 2.1 mm, indicating a caesarean scar ectopic pregnancy.

DISCUSSION

Caesarean scar ectopic pregnancy (CSEP) is a rare but potentially life-threatening complication in which the gestational sac implants within the myometrial defect of a previous caesarean section. Increasing caesarean delivery rates and improved ultrasonographic diagnosis have contributed to its growing recognition. Early diagnosis and appropriate intervention are essential to prevent uterine rupture, severe haemorrhage, and placenta accreta spectrum disorders.^{8,9}

In the present case, a 31 year old woman presented at approximately seven weeks of gestation with vaginal spotting without abdominal pain. Transvaginal ultrasonography demonstrated a gestational sac predominantly located within the previous caesarean scar niche, with a residual myometrial thickness of approximately 2.1 mm. Her serum β -hCG level was 13,895 mIU/ml, and haemoglobin was 8.6 g/dl. The thin residual myometrium indicated a potentially vulnerable uterine wall, necessitating careful treatment planning and

counselling regarding the risks and benefits of available modalities.

Initially, the patient opted for medical management with systemic methotrexate. Following two intramuscular doses of 50 mg administered on alternate days, the β -hCG level increased to 14,554 mIU/ml on day four. This finding prompted reconsideration of the treatment strategy. However, an increase in β -hCG at this early time point alone does not definitively establish treatment failure; the overall clinical condition, treatment protocol, and serial β -hCG trends should guide subsequent decisions. The Society for Maternal-Fetal Medicine recommends against systemic methotrexate alone as definitive treatment for CSEP.⁹

Considering the clinical findings and the patient's preference, laparotomy with excision of the scar pregnancy and uterine repair was undertaken. Intraoperatively, a 2-cm bulge was identified at the previous caesarean scar, without haemoperitoneum. Controlled evacuation of the gestational tissue, excision of the involved scar, and two-layer uterine closure allowed removal of the pregnancy while preserving the uterus. Surgical excision is an established treatment option, with the approach selected according to clinical circumstances, expertise, and available resources.¹⁰⁻¹²

This case highlights the importance of early ultrasonographic diagnosis, informed shared decision-making, and individualised management. Postoperative monitoring of β -hCG until resolution and histopathological examination are important for confirming successful treatment. Counselling regarding future pregnancies and early first-trimester ultrasonography is also essential because recurrence and abnormal placentation remain concerns.^{8,9}

CONCLUSION

Caesarean scar pregnancy (CSP) is a rare and potentially life-threatening condition that requires early diagnosis and individualised management. Although several treatment modalities are available, a universally accepted gold-standard approach has not yet been established. This case demonstrates that laparotomy with excision of the caesarean scar ectopic pregnancy and uterine repair can be an effective treatment option in appropriately selected patients, particularly when medical management is unsuccessful or minimally invasive facilities are unavailable. Despite advances in minimally invasive surgery, laparotomy remains a valuable and practical approach in resource-limited settings. Timely intervention, informed counselling, and appropriate postoperative follow-up are essential to optimise maternal outcomes. Reporting individual cases can contribute to clinical

knowledge and help refine management strategies while aiming to preserve future fertility.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: Not required

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Cite this article as: Shrivastava AT, Verma S. Scar niche pregnancy successfully managed by laparotomy and excision of a cesarean scar ectopic pregnancy. *Int J Reprod Contracept Obstet Gynecol* 2026;15:4672-4.