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Case Report

Avoiding the knife: individualized management of cesarean scar pregnancy – insights from two cases

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ABSTRACT

Cesarean scar pregnancy (CSP) is a rare form of ectopic pregnancy implanted within a previous caesarean section scar. Early diagnosis is crucial due to risk of uterine rupture and severe hemorrhage. We report two cases of CSP diagnosed in the first trimester and successfully managed with conservative medical therapy. Both patients were hemodynamically stable and treated with methotrexate-based protocols and mifepristone-misoprostol with close follow-up and serial β -hCG monitoring. One case required dilatation and curettage while other case did not require it. But more importantly, neither of them required any major surgery. Early diagnosis using transvaginal ultrasonography allows successful conservative management in selected cases, avoiding major surgical intervention and preserving fertility.

Keywords: Cesarean scar pregnancy, Ectopic pregnancy, Methotrexate, Conservative management, Trans-vaginal ultrasound

INTRODUCTION

Cesarean scar pregnancy (CSP) is a rare subtype of ectopic pregnancy where implantation occurs within the fibrous scar of a previous caesarean section. Its incidence has increased with rising caesarean delivery rates and improved early pregnancy imaging.¹

The proposed mechanism involves implantation into a microscopic tract or dehiscence area within the scar, allowing trophoblastic invasion into the myometrium.² CSP is classified into endogenous and exogenous types, with the latter associated with higher risk of uterine rupture and hemorrhage.³

Clinical presentation varies from asymptomatic cases to vaginal bleeding or abdominal pain in early pregnancy. Misdiagnosis or delayed diagnosis can lead to life-threatening complications including uterine rupture, massive haemorrhage and the sometimes, hysterectomy.²

Transvaginal ultrasonography is the diagnostic modality of choice, demonstrating an empty uterine cavity and cervical canal, with a gestational sac embedded at the level of the caesarean scar and thin or absent myometrium between the sac and bladder.¹ MRI can be used to confirm the diagnosis.

Management strategies include medical, surgical, and combined approaches. In carefully selected stable patients, conservative medical management has shown favourable outcomes, particularly in early gestations with low-risk features.⁴

CASE REPORTS

Case 1

A 25-year-old woman, gravida 2 para 1 with previous 1 caesarean delivery, presented at 5 weeks of gestation with pain in lower abdomen with history of vaginal spotting.

She was hemodynamically stable. Serum β -hCG level was 6,931.

Transvaginal ultrasound revealed-Uterus with empty uterine cavity, gestational sac (1.2 cm) implanted in anterior lower uterine segment at caesarean scar site with cardiac activity absent and myometrial thickness: 2 mm.

A diagnosis of caesarean scar pregnancy was made, which was confirmed by pelvis MRI.

After all baseline investigations and proper counselling about available management options, the patient was managed with systemic methotrexate administration (1 mg/kg) and simultaneously mifepristone 200 mg orally and misoprostol 800mcg vaginally, 48 hours apart. Day 4 (6356) and day 7 (3298) β -hCG was done, and significant fall was noted.

The patient was followed with serial β -hCG levels and ultrasound, showing gradual resolution (Day 21 β -hCG= 21.1). No surgical intervention was required.

Outcome was uneventful recovery with complete resolution.



Figure 1: TVS showing empty endometrial cavity with gestational sac at scar site.

Case 2

A 29-year-old woman, gravida 4 para 2 living 2 with 2 previous caesarean sections, presented at 6 weeks of amenorrhea with complaints of pain in lower abdomen.

She was hemodynamically stable. Serum β -hCG level was 49,873.

Transvaginal ultrasound revealed-Empty uterine cavity.

Irregular, elongated gestational sac (2.2 cm) implanted in anterior lower uterine segment at caesarean scar site with cardiac activity present. Myometrial thickness was 5 mm.

A diagnosis of caesarean scar pregnancy was made, which was confirmed by pelvis MRI.

After all baseline investigations and proper counselling about available management options, the patient was managed with systemic methotrexate administration (1 mg/kg). Day 4 (71030) and day 7 (84050) β -hCG was done, and all values were in rising trend. Decision to repeat another dose of methotrexate was taken (1mg/kg) and now, patient was also administered Mifepristone 200 mg orally, followed by misoprostol 800 mcg vaginally 48 hours later. Review USG showed persistent cardiac activity without any significant change in CRL and a decision for dilatation and curettage was taken. Procedure was uneventful.

Serial β -hCG monitoring showed a progressive decline, and follow-up imaging confirmed resolution of pregnancy (Day 54 β -hCG = 4.2).

Outcome was uneventful recovery without complications.



Figure 2: MRI pelvis of the patient suggestive of caesarean scar pregnancy.

DISCUSSION

Caesarean scar pregnancy is increasingly recognized due to widespread use of early transvaginal ultrasonography. Early diagnosis is essential to prevent complications such as uterine rupture and severe hemorrhage.^{1,2}

Both cases in this series highlight successful conservative management in carefully selected hemodynamically stable patients. This aligns with current evidence suggesting that methotrexate-based therapy can be effective in early CSP with favorable prognostic factors such as low gestational age, stable clinical status, and absence of heavy vascularity.⁴

Transvaginal ultrasound remains the key diagnostic tool, and early identification allows for fertility-preserving treatment strategies. Conservative management, however, requires strict follow-up with serial β -hCG monitoring and imaging due to the risk of delayed hemorrhage or treatment failure.^{3,4}

Recent evidence supports individualized management rather than a uniform approach, with medical therapy being a viable first-line option in selected patients, particularly when diagnosed early.^{4,5}

In our series, early diagnosis and stable presentation were key factors contributing to successful outcomes, reinforcing the importance of early antenatal scanning in women with prior caesarean section. Dilatation and curettage as a sole modality in cesarean scar pregnancy is associated with a significant risk of hemorrhage due to the highly vascular implantation site, and therefore is discouraged as an isolated approach. However, like our second case, when performed following medical therapy, which reduces trophoblastic activity and vascularity, the risk of bleeding may be minimized. Current guidance from the society for maternal-fetal medicine emphasizes individualized and multimodal management strategies, including the use of methotrexate with or without additional interventions. In this context, combination therapy with medical management followed by controlled uterine evacuation represents a rational, uterus-preserving approach that allows faster resolution while maintaining safety in carefully selected patients.⁶

At present, there are no standardized guideline-defined cutoffs for β -hCG levels, gestational age, or presence of fetal cardiac activity in the management of cesarean scar pregnancy. Current recommendations, including those from the society for maternal-fetal medicine, emphasize individualized, case-based decision-making guided by clinical stability, imaging findings, and available expertise.⁶

CONCLUSION

Caesarean scar pregnancy is a rare but potentially serious condition. Early diagnosis using trans-vaginal

ultrasonography allows successful conservative management in selected patients. Methotrexate-based treatment can be effective in hemodynamically stable women, avoiding major surgical intervention and preserving fertility.

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