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Decoding the complexity of caesarean scar pregnancy: A rare and life-threatening complication

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Abstract
Caesarean scar pregnancy (CSP) is a rare and potentially life-threatening condition characterized by the implantation of a gestational sac within the scar tissue of a previous caesarean section (CS). Its incidence has been on the rise with the increasing rate of CS. This case report presents a 25 year old female of gravida 2, para 1 who developed CSP. At 7 weeks and 2 days of gestation, the patient presented with vaginal bleeding and rapidly deteriorating hemodynamics. Immediate resuscitation and blood transfusion were administered. Transvaginal ultrasound confirmed CSP, and surgical intervention became necessary due to uncontrolled bleeding. Intraoperatively, the placenta was found to be deeply adherent to the previous CS scar, requiring meticulous surgical techniques for its removal. The patient recovered successfully and was discharged in stable condition. This case report contributes to the understanding of CSP, highlighting the challenges and decision-making processes involved in its management. It reinforces the need for timely intervention and collaborative care in CSP cases, ultimately ensuring optimal outcomes for both mother and fetus.

Keywords: Caesarean scar pregnancy, gestational sac, hemorrhage, multidisciplinary approach, surgical management, placental adherence

Introduction
Caesarean scar pregnancy (CSP) is an exceedingly rare but potentially life-threatening condition where a pregnancy implants within the scar tissue of a previous caesarean section (CS). It poses a significant challenge to both patients and healthcare providers due to its potential for catastrophic hemorrhage and its increasing occurrence in recent years [1, 2]. We present a case study of a 25 years old female who experienced a CSP, highlighting the clinical presentation, management, and the intricate clinical decisions taken to ensure a successful outcome.

In the context of modern obstetrics, the prevalence of CS has steadily risen worldwide over the past few decades, contributing to an increased incidence of CSP. It is imperative to acknowledge that CSP remains a diagnostic and therapeutic enigma, often leading to delayed recognition and intervention, which can have dire consequences for both maternal and fetal health [3, 4].

The management of CSP is challenging, often requiring a multidisciplinary approach involving obstetricians, radiologists, anesthesiologists, and sometimes even interventional radiologists. This case serves as a testament to the importance of timely resuscitation, blood transfusion, and the readiness to transition from conservative management to hysterotomy when conservative measures fail. Furthermore, it underscores the unique aspect of CSP - the tendency for the placenta to adhere to the previous scar, necessitating meticulous surgical techniques [5, 6].

In this comprehensive case report, we aim to shed light on the intricacies of managing CSP, drawing attention to the importance of early detection and appropriate intervention. Through an analysis of the diagnostic challenges and treatment dilemmas faced in this case, we hope to contribute to the growing body of knowledge on CSP, ultimately improving outcomes for future patients.

Case Report
We present a compelling case of a 25-year-old gravida 2, para 1 woman who underwent her first lower segment cesarean section (LSCS) four years prior. At 7 weeks and 2 days gestation in her second pregnancy, she arrived at our center with a chief complaint of vaginal bleeding, a hallmark symptom of CSP. Her obstetric history was significant for a single previous CS, and she had no other relevant medical conditions.

Upon arrival, the patient exhibited hemodynamic instability, characterized by a pulseless state and severely decreased blood pressure. Immediate resuscitative measures were initiated, including intravenous fluid administration and a blood transfusion to stabilize her rapidly deteriorating condition.

An urgent transvaginal ultrasound was performed, revealing the presence of a gestational sac embedded within the previous LSCS scar. Further evaluation confirmed the diagnosis of CSP. The patient's case was complicated by massive vaginal bleeding, which prompted swift decision-making to ensure her survival.

Given the severity of the hemorrhage, our team activated a multidisciplinary approach. Anaesthesia services were urgently summoned, and the decision to proceed with hysterotomy was made when conservative measures failed to control the bleeding. During the surgical intervention, it became evident that the placenta had adhered firmly to the scar tissue from the previous CS.

The surgical team encountered the challenging task of delicately separating the deeply adherent placenta from the uterine scar. This intricate process demanded meticulous surgical skills to minimize blood loss and protect the patient's fertility. Fortunately, our team's expertise prevailed, and the procedure concluded successfully. The patient's vital signs stabilized, and postoperative monitoring showed no further episodes of hemorrhage.

The patient received postoperative care in the intensive care unit and was closely monitored for any signs of complications. Fortunately, she recovered well and was discharged in stable condition. Follow-up visits were scheduled to assess her postoperative recovery and to address any potential long-term implications.

Discussion

This case of CSP offers a unique opportunity to delve into the challenges posed by this rare but potentially life-threatening condition, while also comparing our findings with existing literature. CSP, defined as the implantation of a gestational sac within the scar tissue of a previous CS, has gained recognition for its rising incidence. In this discussion, we contextualize our case within the broader landscape of CSP management.

Our patient's presentation with vaginal bleeding and subsequent hemodynamic instability mirrors the classic clinical picture associated with CSP. The urgent need for resuscitation and blood transfusion aligns with the consensus in the literature, which emphasizes the importance of early intervention in cases of CSP.

The diagnostic confirmation of CSP through transvaginal ultrasound is consistent with established protocols. Furthermore, our case highlights the critical aspect of placental adherence to the previous CS scar, a feature known to complicate CSP management. The decision to proceed with hysterotomy, necessitated by uncontrolled bleeding, mirrors the experiences reported in prior studies. This intervention proved successful in our case, and meticulous surgical techniques played a pivotal role in achieving a favorable outcome [7, 10].

In comparison to existing studies, our case reaffirms the need for a multidisciplinary approach in managing CSP, emphasizing the collaboration between obstetricians, anesthesiologists, and surgeons. This approach has consistently shown positive outcomes in the literature, emphasizing the collective expertise required to navigate the complexities of CSP [11-16].

Although our patient recovered well and was discharged in stable condition, the long-term implications and fertility outcomes remain subjects of interest. Follow-up studies on fertility and pregnancy outcomes in individuals with a history of CSP are warranted to guide future clinical decisions [17, 18].

Conclusion

In conclusion, this case report contributes to the growing body of knowledge on CSP by highlighting the clinical challenges and decision-making processes involved in its management. This case report emphasized the need for vigilance in pregnant individuals with a history of previous CS. Early diagnosis, resuscitation, and timely surgical intervention remain the cornerstone of effective management, ultimately ensuring the best possible outcomes for both mother and fetus. This case also serves as a testament to the importance of a proactive and collaborative approach in managing high-risk obstetric situations and furthering our knowledge of the intricate challenges presented by CSP. Our findings align with existing literature, underscoring the critical importance of early recognition, resuscitation, and multidisciplinary collaboration in ensuring positive outcomes in CSP cases. Further research is needed to address long-term implications, but this case serves as a valuable addition to the collective understanding of this complex obstetric condition.

Conflict of Interest

Not available

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