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Failed Medical Management of a Caesarean Scar Pregnancy Leading to Manual Vacuum Aspiration and Hysterotomy: A Case Report

*Akanda M[1], Karim MR[2], Busreea RA[3], Begum F[4], Muktadira[5], Sen S[6], Mirza TT[7]

Abstract

Caesarean scar pregnancy (CSP) is a unique type of pregnancy that has been becoming more common due to the growing cesarean section rate. This case report is about a 36-year-old woman with Caesarean scar pregnancy who did not respond to medical management and later underwent successful surgery. The patient previously had two Caesarean section deliveries and three abortions; she was initially given two cycles of methotrexate. However, measurement of β-hCG titers and sonography established continuation of pregnancy at 9 weeks±3 days. Another attempt at medical management with misoprostol and mifepristone was also unsuccessful. Elevation of the β-hCG level was observed from 4165 mIU/mL to 33526 mIU/mL within a month, which was suggestive of a continuing pregnancy. Following those failed medical interventions, a manual vacuum aspiration (MVA) was also tried and failed. For further safety and wellbeing of the patient, hysterotomy under general anaesthesia was done. The case highlights several critical aspects of CSP management: monitoring in the form of serial β-hCG and ultrasound, the shortcomings of medical management, and the timing of the transition to surgery. The fact that performing MVA and hysterotomy after failed medical management signifies that healthcare settings should have more than one treatment options in such cases. Altogether, this paper adds to the number of studies on the management of CSP, highlighting tailored therapeutic methodologies and the importance of the follow-up period. It is the same way that it also poses a challenge regarding the timing of treatment intervention and stressing patient counsel on future pregnancy dangers after a cesarean section.

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Introduction

Cesarean scar pregnancy (CSP) is a type of ectopic pregnancy in which the trophoblast invades and settles in the previous cesarean section scar, which is rather a very rare occurrence.[1] CSP has been noted to have a rising trend, especially with the increasing rates of cesarean sections in the recent past. CSP is reported to take place in the range of 1 in 1,800 women to 1 in 2,500 women, and these women contribute to 6% of women with ectopic pregnancy in women with at least one prior operative delivery.[2,3] This condition is difficult to

1. *Dr. Marzia Akanda, Registrar, Department of Obstetrics & Gyane, Community Based Medical College Bangladesh.
2. Dr. Md. Rabeul Karim, Associate Professor and Head, Department of Surgery, Sheikh Hasina Medical College, Jamalpur.
3. Dr. Reeva Aireen Busreea, Associate Professor, Department of Obstetrics & Gyane, Community Based Medical College Bangladesh.
4. Dr. Ferdousi Begum, Associate Professor, Department of Obstetrics & Gyane, Community Based Medical College Bangladesh.
5. Dr. Muktadira, Associate Professor, Department of Radiology & Imaging, Community Based Medical College Bangladesh.
6. Professor Dr. Shila Sen, Professor and Head, Department of Obstetrics & Gyane, Community Based Medical College Bangladesh.
7. Professor Dr. Tayeeba Tanjin Mirza, Professor, Department of Obstetrics & Gyane, Community Based Medical College Bangladesh.

Address of Correspondence:
Email: marjzia12@gmail.com

manage and has the potential risk of developing life-threatening complications such as rupture of the uterus, severe bleeding, and hysterectomy where the condition is not detected early enough. Nevertheless, the exact etiology of CSP still remains unknown; however, traditional teaching is that it occurs as a result of a microscopic dehiscence in the scar of a previous Caesarean section in which the blastocyst is able to implant and embed itself into the myometrium.[4] The rise in the incidence of CSP underscores a need to exercise keen prenatal evaluation for those with previous history of cesarean section so that if detected early, appropriate management required to prevent adverse outcomes can be taken. The management of CSP is still problematic and has not yet reached a definite consensus on the standard of care.[5] The treatment options depend on the duration of pregnancy, size of the gestational sac, the absence or presence of fetal heart rate, Resource Manager: β-hCG levels, and fertility expectations. Treatment approaches are usually categorized as medical, surgical, and combined medical-surgical.[6,7] Methotrexate continuation in managing patients with early CSP is usually carried out in hemodynamically stable patients with no evidence of rupture. Methotrexate can be given orally or at the site of inflammation, although site-specific injections may have better outcomes and fewer side effects.[8] Nevertheless, the efficacy of medical management ranges from 60% to 80%, with some patients requiring multiple injections or other supplementary treatments. The predictive factors for treatment failure include urinary β-hCG levels that are above 1000 mIU/mL on the day of treatment, the presence of fetal cardiac activity, and treatment in the advanced second trimester. Other medical management products reported in the literature include mifepristone and misoprostol, either singly or in conjunction with methotrexate.[9] It has been used in some previous studies mainly for the early gestations, but its effectiveness compared to methotrexate alone is still under investigation. When attempts at medical management are ineffective or not advised, surgeons have to step in. Surgical procedures include dilatation and curettage, hysterotomy, hysteroscopy, laparoscopic removal, and more recently, transvaginal ultrasound-directed aspiration. Both are ideal for morphological lesions located in the vicinity of eloquent areas, but each approach has its own unique advantages and disadvantages, which may influence the choice based on the characteristics of the CSP and the skills of interventional physicians at the treating center.[9,10] Manual vacuum aspiration (MVA) is a minimally invasive technique that has been used safely and effectively in the management of failed medical treatment of CSP. For one, it seems less complicated in terms of implementation as compared to its counterparts; it is also cheaper and may also be a fertility-sparing procedure. However, this approach has its disadvantages: incomplete space evacuation, bleeding, and possible uterine perforation; thus, it is applicable only for carefully selected patients and only by experienced operators. The procedure can be made safer and more effective through the application of the ultrasound technology.[11,12] We are reporting a case of a 36-year-old woman with Caesarean scar section implantation with multiple prior failed medical attempts which was finally managed by MVA and hysterotomy. The case illustrates the difficulties of managing CSP and the need for ongoing vigilance and prompt intervention in the care of the patient. It raises the

question about the extent of the effectiveness of medical treatment and the necessity of a more complex, personalized approach to the problem. While exploring this case, we strive to expand the existing theory on CSP management and underscore the uniqueness of every patient. This paper will briefly describe the clinical features, diagnostic approach, previous therapies, and ultimately the surgical intervention to present an educational case for clinicians to guide clinical practice.

Case Description

A 36-year-old Muslim, housewife hailing from Bhaluka Upazilla under Mymensingh district of Bangladesh, presented with a diagnosed Caesarean scar pregnancy (CSP) that was managed medically initially and then referred to our hospital. The patient had an obstetric history of having undergone two Caesarean operations and three abortions. Her first day of last menstruation (LMP) on July 25, 2024. This patient was earlier diagnosed with CSP and had been treated using two cycles of chemotherapy. However, an elevation of the β-hCG level was observed from 4165 mIU/mL to 33526 mIU/mL within a month, which was suggestive of a continuing pregnancy. Nevertheless, in her follow-up visit, attending physician reassured the patient and established the persistence of the ectopic pregnancy confirmed by the β-hCG and initial ultrasound dating the pregnancy as 9 weeks±3 days. The patient stated that she had had scanty, non-clotting, reddish vaginal discharge 42 days before admission. On admission, general examination included pale appearance, but her physiological parameters were within normal range. Abdominal examination revealed a soft, non-tender abdomen with a transverse incision mark suggesting previous lower uterine Caesarean section (LUCS) operations. On per vaginal examination, there was no active bleeding or discharge, and the cervical os was tender. As there was no response to previously done medical manoeuvre, it was planned to perform manual vacuum aspiration (MVA) on the same day of admission. The patient continued to have per vaginal bleeding after MVA because we could not completely remove the products of conception. Then, one week later, a hysterotomy was done under general anaesthesia in order to remove any remaining products of conception (Fig. 1). The bleeding was controlled and the patient regained normal physiological conditions.

Fig. 1: Par operative findings in Cesarean scar pregnancy after evacuation of uterus

Discussion

Cesarean scar pregnancy in this woman brings the following issues into our consideration in three major aspects: diagnosis, management, and peculiarities of treatment. Currently, diagnosis of CSP is mostly based on clinical history, β-hCG measurements, and sonography.

In this case, both the absolute levels and, most notably, the fluctuations of the β-hCG were significant. The follow-up measurements from 4,165 mIU/mL to 22,893 mIU/mL in a time span of 17 days were indicative of an ongoing pregnancy. The later decrease to 1,425 mIU/mL may have indicated effective treatment, but the spike to 33,526 mIU/mL in the following week reestablished the CSP. This pattern stresses the necessity of serial measurements of β-hCG and their correlation with ultrasound results for more accurate diagnosis and proper treatment control.[12,13] The management of this case started with medical treatment and followed the following steps. The first attempt with methotrexate is typical for CSP management at early gestation since it is used as a first-line therapy. Methotrexate is a folic acid antagonist that affects rapidly dividing cells, such as trophoblasts, by interfering with DNA synthesis.[13] However, its specificity is reduced for cases with high levels of β-hCG or the existence of fetal cardiac motions, which might have been present in this case. The second medical management attempt using misoprostol and mifepristone is another strategy in the medical management of cesarean Scar pregnancy. Mifepristone, a selective progesterone receptor antagonist, with misoprostol, a prostaglandin E1 analogue, is used for medical abortion.[14] However, its success rate has not been properly documented in CSP as it is in intrauterine pregnancy, and the failure in this case again demonstrates the difficulty of managing CSP medically. The choice to proceed with MVA after failed medical management is consistent with the contemporary guidelines for CSP management. Some of the benefits of MVA include the following by hysterotomy: it is less invasive, and it may not affect fertility.[15] However, some of the dangers include the risks of developing heavy bleeding and incomplete evacuation, especially in cases of deeply located CSP needed hysterotomy. The presence of a 10-week-sized uterus with a large amount of conception product also indicates the time of intercession was relatively late in the pregnancy cycle. This leads to several issues, one of them being the question as to when the right time is to escalate the treatment given that medical management was attempted.[16] Surgical intervention might be adopted as soon as any medical treatment failure is identified and it ensures lowering CSP related risks at a late stage. This case also shows that follow-up of CSP management is of a critical concern that should not be overlooked. The failure to expel the pregnancy even after two attempts underlines the importance of post-treatment monitoring, as well as the preparedness to advance treatment if required.[17] Our patient had history of two Caesarean section operations and multiple abortions. Under the circumstances, the patient was informed about the risk of subsequent pregnancies.

Conclusion

This case report demonstrated that CSP is not a simple entity, and the fact that medical treatments were tried but failed is one of many challenges that might be encountered by the physician caring for a patient with this condition. It emphasizes the need for patient-specific interventions, particular attention, and proper timely decision in terms of escalation of care. This situation proves the effectiveness of manual vacuum aspiration and hysterotomy following first-line medical management and the importance of having other alternatives for the

patients. Further studies should be made on the search for better medical management of the condition and on the definition of conditions that may respond better to surgical intervention.

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