

CONSERVATIVE MANAGEMENT OF CESAREAN SCAR PREGNANCY WITH METHOTREXATE: A CASE REPORT

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ABSTRACT:

Cesarean scar pregnancy is a rare form of ectopic pregnancy associated with potentially severe complications, including hemorrhage, uterine rupture, and the need for emergency surgical intervention. This case describes a 39-year-old G5P3L3A1 woman at approximately 5+1 weeks of gestation with a history of three previous lower-segment cesarean sections who presented with vaginal bleeding. Transvaginal ultrasonography demonstrated a low anterior gestational sac related to the previous cesarean scar with associated vascularity, while pelvic magnetic resonance imaging further supported implantation at the scar site. Conservative treatment was initiated with ultrasound-guided transvaginal intrasac methotrexate using a 20-gauge Chiba needle, with 50 mg methotrexate in 2 mL instilled directly into the gestational sac. Serial serum beta-human chorionic gonadotropin (beta-hCG) levels decreased from 904 mIU/mL on 20 July 2026 to 742 mIU/mL on 24 July 2026 and further to 122.2 mIU/mL on 4 August 2026, representing an overall decline of approximately 86.5% from baseline. Follow-up ultrasonography demonstrated regression and collapse of the gestational sac with reduced vascularity, supporting a marked biochemical and sonographic response to treatment. Additional methotrexate-based therapy was subsequently documented. Despite the favorable initial response, recurrent vaginal bleeding later required referral for further management. This case highlights the potential role of conservative methotrexate-based management in carefully selected, hemodynamically stable patients with early cesarean scar pregnancy and emphasizes the importance of serial beta-hCG monitoring, repeat ultrasonography, and readiness for treatment escalation.

KEYWORDS: Cesarean scar pregnancy; Methotrexate; Ectopic pregnancy; Transvaginal ultrasonography; beta-hCG

INTRODUCTION

An uncommon kind of ectopic pregnancy known as cesarean scar pregnancy (CSP) occurs when the gestational sac adheres to or is close to the myometrial defect created by a prior cesarean surgery. It is a relatively uncommon condition, but its diagnosis has become more common with the rising trend of cesarean section and the advances in transvaginal ultrasonography in early pregnancy.

The significance of CSP lies in the potential for significant postpartum hemorrhage, rupture of the uterus, placenta accreta spectrum, emergency hysterectomy, and substantial maternal morbidity, if progression of pregnancy occurs in a scar of deficient uterus (Hanacek et al., 2022). Early diagnosis is therefore a key focus in preventing potentially life-threatening complications.

Previous Cesarean Delivery is the most valuable anatomical risk element context for improvement of CSP but can also follow one or multiple Cesarean deliveries. The abnormal implantation is believed to be via small passages or areas of thinning of the scarred lower uterine segment. Symptoms may include early pregnancy without symptoms, uterine pain or bleeding, or sudden heavy bleeding. Progressive invasion of trophoblastic tissue and myometrium around the scar may be possible if the scar is not recognized, which can lead to an increase in the risk of rupture and heavy bleeding (Jo et al., 2019). Rupture cases demonstrate the need for correct and timely diagnosis as a key factor in preventing potentially serious complications (Odgers et al., 2019).

To evaluate the position of the gestational sac, the residual myometrial thickness and peri trophoblastic vascularity, transvaginal ultrasonography with color Doppler is the most important method. The modern diagnostic criteria help to differentiate between CSP and cervical pregnancy, low-lying intrauterine pregnancy, and miscarriage in progress (Pekar-Zlotin et al., 2023).

When ultrasonographic localization is not certain, or when the relationship of pregnancy, scar, bladder and adjacent myometrium is unclear, magnetic resonance imaging may be useful. Treatment is individualized as no one-size-fits-all approach works for everyone. Global current registry information shows significant variation in treatment based on gestational age, vascularity, viability, scar characteristics, symptoms, and expertise available (Kaelin Agten et al., 2024). Current guidance from experts focuses on active management of labor as it has several risks related to bleeding and placentation (Society for Maternal-Fetal Medicine [SMFM] et al., 2020). These may be used individually or in combination and include surgical methods, ultrasound-guided procedures, uterine artery embolization, hysteroscopic methods and medical therapies. Methotrexate plays a significant role in the conservative managing of pregnancy, especially in carefully selected cases in early pregnancy. A systematic review and meta-analysis showed that

methotrexate-based therapy can produce good results in the right patients with CSP, but other modalities may be necessary in certain patients (Salari et al., 2020).

Non-surgical treatment is especially appealing when uterus preservation and avoidance of major surgery is a priority (Joshi et al., 2023). Intra-trophoblastic administration directly into the gestational sac might improve delivery to the trophoblastic tissue but reduce systemic exposure and medical methods have been reported using methotrexate (Salvi et al., 2024). Comparative analysis shows that the outcomes of treatment and complications rates are different between therapeutic modalities (Alameddine et al., 2024).

The literature on non-tubal ectopic pregnancy management also suggests that care is best provided on a case-by-case basis, even though there is still limited quality of comparative evidence to support this (Long et al., 2020).

This case report discusses a three previous cesarean delivery scar pregnancy managed with ultrasound-guided intra-sac methotrexate administration followed by medical management and close follow up for a 39-year-old G5P3L3A1 patient. This is to outline the diagnostic, therapeutic, biochemical and sonographic aspects of conservative methotrexate treatment. This scope covers clinical presentation, ultrasound/MR scan evaluation, local treatment, serial beta-hCG, sonographic response and bleeding. The goal is to emphasize the potential for early success with conservative therapy and the need for careful monitoring due to the possibility of subsequent biochemical and imaging deterioration despite early biochemical and imaging improvement.

2. MATERIALS AND METHODS

2.1 Case Design and Clinical Data Sources

Report is a clinical case report for a single patient, from the information available in the hospital records, diagnostic imaging, laboratory investigations, treatment notes, procedural documentation and follow-up records. Clinical data was obtained sequentially from obstetric examination sheets, transvaginal ultrasound and Doppler records, pelvic MRI, procedure notes, vital sign monitoring charts, admission notes and follow-up notes. Information that identified the patient was removed from the case description.

The clinical data that were retrieved were the following: presenting symptoms, gravidity and parity, gestational age, previous cesarean history, hemodynamic status, baseline laboratory data, imaging characteristics, treatment details, serial serum beta-hCG levels, follow-up ultrasonographic findings, and subsequent clinical events.

2.2 Diagnostic Evaluation

Transvaginal ultrasonography with color Doppler was used mainly for the diagnostic assessment, while the pelvic magnetic resonance imaging was used as an additional examination. An ultrasonographic evaluation of the location and morphology of the gestational sac, the relationship of the gestational sac with the previous cesarean scar, the occurrence of surrounding vascularity, fetal cardiac activity, myometrial thickness, and presence of free fluid in the pelvis was performed. The differential diagnosis of cervical ectopic pregnancy was first raised due to the low placement of the gestational sac.; however, subsequent pelvic MRI clarified its relationship with the prior cesarean scar and confirmed the diagnosis of pregnancy with a cesarean scar.

2.3 Laboratory and Biochemical Monitoring

General clinical condition and eligibility for methotrexate treatment were evaluated through review of the baseline biochemical investigations. Biochemical response was determined by quantitative serum beta-hCG.

The percentage decline was calculated as:

Percentage decline = $[(\text{Initial } \beta\text{-hCG} - \text{Follow-up } \beta\text{-hCG}) / \text{Initial } \beta\text{-hCG}] \times 100$

This corresponded to an approximately 17.9% decline over four days. Continued biochemical surveillance demonstrated a further decline in serum $\beta\text{-hCG}$ to 122.2 mIU/mL on 4 August 2026 following methotrexate-based treatment.

2.4 Therapeutic Procedure and Follow-Up Assessment

After the diagnosis and counseling, conservative medical management was carried out. Intrasac injection of methotrexate was done transvaginally, using ultrasound guidance and aseptic precautions. Post-treatment evaluation included serial clinical examinations, vital-sign monitoring, quantitative measurement of beta-hCG, and repeat ultrasonography and Doppler. A combination of clinical status, beta-hCG trend and sonographic changes were used to assess treatment response, not solely one parameter.

2.5 Ethical Considerations

Records of informed consent for therapeutic procedure as well as counselling about the possible complications of the therapy were available. The manuscript does not contain any patient-identifying information.

3. Case Presentation

3.1 Patient Profile and Presenting Features

A 39-year-old gravida 5, para 3, living 3, abortion 1 (G5P3L3A1) woman presented to the clinic at about 5 weeks and 1 day of gestation with bleeding and spotting from the vagina in early pregnancy. Her obstetric history was complicated by 3 prior cesarean sections, the most recent being about 8 years prior. For assessment, she was overall hemodynamically stable. Blood pressure was documented at serial observations to be around 100-120/70 mmHg, with a pulse of about 80-90 beats/min, and oxygen saturation of 97-99%. The abdominal examination was generally soft and non-tender, and she was conscious, oriented and afebrile (Table 1).

Table 1. Baseline clinical and obstetric characteristics

Characteristic	Finding
Age	39 years

Gravidity/parity	G5P3L3A1
Gestational age	Approximately 5+1 weeks
Previous cesarean deliveries	3
Interval since last LSCS	Approximately 8 years
Presenting feature	Vaginal bleeding/spotting
Hemodynamic status	Stable
Blood group	O positive
Final diagnosis	Cesarean scar pregnancy

3.2 Baseline Laboratory Findings

There were no significant laboratory findings of hepatic or renal dysfunction at baseline. Serum urea of approximately 21 mg/dL, creatinine of 0.8 mg/dL, total bilirubin of 0.4 mg/dL, aspartate aminotransferase of approximately 25 U/L, alanine aminotransferase of approximately 17 U/L, sodium of approximately 139 mmol/L, and potassium of approximately 4.3 mmol/L were determined to be representative values. The patient's blood type was O+ve. The overall clinical assessment was used as a basis for these findings, which indicated the feasibility of medical treatment with methotrexate.

4. Diagnostic Assessment

4.1 Transvaginal Ultrasonography and Doppler Findings

An early gestational sac in the inferior anterior uterine section near the prior surgical scar was discovered by transvaginal ultrasonography. A single examination reported a gestational sac size of about 1.4 cm, and a yolk sac was noted. The recorded early exam failed to show fetal cardiac activity. Thinning of the residual myometrial layer at the implantation site was observed and color Doppler showed the presence of surrounding vascularity around the lesion. During one of the tests, there was no The cul-de-sac had free fluid. Color Doppler ultrasonography revealed the vascularity surrounding the cesarean scar and the gestational sac at the scar site (Figure 1a). There was noticeable peritrophoblastic vascularity surrounding the scar-site gestational sac (Figure 1b). The lower anterior uterine section contained the low-lying gestational sac by grayscale transvaginal ultrasonography (Figure 1c), and an additional grayscale view revealed its association with the previous cesarean scar (Figure 1d).

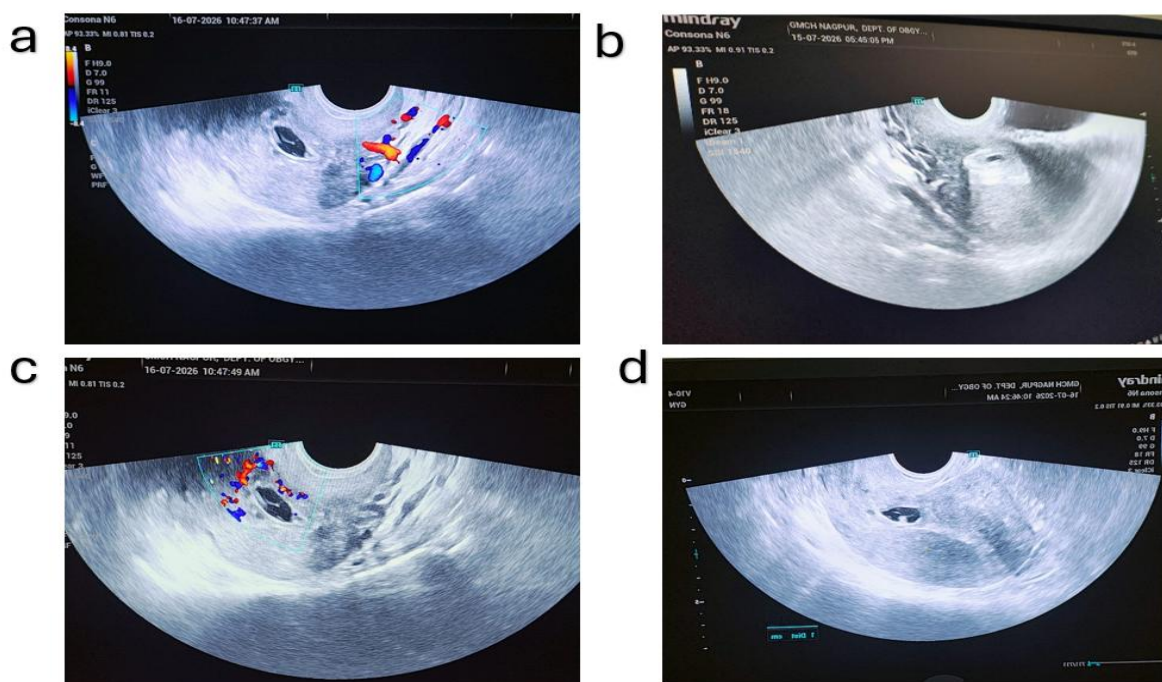


Figure 1. Transvaginal ultrasonographic features of cesarean scar pregnancy: (a) color Doppler image showing the gestational sac at the scar site with adjacent vascularity; (b) color Doppler image demonstrating prominent peritrophoblastic vascularity; (c) grayscale transvaginal image showing the low-lying gestational sac in the lower anterior uterine segment; and (d) grayscale transvaginal image demonstrating the relationship of the gestational sac to the previous cesarean scar

4.2 Magnetic Resonance Imaging and Final Diagnosis

The early sonographic finding was cervical ectopic gestation since it was difficult to distinguish very low implantation from a true scar pregnancy. Additional anatomical information was gained from pelvic MRI. The uterus was anteverted, and the lower part of the uterus showed the gestational sac, or changed signal-intensity lesion, in relation to the anterior uterine wall and the preexisting surgical scar. The gestational sac in the prior cesarean scar gave the MRI impression of an ectopic pregnancy. A significant adnexal mass was not seen, and both ovaries were normal in size and signal intensity. This final diagnosis was supported by obstetric history and imaging results.

5. Therapeutic Intervention

5.1 Counselling and Ultrasound-Guided Intrasc Methotrexate

Conservative medical management was chosen due to the early diagnosis of the pregnancy and initial hemodynamically and clinically stable patient. Severe hemorrhage, a possible blood transfusion, an emergent operative intervention, laparotomy, and possible hysterectomy were explained to the patient and family in case of failure to respond to the treatment or uncontrollable bleeding. Intrasc methotrexate was injected transvaginally on 20 July 2026 using ultrasound guidance. A 20-gauge Chiba needle was introduced into the gestational sac under real-time ultrasonographic guidance under aseptic precautions and informed consent. Direct instillation of methotrexate 50 mg in 2 mL directly into the sac was performed. This was well tolerated and the patient was immediately stable. Additional treatment records in the subsequent continuation records also showed methotrexate treatment (including an entry of approximately 200 mg of methotrexate).

Table 2. Primary therapeutic intervention and monitoring

Parameter	Documented detail
Date	20 July 2026
Approach	Conservative medical management
Procedure	USG-guided transvaginal intrasc methotrexate
Needle	20-gauge Chiba needle
Methotrexate dose	50 mg in 2 mL
Immediate response	Procedure tolerated; vitally stable
Monitoring	Vitals, serial beta-hCG and repeat ultrasound

6. Follow-Up and Clinical Outcome

6.1 Biochemical Response

The quantitative serum beta-hCG level was 904 mIU/mL on 20 July 2026. On 24 July 2026, the level decreased to 742 mIU/mL, representing a reduction of 162 mIU/mL, or approximately 17.9% over four days. Continued biochemical monitoring demonstrated a further decline to 122.2 mIU/mL on 4 August 2026. Overall, serum beta-hCG decreased by approximately 86.5% from the initial value, indicating a marked biochemical response to methotrexate-based treatment (Figure 2). However, the declining beta-hCG trend was interpreted together with the patient's clinical status and follow-up ultrasonographic findings and was not considered evidence of complete resolution on its own.

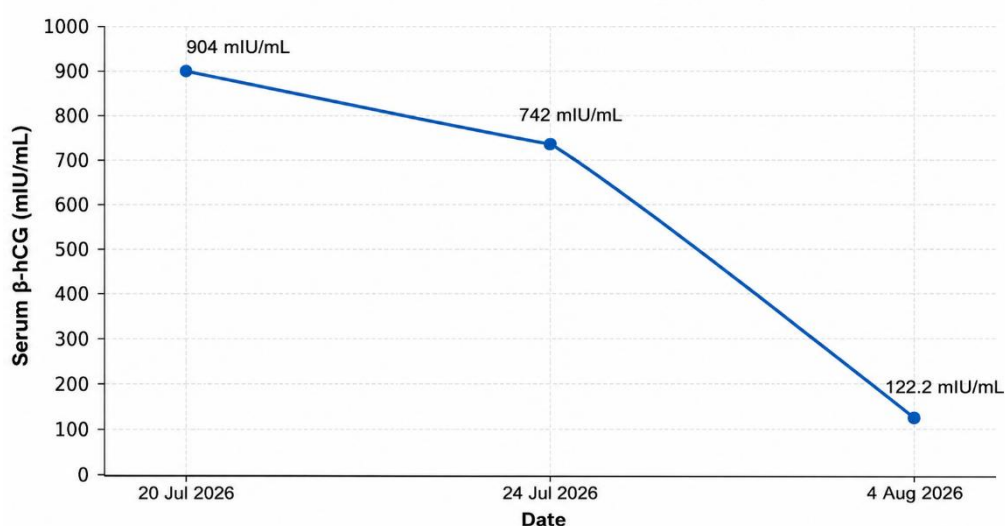


Figure 2. Serial decline in serum beta-hCG during methotrexate-based management of cesarean scar pregnancy

6.2 Sonographic and Clinical Follow-Up

Follow-up ultrasonography after methotrexate treatment showed regression and collapse of the gestational sac with reduced vascularity at the cesarean scar site (Figure 3). These findings corresponded with the progressive decline in beta-hCG to 122.2 mIU/mL. The patient remained hemodynamically stable during early follow-up; however, recurrent vaginal bleeding was later reported, requiring further referral and management (Table 3). Follow-up ultrasonography after methotrexate treatment demonstrated regression and collapse of the gestational sac with reduced vascularity at the cesarean scar site (Figure 3a–d). Figure 3a shows the post-treatment grayscale appearance of the scar implantation site, Figure 3b demonstrates reduced vascularity on color Doppler, Figure 3c shows further regression of the gestational sac, and Figure 3d demonstrates a small residual/collapsed gestational sac with measurements of approximately GS 0.34 cm and MSD 0.32 cm.

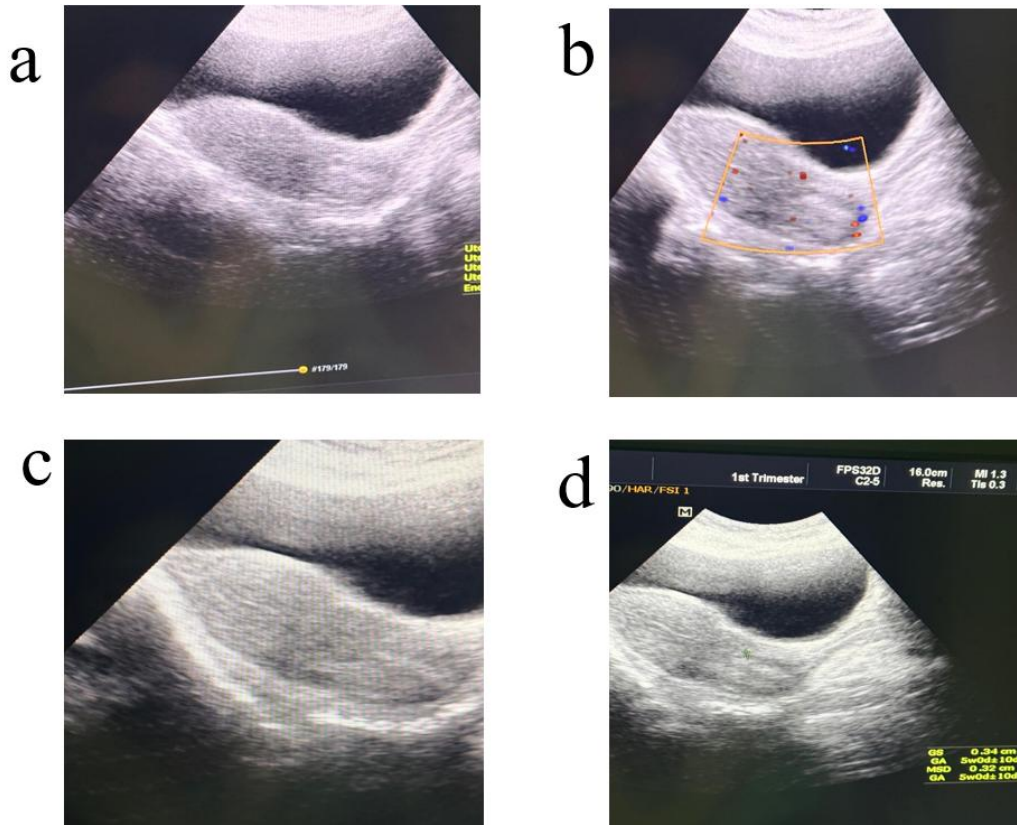


Figure 3. Follow-up ultrasonographic findings after methotrexate treatment: (a) grayscale image showing regression and collapse of the gestational sac at the cesarean scar site; (b) color Doppler image demonstrating reduced vascularity around the scar implantation site; (c) additional grayscale view showing further regression of the gestational sac; and (d) grayscale image demonstrating a small residual/collapsed gestational sac with measurements of approximately GS 0.34 cm and MSD 0.32 cm

Table 3. Chronological clinical course and follow-up

Time point	Key finding or event
Initial presentation	Early pregnancy with vaginal bleeding/spotting; history of three previous LSCS
Initial imaging	Low anterior gestational sac related to the previous cesarean scar with surrounding vascularity
MRI assessment	Implantation at the previous cesarean scar site supported
20 July 2026	Serum β -hCG 904 mIU/mL; USG-guided transvaginal intrasac methotrexate 50 mg/2 mL administered
24 July 2026	Serum β -hCG decreased to 742 mIU/mL, representing a 17.9% decline
4 August 2026	Serum β -hCG further decreased to 122.2 mIU/mL, indicating marked continued biochemical response
Follow-up USG	Regression/collapse of the gestational sac with reduced vascularity at the cesarean scar site; small residual gestational sac noted on follow-up imaging (Figure 3a–d)
Later follow-up	Recurrent/active vaginal bleeding reported; further referral and continued management advised

7. DISCUSSION

The present case highlights some of the clinically relevant points of early diagnosis and conservative management of CSP. The patient was a 39-year-old, 5+1 weeks pregnant, and was delivered cesarean three times most recently about eight years prior. For abnormal implantation within scar defect, it is important to have a good anatomical background, which is achieved by repeated cesarean delivery. Case series published have also shown large variations in clinical

presentation and treatment needs in women with CSP, further emphasizing the importance of individualized assessment rather than a blanket management plan (Heidar et al., 2021).

Given its presentation as early as vaginal bleeding, imaging assessment was possible before the onset of hemodynamic instability. A low anterior sac identified by transvaginal ultrasonography, as well as surrounding vascularity, were associated with the previous cesarean scar. One early evaluation suggested a cervical ectopic pregnancy and shows the challenge of the diagnosis of low implantation. From experience in referral centers, localization is important as it is essential to the different management of each ectopic pregnancy, which may be scar, cervical, or other (Wu et al., 2023). MRI was then used to clarify the gestational sac and the previous scar, further establishing the diagnosis of CSP. The fetus's gestational age, beta-hCG level, vascularity, cardiac activity, myometrial thickness, bleeding, and institutional expertise all influence the course of treatment for CSP. Medical, surgical, and combined strategies can all be considered in individual patients in a single-center experience (Al-Jaroudi et al., 2021). Early gestation and initial hemodynamic stability allowed for a trial of conservative management in this case. Targeted injection of 50 mg of methotrexate into the gestational sac via ultrasound guidance ensured treatment without an immediate need for major surgery. Such conservative management has also been documented in combination with surgical management, highlighting the need to tailor treatment based on the patient's clinical features (Shoai et al., 2024).

A biochemical response was initially demonstrated by a decrease in serum β -hCG from 904 to 742 mIU/mL over four days, representing a 17.9% reduction. Continued surveillance subsequently showed a further decline to 122.2 mIU/mL on 4 August 2026, corresponding to an overall reduction of approximately 86.5%. This decline was accompanied by ultrasonographic regression/collapse of the gestational sac and reduced vascularity. The reduction of beta-hCG levels during methotrexate treatment in CSP shows that this reduction may be observed from relatively high levels of beta-hCG, but extended monitoring may be required (Zikopoulos et al., 2023). The biochemical decline in the present case was accompanied by sonographic collapse of the gestational sac and decreased vascularity, which were complementary evidence of decreased trophoblastic activity. However, a drop in the beta-hCG level is not a sole criterion for successful treatment.

After methotrexate, there may be some remaining trophoblastic tissue, which may need further treatment. Hysteroscopic removal of persistent trophoblastic tissue following methotrexate is reported, therefore, imaging surveillance should be continued even if biochemical tests are falling (Simon et al., 2024). Medical management has also been demonstrated to leave behind ectopic tissue that cannot be well reflected by serum markers, as evidenced by direct visualization of such tissue (Hua et al., 2024).

The present patient underwent additional methotrexate therapy during the course. The failure to achieve a primary treatment response is consistent with literature describing the variable effectiveness of medical therapy, and treatment escalation follows that (Al Gadeeb et al., 2019). Risk factor analyses of methotrexate and suction curettage suggest that clinical and pregnancy-related factors affect the therapeutic response and need for further intervention (Mu et al., 2023). In addition, network meta-analysis revealed significant variations between the effectiveness and safety of different treatment modalities used by CSPs, which aids in personalizing treatment choices and escalating treatment when needed (Fu et al., 2024).

One feature of this case that was particularly important was the presence of recurrent or active vaginal bleeding despite decreases in beta-hCG and sonographic vascularity. This finding illustrates the fact that biochemical improvement does not rule out the risk of hemorrhage in the early stage. Failure to achieve systemic methotrexate with subsequent laparoscopic resection is another indication that medical treatment may be inadequate and surgical salvage should be kept on the table (Pirtea et al., 2019). Staged or combined surgery in select cases has thus been recommended to achieve a balance between uterine preservation and the risk of bleeding (Damiani et al., 2024).

In the present case, conservative methotrexate-based treatment should be considered as one of the therapeutic options in early diagnosed hemodynamically stable women. However, the subsequent bleed episode highlights the need for serial beta-hCG levels, repeated Doppler, good clinical judgement and readiness for escalation. Reports of unusual ectopic scar implantation also emphasize the importance of early diagnosis and treatment of the individual case to limit maternal morbidity.

8. CONCLUSION

Cesarean scar pregnancy is a rare yet serious form of ectopic pregnancy that requires early recognition, accurate localization, and individualized management. The present case involved a 39-year-old G5P3L3A1 woman at approximately 5+1 weeks of gestation who presented with vaginal bleeding after three previous cesarean deliveries. The cesarean scar implantation was confirmed by transvaginal ultrasonography and pelvic magnetic resonance imaging. Conservative treatment consisted of ultrasound-guided transvaginal intrasac methotrexate followed by close clinical and biochemical monitoring. Follow-up ultrasonography demonstrated regression and collapse of the gestational sac with reduced vascularity, while serial serum beta-hCG levels decreased from 904 mIU/mL on 20 July 2026 to 742 mIU/mL on 24 July 2026 and further to 122.2 mIU/mL on 4 August 2026, representing an overall decline of approximately 86.5% from baseline. These biochemical changes were supported by post-treatment ultrasonographic evidence of gestational sac regression and reduced vascularity. Despite this favorable response, recurrent vaginal bleeding later required further referral, indicating that biochemical and sonographic improvement does not necessarily confirm complete clinical resolution. This case supports the potential role of conservative methotrexate-based management in carefully selected, hemodynamically stable patients with early cesarean scar pregnancy and emphasizes the importance of serial beta-hCG monitoring, repeat Doppler ultrasonography, continued assessment of bleeding, and readiness for treatment escalation when required.

REFERENCES

1. Hua, A., Igel, C., Fridman, D., & Ngai, I. (2024). Direct visualization of a cesarean scar ectopic pregnancy after medical management. *American Journal of Case Reports*, 25, e944396. <https://doi.org/10.12659/AJCR.944396>
2. Simon, A., Hanocq, F., Delbecque, K., Kridelka, F., & Nervo, P. (2024). TruClear treatment of caesarean scar pregnancy interrupted after methotrexate injection. *Revue Medicale de Liege*, 79(7-8), 527-531.
3. Society for Maternal-Fetal Medicine (SMFM), Miller, R., Timor-Tritsch, I. E., & Gyamfi-Bannerman, C. (2020). Society for Maternal-Fetal Medicine Consult Series #49: Cesarean scar pregnancy. *American Journal of Obstetrics and Gynecology*, 222(5), B2-B14. <https://doi.org/10.1016/j.ajog.2020.01.030>
4. Wu, B. T., Feld, Z., & Creinin, M. D. (2023). Management of cesarean scar ectopic pregnancies at an academic referral center: A case series. *Contraception*, 123, 110021. <https://doi.org/10.1016/j.contraception.2023.110021>
5. Al-Jaroudi, D., Aboudi, S., & Baradwan, S. (2021). Different treatment modalities for cesarean scar pregnancies: A single-center experience and literature review. *Archives of Gynecology and Obstetrics*, 303(5), 1143-1151. <https://doi.org/10.1007/s00404-020-05831-9>
6. Mu, L., Weng, H., & Dong, Y. (2023). Analysis of risk factors for patients with cesarean scar pregnancy treated with methotrexate combined with suction curettage. *Archives of Gynecology and Obstetrics*, 308(3), 913-918. <https://doi.org/10.1007/s00404-023-07049-x>
7. Al Gadeeb, S., Al Gadeeb, M., Al Matrouk, J., Faisal, Z., & Mohamed, A. (2019). Cesarean scar - unusual site of ectopic pregnancy: A case report. *Cureus*, 11(10), e5970. <https://doi.org/10.7759/cureus.5970>
8. Salari, N., Kazeminia, M., Shohaimi, S., Nankali, A. A., & Mohammadi, M. (2020). Evaluation of treatment of previous cesarean scar pregnancy with methotrexate: A systematic review and meta-analysis. *Reproductive Biology and Endocrinology*, 18(1), 108. <https://doi.org/10.1186/s12958-020-00666-0>
9. Pekar-Zlotin, M., Zur-Naaman, H., Maymon, R., Tsviban, A., & Melcer, Y. (2023). Outcomes of cesarean scar pregnancies in early gestation according to the new Delphi consensus criteria. *Journal of Ultrasound in Medicine*, 42(9), 2039-2044. <https://doi.org/10.1002/jum.16222>
10. Odgers, H. L., Taylor, R. A. M., Balendran, J., Benness, C., & Ludlow, J. (2019). Rupture of a caesarean scar ectopic pregnancy: A case report. *Case Reports in Women's Health*, 22, e00120. <https://doi.org/10.1016/j.crwh.2019.e00120>
11. Jo, E. J., Cha, H. H., & Seong, W. J. (2019). Delayed diagnosis of a cesarean scar pregnancy: A case report. *Journal of Medical Case Reports*, 13(1), 53. <https://doi.org/10.1186/s13256-019-1983-1>
12. Fu, P., Sun, H., Zhang, L., & Liu, R. (2024). Efficacy and safety of treatment modalities for cesarean scar pregnancy: A systematic review and network meta-analysis. *American Journal of Obstetrics & Gynecology MFM*, 6(8), 101328. <https://doi.org/10.1016/j.ajogmf.2024.101328>
13. Pirtea, L., Balint, O., Secosan, C., Grigoras, D., & Ilina, R. (2019). Laparoscopic resection of cesarean scar ectopic pregnancy after unsuccessful systemic methotrexate treatment. *Journal of Minimally Invasive Gynecology*, 26(3), 399-400. <https://doi.org/10.1016/j.jmig.2018.06.003>
14. Zikopoulos, A., Loukopoulos, T., Galani, A., Kechagias, K., Skentou, C., Zikopoulos, K., & Kolibianakis, E. (2023). Methotrexate treatment of very high beta-HCG ectopic pregnancy on previous cesarean scar: A case report. *Radiology Case Reports*, 18(11), 4106-4109. <https://doi.org/10.1016/j.radcr.2023.08.051>
15. Alameddine, S., Lucidi, A., Jurkovic, D., Timor Tritsch, I., Coutinho, C. M., Ranucci, L., Buca, D., Khalil, A., Jauniaux, E., Mappa, I., & D'Antonio, F. (2024). Treatments for cesarean scar pregnancy: A systematic review and meta-analysis. *The Journal of Maternal-Fetal & Neonatal Medicine*, 37(1), 2327569. <https://doi.org/10.1080/14767058.2024.2327569>
16. Damiani, G. R., Vimercati, A., Di Gennaro, D., Vitagliano, A., Giampaolino, P., Malvasi, A., Perrone, A. M., Pellegrino, A., Dellino, M., & Cicinelli, E. (2024). Cesarean scar pregnancy: A practical overview and our series of combined double step procedure management. *Minerva Obstetrics and Gynecology*, 76(5), 416-422. <https://doi.org/10.23736/S2724-606X.23.05291-0>
17. Hanacek, J., Herman, H., Krepelka, P., Haslik, L., Brandejsova, A., & Krofta, L. (2022). Cesarean scar pregnancy. *Ceska Gynekologie*, 87(3), 193-197. <https://doi.org/10.48095/cccg2022193>
18. Heidar, Z., Zadeh Modarres, S., Abediasl, Z., Khaghani, A., Salehi, E., & Esfidani, T. (2021). Cesarean scar pregnancy treatment: A case series. *Journal of Medical Case Reports*, 15(1), 506. <https://doi.org/10.1186/s13256-021-03081-0>
19. Joshi, A., Pillai, S. K., & Vishwanath, U. (2023). Successful non-surgical management of cesarean scar pregnancy. *Cureus*, 15(9), e45763. <https://doi.org/10.7759/cureus.45763>
20. Kaelin Agten, A., Jurkovic, D., Timor-Tritsch, I., Jones, N., Johnson, S., Monteagudo, A., Huirne, J., Fleisher, J., Maymon, R., Herrera, T., Prefumo, F., Contag, S., Cordoba, M., Manegold-Brauer, G., & CSP Collaborative Network. (2024). First-trimester cesarean scar pregnancy: A comparative analysis of treatment options from the international registry. *American Journal of Obstetrics and Gynecology*, 230(6), 669.e1-669.e19. <https://doi.org/10.1016/j.ajog.2023.10.028>
21. Long, Y., Zhu, H., Hu, Y., Shen, L., Fu, J., & Huang, W. (2020). Interventions for non-tubal ectopic pregnancy. *Cochrane Database of Systematic Reviews*, 7(7), CD011174. <https://doi.org/10.1002/14651858.CD011174.pub2>
22. Salvi, P., Gaikwad, V., Bhadoriya, A., & Ponde, S. (2024). Medical management of cesarean scar ectopic pregnancy: A unique approach. *Cureus*, 16(3), e55481. <https://doi.org/10.7759/cureus.55481>
23. Shoai, B. B., Gibbs, L., & Leonis, R. (2024). Cesarean scar pregnancy with surgical and conservative management: A case report. *Cureus*, 16(5), e61311. <https://doi.org/10.7759/cureus.61311>