

**CASE REPORT****Abdominal Bleeding Ec Suspect Rupture Caecarean Scar Pregnancy**Mardoni Efrijon¹, Yusrawati^{2,*}

1. *Obstetric and Gynecology Specialist Education Program, Faculty of Medicine Andalas University, Padang, West Sumatra, Indonesia*

2. *Obstetric and Gynecology Depatement, Dr. M. Djamil Hospital/Faculty of Medicine Andalas University, Padang, Wes Sumatra, Indonesia*

Corresponding Author: Yusrawati; yusrawati_65@yahoo.co.id ; +62 852-7243-7726

Submitted : March 5, 2025; **Accepted:** July 10, 2025; **Published:** July 25, 2025

Doi : <https://doi.org/10.25077/aoj.9.2.279-287.2025>

Abstract

Background: Caesarean scar pregnancy (CSP) is a rare form of ectopic pregnancy where the gestational sac implants within the scar of a previous caesarean section. With an estimated incidence of 1/1008 to 1/2500 of all previous caesarean deliveries, CSP can lead to life-threatening complications such as uterine rupture and severe bleeding.

Case Presentation: A 27-year-old woman, G3P2A0L2, presented with lower abdominal pain, shortness of breath, and nausea. She had a history of two previous caesarean sections. Physical examination revealed abdominal tenderness and rebound tenderness. Ultrasound suggested a 13-14 week pregnancy with suspected CSP rupture. Emergency laparotomy confirmed uterine rupture at the previous CS scar with placental protrusion. A supravaginal hysterectomy was performed.

Discussion: CSP occurs when the blastocyst implants in the lower uterine segment of a previous caesarean scar. Early detection is crucial to prevent severe complications. Transvaginal ultrasound with color Doppler is the primary diagnostic tool. Treatment should aim to remove the gestational sac and CSP mass while preserving fertility when possible.

Conclusion: The rising caesarean section rates may lead to increased incidence of CSP. Early diagnosis through transvaginal ultrasound and individualized treatment are essential to reduce morbidity. Clinicians should be aware of this condition and counsel patients about the risks associated with caesarean sections.

Keywords: Abdominal Bleeding; Rupture Caesarean Scar Pregnancy; Ectopic Pregnancy Ultrasound Diagnosis

INTRODUCTION

Caecarean scar pregnancy (CSP) is a rare form of ectopic pregnancy whereby the gestational sac is fully or partially implanted within the scar caused by previous caecarean section (CS).¹ The First case of CSP was reported in 1978 in a patient who had heavy bleeding and abdominal pain after uterine curettage for a suspected miscarriage at 6 weeks with a previous cesarean section (CS).² Cesarean scar pregnancy is a complication in which implantation situates in the scar from a prior cesarean delivery.³ It is a type of ectopic pregnancy where the fertilized egg is implanted in the muscle or fibrous tissue of the scar after a previous cesarean section.² Increased indications for performing CS are one of the risk factors for CSP. In 2018-2021, the total number of SC implementations with absolute indications in RSUP DR. M. Djamil was 51. This will certainly increase the risk of CSP figures at RSUP DR. M. Djamil.⁴ The incidence of CSP has been estimated to range from 1/1008 to 1/2500 of all previous caecarean delivery.⁵

CSD formation has been associated with several perioperative factors. Including the level of uterine incision, indication for CS, duration of labor and cervical dilatation before CS, closure technique, adhesions, and a retroverted uterus. Previous uterine surgery or uterine interventions cause thin or absent decidua basalis in the lower uterine segment scar area, which allows unimpeded trophoblast penetration, which is thought to contribute to placental accretion.^{2,6} Classification is linked to the direction of the growth of the CSP and residual myometrial thickness (RMT) which guide management options. There are three classification for CSP that are type I, II, and III. This clinical classification are used for the selection of surgical procedures.² In otherwise, we can choice expectant and medical treatment approach. Complications from this condition such as uterine rupture and heavy bleeding can be life-threatening and have a negative impact on future fertility levels, therefore immediate treatment is required.⁷ We report cases abdominal bleeding ec suspect rupture CSP managed by surgical procedure.

CASE REPORT

A 27 year old woman was admitted on 5th December 2023 at RSUP. DR. M. Djamil Padang with chief complaints lower abdominal pain since 7 hour ago, shortness of breathing, and nausea. Based on the anamnesis, the patient had a history of 3 pregnancies, in 2020 a male was born with a birth weight of 2900 grams after having a CS o.i breech presentation with an obstetrician, in 2022 a second male was born with a birth weigh of 2700 grams after having a CS o.i previous CS with an obstetrician, and this condition is the 3rd pregnancy for patient. The patient had a history of antenatal care checks with routine control with obstetrician at 4 weeks, 8 weeks and 10 weeks of pregnancy, no abnormalities were found during the control.



Figure 1. This ultrasonography wa performed 16th October 2023 with obstetrician in Artemisia Clinic Jakarta



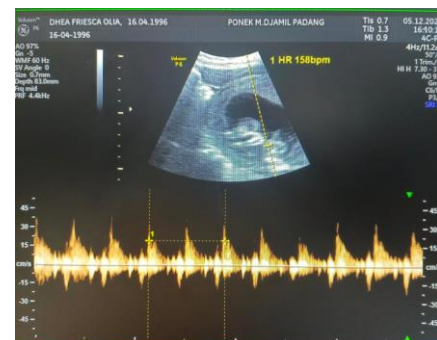
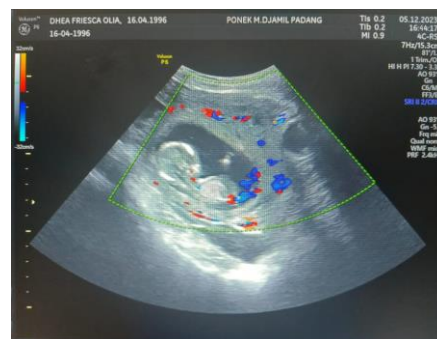
Figure 2. This ultrasonography wa performed 18th October 2023 with obstetrician in Mayapada Hospitas Jakarta



Figure 1. This ultrasonography wa performed 04th December 2023 with obstetrician in Clinic

From physical examination was found anemic conjunctiva and icteric of sclera. On abdominal examination was found ballotement positive, linea mediana hiperpigmentation, striae gravidarum and cicatrix of pfannenstiel. There was a tenderness and rebound tenderness of abdominal palpation examination. Laboratory results showed that the patient's hemoglobin (Hb) was 5.8 g/dL. Two PRC units were transfused. On ultrasound we was found 13-14 weeks according to biometry, fetal alive, singleton, intrauterine with free fluid on intraabdominal cavity, with the conclusion of the ultrasound results was suspect caecarean scar pregnancy rupture. The patien was pre operation diagnosed with Acute abdomen due to suspect intra abdominal bleeding ec suspect rupture of caesarean scar pregnancy on G3P2A0L2 13-14 weeks + twice previous CS + severe anemia. The patient is planned to emergency laparotomy exploration.

Laparotomy emergency was performed on 5th December 2023 with the following operating report is exploration was perform, blood appeared on abdominal cavity, bleeding appeared from the uterine rupture previous CS with part of the placenta came out of the scar, supravagina hysterectomy with the fetus intrauterine was performed, bleeding during operation 1500 cc and transfusion 2 units of PRC intra operation. The patient was diagnosed after surgery with P2A1L2 post laparotomy supravaginal hysterectomy oi rupture cesarean scar pregnancy + twice previous CS + severe anemia, and mother in care in intensive observation room.



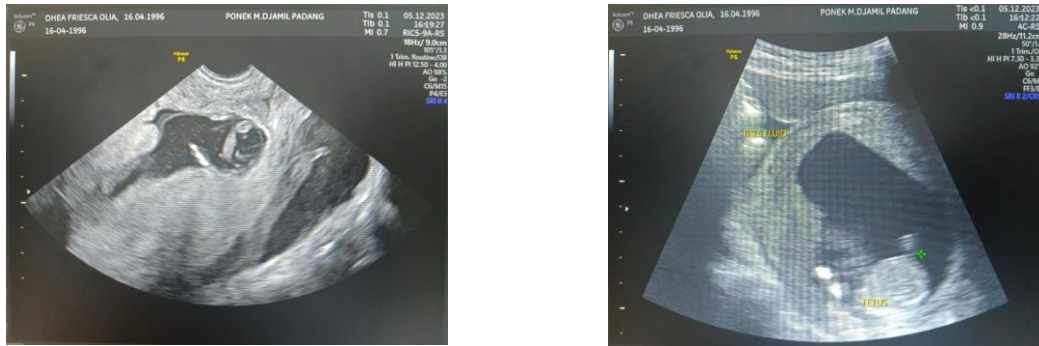


Figure 4. Ultrasound examination results were 13-14 weeks according to biometry, fetal alive, singleton, intrauterine with free fluid on intraabdominal cavity, with the conclusion of the ultrasound results was suspect caecarean scar pregnancy rupture

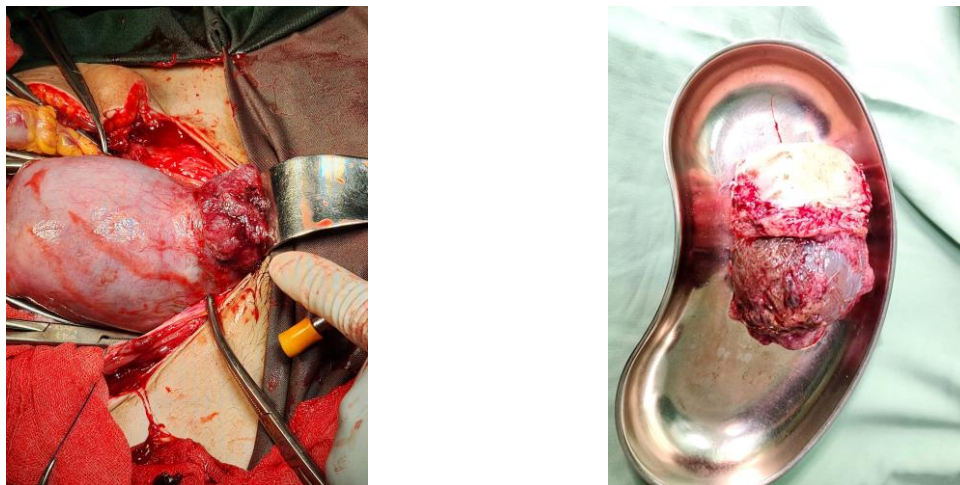


Figure 2. Documentation of supravaginal hysterectomy with the fetus intrauterine

DISCUSSION

Pregnancy in a caecarean scar occurs when the gestational sac implants in the lower uterine segment of a previous caecarean scar.⁸ Although the pathophysiology of pregnancy in a cesarean scar is still not clearly known, it may be caused by penetrating the blastosis into the myometrium on the first day through the lesion microscopy of fibroid tissue in previous cesarean scars, associated with a history of previous operative trauma such as cesarean section, myomectomy, hysteroscopy and even manual placenta.⁹ In practice, early detection of this phenomenon has become possible as ultrasound scans and transvaginal probes have been introduced to obstetric practice and imaging quality has improved. Earlier, CSP in the first trimester was treated as spontaneous abortion, while in the second and third trimesters it led to hemorrhage or uterine rupture.^{10,11} A 2020 case report by Purnomo and Djanas of CSP managed conservatively. Early diagnosis with the aid of ultrasound enabled conservative therapy using methotrexate (MTX) in a 30-year-old woman 7-8 weeks pregnant.¹² As with its use in tubal ectopic pregnancy, MTX is appropriate for women who are pain-free and hemodynamically stable with an unruptured nonviable pregnancy <8 weeks' gestation with

a human chorionic gonadotropin (HCG) <5000 iu/ml for whom a single intramuscular dose of 50 mg/m² may be adequate.²

There are many risk factors implicated in the development of CSP. These include the number of cesarean sections, the time interval between the previous cesarean section and the subsequent pregnancy, and the indications for the previous cesarean section, but it is not clear whether these factors are directly related to CSP.^{13,14} On review of the various case reports, it was noted that CSP were incidental ultrasonography finding in an asymptomatic woman while some present with mild painless vaginal bleeding. In a lesser percentage of patients, it was accompanied with mild to moderate abdominal pain. The uterus may be tender during examination if the CSP is in the process of rupture. A patient with a ruptured CSP may present

in a state of collapse or hemodynamically unstable.^{13,15} If pregnancy in a cesarean scar progressed to the second or third trimester, there would be an increased risk of uterine rupture with massive hemorrhage, with a high risk of hysterectomy causing serious maternal morbidity and can affect future fertility. To reduce morbidity and fatal complications, it is important to diagnose a scar pregnancy as early and as accurately as possible.^{11,16}

The primary method for diagnosing a suspected CSP involves the use of combined transvaginal grayscale and color Doppler ultrasonography, which is also the most effective approach, exhibiting a sensitivity of 86.4%.^{11,13} Transvaginal ultrasonography remains to be an important tool in diagnosing CSP, Diagnostic criteria are as follows:¹⁷

- An empty uterine cavity and an empty cervical canal.
- A gestational sac in the anterior part of the uterine isthmus.
- An absence of healthy myometrium between the bladder and gestational sac.
- Circular blood flow surrounding the sac must also be clearly visible. CSPs were noted to be well perfused on Doppler examination.

All treatment options carry a risk of haemorrhage and subsequent hysterectomy. Treatment should be individualised based on full pre-treatment evaluation. Cause the treatment of CSP is challenging. Currently, the recommendation is to offer early termination of pregnancy because of the potential risks of continuing the pregnancy. Hysteroscopic resection has been advocated as a procedure to remove a CSP mass, either as primary treatment or sequential treatment following an interval after methotrexate.^{1,2}

CONCLUSION

Transvaginal US imaging is helpful in detection of asymptomatic ectopic pregnancy implanted in the cesarean section scar. Early identification of this form of pregnancy warrants effective treatment with no negative effects on fertility. Particularly useful is Doppler imaging and, in the most difficult cases, MRI. Ultrasound imaging, mainly transvaginal and rarely transabdominal, is a significant diagnostic means utilized not only to diagnose but also to treat CSP as part of a combined approach. Increasing CS rates imply that clinicians will encounter CSP from time to time. A primary preventive strategy is to focus on reducing the number of primary CS performed without

medical indications. The risk of longterm complications such as CSP and placenta accreta should be specifically emphasised when counselling women requesting CS for nonmedical reasons. Prompt and accurate diagnosis of CSP and individualised treatment and follow up are required to reduce overall morbidity.

REFERENCES

1. Jayaram PM, Okunoye GO, Konje J. Cesarean scar ectopic pregnancy: diagnostic challenges and management options. *Obstet Gynaecol*. 2017;19(1):13–20.
2. Hameed MSS, Wright A, Chern BSM. Cesarean scar pregnancy: Current understanding and treatment including role of minimally invasive surgical techniques. *Gynecol Minim Invasive Ther*. 2023;12(2):64–71.
3. Valasoulis G, Magaliou I, Koufidis D, Garas A, Daponte A. Cesarean Scar Pregnancy: A Case Report and a Literature Review. *Med*. 2022;58(6):1–8.
4. Fegita, Primadella and RA. “Caesarian Section Patient Profile with Indication Absolute in Dr. M. Djamil General Hospital Padang in 2018-2020.” *Andalas Obstetrics And Gynecology Journal* 6.2. 2022;130–7.
5. Giampaolino P, De Rosa N, Morra I, Bertrando A, Di Spiezio Sardo A, Zizolfi B, et al. Management of cesarean scar pregnancy: A single-institution retrospective review. *Biomed Res Int*. 2018;2018(May 2017).
6. Timor-Tritsch IE, Monteagudo A, Cali G, D’Antonio F, Kaelin Agten A. Cesarean Scar Pregnancy: Diagnosis and Pathogenesis. *Obstet Gynecol Clin North Am* [Internet]. 2019;46(4):797–811. Available from: <https://doi.org/10.1016/j.ogc.2019.07.009>
7. Wang HY, Zhang J, Li YN, Wei W, Zhang DW, Lu YQ, et al. Laparoscopic management or laparoscopy combined with transvaginal management of Type II cesarean scar pregnancy. *J Soc Laparoendosc Surg*. 2013;17(2):263–72.
8. Qian Z Da, Weng Y, Wang CF, Huang LL, Zhu XM. Research on the expression of integrin $\beta 3$ and leukaemia inhibitory factor in the decidua of women with cesarean scar pregnancy. *BMC Pregnancy Childbirth*. 2017;17(1):1–8.
9. Al-Zirqi I, Stray-Pedersen B, Forsén L, Daltveit AK, Vangen S. Uterine rupture: Trends over 40 years. *BJOG An Int J Obstet Gynaecol*. 2016;123(5):780–7.
10. Al-Zirqi I, Daltveit AK, Forsén L, Stray-Pedersen B, Vangen S. Risk factors for complete uterine rupture. *Am J Obstet Gynecol* [Internet]. 2017;216(2):165.e1-165.e8. Available from: <http://dx.doi.org/10.1016/j.ajog.2016.10.017>
11. Melber DJ, Berman ZT, Jacobs MB, Picel AC, Conturie CL, Zhang-Rutledge K, et al. Placenta Accreta Spectrum Treatment With Intraoperative Multivessel Embolization: the PASTIME protocol. *Am J Obstet Gynecol* [Internet]. 2021;225(4):442.e1-442.e10. Available from: <https://doi.org/10.1016/j.ajog.2021.07.001>
12. Purnomo SB, Djanas D. Pregnancy in Cesarean Scar : Accurate Diagnosis and Success in Conservative Management. *Andalas Obstet Gynecol J*. 2020;4(1):114–9.
13. Buonomo B, Massarotti C, Dellino M, Anserini P, Ferrari A, Campanella M, et al. Reproductive issues in carriers of germline pathogenic variants in the BRCA1/2 genes: an expert meeting. *BMC Med*. 2021;19(1):1–11.
14. Fang Q, Sun L, Tang Y, Qian C, Yao X. Quantitative risk assessment to guide the treatment of cesarean scar pregnancy. *Int J Gynecol Obstet*. 2017;139(1):78–83.
15. Miller R, Timor-Tritsch IE, Gyamfi-Bannerman C. Society for Maternal-Fetal Medicine (SMFM) Consult Series #49: Cesarean scar pregnancy. *Am J Obstet Gynecol* [Internet]. 2020;222(5):B2–14. Available from: <https://doi.org/10.1016/j.ajog.2020.01.030>
16. Itani S, Jabin M, Dasara H, Forehand K, DePrisco G. Diagnosis and Management of Cesarean Scar Ectopic Pregnancy: A Case Study. *Cureus*. 2023;15(9):13–5.
17. Dellino M, Silvestris E, Loizzi V, Paradiso A, Loiacono R, Minoia C, et al. Germinal ovarian tumors in reproductive age women: Fertility-sparing and outcome. *Med (United States)*.

2020;99(39):1–6.

18. Qian Z Da, Weng Y, Wang CF, Huang LL, Zhu XM. Research on the expression of integrin $\beta 3$ and leukaemia inhibitory factor in the decidua of women with cesarean scar pregnancy. *BMC Pregnancy Childbirth*. 2017;17(1):1–8.
19. Al-Zirqi I, Stray-Pedersen B, Forsén L, Daltveit AK, Vangen S. Uterine rupture: Trends over 40 years. *BJOG An Int J Obstet Gynaecol*. 2016;123(5):780–7.
20. Al-Zirqi I, Daltveit AK, Forsén L, Stray-Pedersen B, Vangen S. Risk factors for complete uterine rupture. *Am J Obstet Gynecol* [Internet]. 2017;216(2):165.e1-165.e8. Available from: <http://dx.doi.org/10.1016/j.ajog.2016.10.017>