Jurnal Kesehatan Reproduksi
Vol 10 No 2 – Agustus 2023
ISSN 2302-836X (print), ISSN 2621-461X (online)
Tersedia online di https://jurnal.ugm.ac.id/jkr
DOI: 10.22146/jkr.83215

CASE REPORT

Successful Conservative Treatment of Cesarean Scar Pregnancy with Systemic Methotrexate Injection: A Case Report

Irwan Muhaeimin H.M[1*], Irwan Taufiqur Rachman[2], Shofwal Widad[2]
[1,2,3,4,5]Sekolah Pasca Sarjana / Bioetika / Universitas Gadjah Mada
[1]Department of Obstetrics and Gynecology, Faculty of Medicine, Public Health and Nursing, Universitas Gadjah Mada
Korespondensi: irwanmuhaeimin123@gmail.com

Submisi: 17 Maret 2023; Revisi: 4 Oktober 2023; Penerimaan: 6 November 2023

ABSTRACT

Cesarean scar pregnancy (CSP) is a rare but life-threatening complication. It is the abnormal implantation of gestational sac into myometrium and fibrous scar of previous cesarean section. Its incidence is on rising trend due to increase in rate of cesarean section all over the world. A thirty one-year old third gravida presented at five weeks of gestation with complaints of vaginal spotting. She was diagnosed as a case of cesarean scar pregnancy (CSP) on ultrasonography. Conservative management of CSP was done successfully with the injection of systemic methotrexate. CSP pregnancy could be catastrophic, if not managed well in time. Management includes both surgical and medical options. The optimal management of caesarean section pregnancy should be individualized depending upon the hemodynamic status depending on patient's hemodynamic profile, size of gestational sac, desire for future fertility, and patient's preference.

ABSTRAK

Kehamilan bekas luka sesar (CSP) adalah komplikasi yang jarang terjadi namun mengancam jiwa. CSP yaitu implantasi abnormal kantung kehamilan ke dalam miometrium dan jaringan fibrosa bekas luka operasi caesar sebelumnya. Insidensinya meningkat seiring meningkatnya angka operasi sesar di seluruh dunia. Pada laporan kasus ini, seorang ibu hamil berusia tiga puluh satu tahun dengan kehamilan yang ke-tiga datang di usia kehamilan lima minggu dengan keluhan bercak vagina. Dia didiagnosis sebagai kasus kehamilan bekas luka sesar (CSP) dari ultrasonografi. Penatalaksanaan konservatif CSP berhasil dilakukan dengan suntikan metotreksat sistemik. Kehamilan CSP bisa menjadi masalah besar jika tidak ditangani dengan baik pada waktunya. Penatalaksanaan mencakup pilihan bedah dan medis. Penatalaksanaan optimal CSP harus dilakukan secara individual tergantung pada profil hemodinamik pasien, ukuran kantung kehamilan, keinginan untuk kehamilan di masa depan, dan pilihan pasien.

INTRODUCTION

Cesarean scar pregnancies (CSPs) occur in approximately 1 in 2000 pregnancies and account for 6% of ectopic pregnancies among women with a prior cesarean delivery.[1,2,3] Their increasing prevalence mirrors the increasing rates of cesarean deliveries.[4] It is the abnormal implantation of gestational sac into myometrium and fibrous scar of previous cesarean section. The mechanism for implantation in this location is believed to be migration of the embryo through either a wedge defect in the lower uterine segment or a microscopic fistula within the scar.[5,6] Adenomyosis, in vitro fertilization, previous dilation and curettage, and manual removal of the placenta are purported risk factors.[1,5,7]

They are associated with high morbidity and mortality[8]; therefore, accurate diagnosis and effective management are of major importance. However, there is no consensus on the preferred mode of treatment or follow up, while various treatment modalities have been used so far, with different reported success rates.[9]

Several types of conservative treatment have been used such as dilatation and curettage, excision of trophoblastic tissues (laparotomy or laparoscopy),[10,11] local and/or systemic administration of methotrexate,[12] bilateral hypogastric artery ligation associated with trophoblastic evacuation, and selective uterine artery embolization combined with curettage and/or methotrexate administration.[13,14] Laparotomy followed by wedge resection of the lesion (hysterotomy) should be considered in women who do not respond to conservative medical and/or surgical treatments or present too late.[15]

Hence, we report a case of a CSP after conservative management. Although there are varying guidelines for management of CSP, this case describes the successful management with systemic methotrexate injection.

CASE REPORT

A 31-year-old woman (G3P1A1) presented from Wonosobo Hospital with vaginal spotting since 5 days. She reported no history of abdominal pain or discomfort, and sexually transmitted infection. She had no other significant medical history other than a body mass index of 26.2 kg/m^2. She had regular menstruation. Her previous pregnancies were the history of dilation and curettage due to blighted ovum in 2016 and successful cesarean section delivery due to longitudinal lie and anhydramnion in 2017.

Five days prior to the presentation, a transvaginal ultrasound at an obstetrics appointment suggested an intrauterine pregnancy at 5 weeks and 6 days with a gestational sac with fetal pole 0.3 cm visualized in the lower uterine segment. At presentation, her vitals were within normal limits and stable. Physical examination was within normal limits. Quantitative beta-hCG was 2512 IU/L at presentation. She was diagnosed with cesarean scar pregnancy. She was treated with first dose of Methotrexate 50 mg intramuscularly.

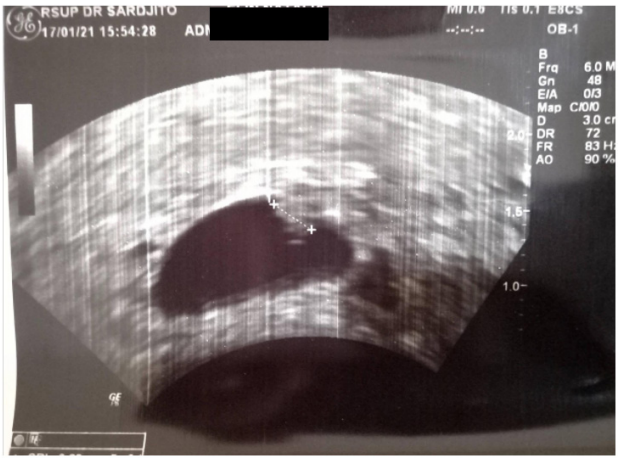

Figure 1. A Transvaginal Ultrasound at an Obstetrics Appointment Suggested an Intrauterine Pregnancy at 5 Weeks and 6 Days with a Gestational Sac with Fetal Pole 0.3 cm Visualized in the Lower Uterine Segment

A week later, she came to the hospital for a follow-up. The second transabdominal ultrasound showed that the gestational sac was still seen with the size of 1.17 cm in diameter and visualized in the lower uterine segment, but the fetal pole was not seen. The quantitative beta-hCG was decreased to 137. IU/L.

In the second week, the third transabdominal ultrasound showed that the gestational sac was still seen with the size of 3.34 x 2.90 x 1.97 cm in diameter visualized in the lower uterine segment,

but with fetal pole was not seen. The quantitative beta-hCG was decreased to 30.3 IU/L. A month after that, the patient had gained normal menstruation.

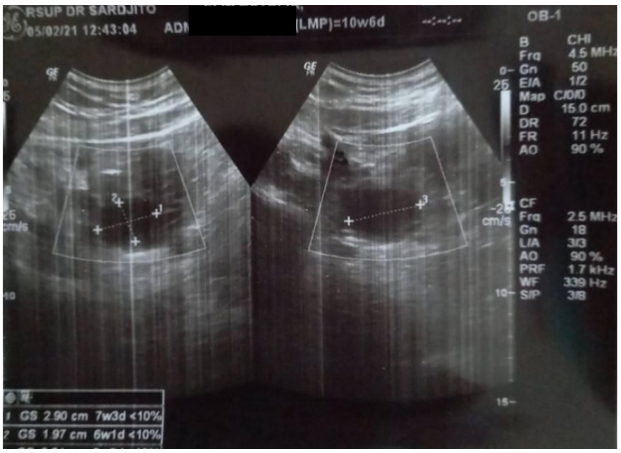

Figure 2. The Transabdominal Ultrasound Showed that the Gestational Sac was Seen with the Size Of 3.34 X 2.90 X 1.97 cm in Diameter Visualized in the Lower Uterine Segment, but with Fetal Pole was not Seen

DISCUSSION

Cesarean scar pregnancies (CSPs) occur in approximately 1 in 2000 pregnancies and account for 6% of ectopic pregnancies among women with a prior cesarean delivery.[1,2,3] The incidence in our department was approximately 12 ectopic pregnancies within the period of 12 months.

It is the abnormal implantation of gestational sac into myometrium and fibrous scar of previous cesarean section. The mechanism for implantation in this location is believed to be migration of the embryo through either a wedge defect in the lower uterine segment or a microscopic fistula within the scar.[5,6] Adenomyosis, in vitro fertilization, previous dilation and curettage, and manual removal of the placenta are purported risk factors.[1,5,7]

The risk factors of this case are the previous history of dilation and curettage and caesarean section. The possible mechanism for implantation in this location is believed to be migration of the embryo through either a wedge defect in the lower uterine segment or a microscopic fistula within the scar [5, 6]. This is due to the massively increased vascularity associated with its growth in addition to the fact that the contractility of the lower segment being poor, once hemorrhage commences it is well high impossible to control it without some form of operative intervention.

Because of the rarity of the CSP, there are no optimal lines for therapy. Treatment modalities are either medical or surgical and are sometimes combined. The surgical approach includes radical and conservative procedures. The radical procedure consists in hysterectomy when the uterus is ruptured or if bleeding is uncontrollable. The conservative procedure includes (i) evacuation of the pregnancy and repair of the uterine defect by laparotomy or laparoscopy,[10,11] (ii) dilatation and curettage and excision of trophoblastic tissues using laparotomy or laparoscopy,[10,11] and (iii) bilateral hypogastric artery ligation associated with D and C under laparoscopic guidance.[16] The medical treatment consists of MTX administration locally or systemically.[17,18] The medical treatment requires the beta-hCG level follow up.

The overall success rate of systemic methotrexate (MTX) and/or local injection of MTX or potassium chloride was 62%.[19] Dilation and curettage (D&C) was associated with a 28% risk of hemorrhage that dropped to 4% when combined with uterine artery embolization (UAE).[19] Hysteroscopic resection of CSP was unsuccessful in 12% of cases, and inadequate human chorionic gonadotropin decay was the primary indication for additional intervention.[19] Laparoscopic, vaginal, and open excision and repair of the defect were associated with a high success rate (≥96%) and a low risk of hemorrhage (≤4%). Expectant management resulted in a 57% live birth rate, but 63% of women required hysterectomy because of placental implantation abnormalities or second trimester uterine rupture.[19]

Methotrexate (MTX) injection is effective in CSP treatment. Systemic administration shows similar overall cure rate compared to local injection, but requires shorter time for serum β-hCG remission and uterine mass disappearance.[20] MTX therapy failure is often suggested to be associated with high β-hCG level at presentation, deep implantation of the amniotic sac, advanced gestational age, and high vascularity around the gestational sac.[21] To better screen candidates for MTX therapy, the potential factors that favor patient prognosis are the pretreatment serum β-hCG level and the uterine

mass size. MTX therapy is more feasible in patients with lower serum β-hCG level (<20,000 U/L) and smaller lesion (<3.0 cm in diameter). The main disadvantage of systemic MTX therapy is prolonged hospitalization, especially in patients presenting with mild vaginal bleeding . The patients can be followed as outpatients when they are suitable for outpatient management under strict instructions.[21]

The present case of CSP was admitted at 5 weeks of gestation. The time interval from the previous history of dilation and curettage was approximately 5 years and cesarean section delivery was approximately 4 years. Due to the stable hemodynamic condition of the patient and patient's preference of not having surgical procedure, the conservative management was preferred. The conservative management was done successfully with the injection of systemic methothrexate, shown by the solution of the mass and the decrease of the quantitative beta-hCG level (2512 U/L, 137 U/L, 30.3 U/L; respectively after each visit). She had normal menstruation after the treatment.

CONCLUSION

With the increasing prevalence of the caesarean section pregnancy, early diagnosis and management is very important to prevent serious complications. The optimal management of caesarean section pregnancy should be individualized depending upon the hemodynamic status, serum beta-hCG levels, size of gestational sac, desire for the preservation of future fertility and patient's preference. In this report, conservative management of CSP was done successfully with the injection of systemic methotrexate, shown by the solution of the mass and the decrease of quantitative beta-hCG, the solution of the mass, and normal menstruation. More reports are needed to rationalize the treatment modalities on this condition.

REFERENCES

1. Spychała, P. and Nowakowski, B., 2012. Laparoscopic management of an ectopic pregnancy in a previous caesarean section scar. Ginekologia polska, 83(8), pp.622-625.
2. Valley, M.T., Pierce, J.G., Daniel, T.B. and Kaunitz, A.M., 1998. Cesarean scar pregnancy: imaging and treatment with conservative surgery. Obstetrics & Gynecology, 91(5), pp.838-840.
3. Rotas, M.A., Haberman, S. and Levgur, M., 2006. Cesarean scar ectopic pregnancies: etiology, diagnosis, and management. Obstetrics & Gynecology, 107(6), pp.1373-1381.
4. Wong, K.S., Tan, J., Ang, C. and Ngu, A., 2010. Myomectomy scar ectopic pregnancy. Australian and New Zealand journal of obstetrics and gynaecology, 50(1), pp.93-94.
5. Marchiole, P., Gorlero, F., De Caro, G., Podesta, M. and Valenzano, M., 2004. Intramural pregnancy embedded in a previous cesarean section scar treated conservatively. Ultrasound in Obstetrics and Gynecology: The Official Journal of the International Society of Ultrasound in Obstetrics and Gynecology, 23(3), pp.307-309.
6. Ash, A., Smith, A. and Maxwell, D., 2007. Caesarean scar pregnancy. BJOG: An International Journal of Obstetrics & Gynaecology, 114(3), pp.253-263.
7. Vial, Y., Petignat, P. and Hohlfeld, P., 2000. Pregnancy in a cesarean scar. Ultrasound in Obstetrics and Gynecology: The Official Journal of the International Society of Ultrasound in Obstetrics and Gynecology, 16(6), pp.592-593.
8. Calì, G., Timor-Tritsch, I.E., Palacios-Jaraquemada, J., Monteaugudo, A., Buca, D., Forlani, F., Familiari, A., Scambia, G., Acharya, G. and D'Antonio, F., 2018. Outcome of Cesarean scar pregnancy managed expectantly: systematic review and meta-analysis. Ultrasound in Obstetrics & Gynecology, 51(2), pp.169-175.
9. Jurkovic, D. and Wilkinson, H., 2011. Diagnosis and management of ectopic pregnancy. BMJ, 342.
10. Seow, K.M., Cheng, W.C., Chuang, J., Lee, C., Tsai, Y.L. and Hwang, J.L., 2000. Methotrexate for cesarean scar pregnancy after in vitro fertilization and embryo transfer. A case report. The Journal of reproductive medicine, 45(9), pp.754-757.
11. Godin, P.A., Bassil, S. and Donnez, J., 1997. An ectopic pregnancy developing in a previous caesarian section scar. Fertility and sterility, 67(2), pp.398-400.
12. Persadie, R.J., Fortier, A. and Stopps, R.G., 2005. Ectopic pregnancy in a caesarean scar: a case report. Journal of Obstetrics and Gynaecology Canada, 27(12), pp.1102-1106.
13. Sugawara, J., Senoo, M., Chisaka, H., Yaegashi, N. and Okamura, K., 2005. Successful conservative treatment of a cesarean scar pregnancy with uterine artery embolization. The Tohoku journal of experimental medicine, 206(3), pp.261-265.

14. Yang, M.J. and Jeng, M.H., 2003. Combination of transarterial embolization of uterine arteries and conservative surgical treatment for pregnancy in a cesarean section scar. A report of 3 cases. The Journal of reproductive medicine, 48(3), pp.213-216.
15. Fylstra, D.L., 2002. Ectopic pregnancy within a cesarean scar: a review. Obstetrical & gynecological survey, 57(8), pp.537-543.
16. Kung, F.T., Huang, T.L., Chen, C.W. and Cheng, Y.F., 2006. Cesarean scar ectopic pregnancy. Fertility and sterility, 85(5), pp.1508-1509.
17. Shufaro, Y. and Nadjari, M., 2001. Implantation of a gestational sac in a cesarean section scar. Fertility and sterility, 75(6), p.1217.
18. Ben Nagi, J., Helmy, S., Ofili-Yebovi, D., Yazbek, J., Sawyer, E. and Jurkovic, D., 2007. Reproductive outcomes of women with a previous history of Caesarean scar ectopic pregnancies. Human Reproduction, 22(7), pp.2012-2015.
19. Maheux-Lacroix, S., Li, F., Bujold, E., Nesbitt-Hawes, E., Deans, R. and Abbott, J., 2017. Cesarean scar pregnancies: a systematic review of treatment options. Journal of minimally invasive gynecology, 24(6), pp.915-925.
20. Peng, P., Gui, T., Liu, X., Chen, W. and Liu, Z., 2015. Comparative efficacy and safety of local and systemic methotrexate injection in cesarean scar pregnancy. Therapeutics and clinical risk management, 11, p.137.
21. Lam, P.M., Lo, K.W.K. and Lau, T.K., 2004. Unsuccessful medical treatment of cesarean scar ectopic pregnancy with systemic methotrexate: a report of two cases. Acta obstetricia et gynecologica Scandinavica, 83(1), pp.108-111.