Methotrexate Followed by Suctional Curettage: A Successful Treatment for Cesarean Scar Pregnancy

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SUMMARY

Objective: To report the conservative management of a patient with cesarean scar pregnancy.

Case Report: A 28-year-old woman, gravida 3, para 2, was initially diagnosed by transvaginal sonography to have a single viable gestation in a uterine scar. A single dose of systemic methotrexate 50 mg was given intramuscularly. A suctional curettage was then performed successfully. Serum levels of β-human chorionic gonadotropin returned to normal 21 days later. The patient had suffered from persistent vaginal spotting for 2 months, but no major complications were noted at follow-up.

Conclusion: To preserve fertility, systemic intramuscular methotrexate followed by suctional curettage may be a safe treatment alternative for cesarean scar pregnancies. [Taiwanese J Obstet Gynecol 2005;44(2):168-171]

Key Words: cesarean scar pregnancy, methotrexate, transvaginal ultrasonography

Introduction

Cesarean scar pregnancy, where the gestational sac implants into the scar of a previous cesarean section [1], is a rare but dangerous form of ectopic pregnancy. It can lead to catastrophic complications, including significant maternal morbidity or death [2]. In the past, it was usual for the diagnosis to be made late in the first trimester, and to be confirmed only after hysterectomy for uncontrollable, sometimes life-threatening, hemorrhage from the eroded blood vessels within the myometrial tissue [3]. Cesarean scar pregnancy must be distinguished from other types of abnormally implanted pregnancies, including cervical, cervico-isthmic, and cervico-isthmic-corporeal pregnancies, to ensure optimal treatment and patient outcome. Conservative management of these pregnancies has been proposed under stable clinical conditions. This includes amniotic aspiration with local potassium chloride and/or methotrexate administration [1,4]. Recent advances in the resolution of transvaginal and color Doppler ultrasonography has made it possible to diagnose ectopic pregnancies as early as possible. We describe a case of ectopic pregnancy in a cesarean scar that was diagnosed by transvaginal ultrasonography, and managed successfully with intramuscular methotrexate injection followed by suctional curettage.

Case Report

A 28-year-old, gravida 3, para 2, woman with a history of previous cesarean section presented to her local obstetrician with vaginal bleeding after 6 weeks’ amenorrhea. A pregnancy test was positive. Ultrasound identified a gestational sac in the lower segment of the uterus. Suspected to have a cervical pregnancy of 6 weeks’ gestation, she was referred to our hospital where pelvic examination on arrival showed a normal-sized...
uterus with nodularity and a closed cervical os. Transvaginal ultrasound showed a single viable fetus with a crown–rump length of 2.8 mm in a gestational sac implanted in the lower segment of the uterus (Figure 1). A diagnosis of cesarean scar pregnancy was made.

A single dose of systemic methotrexate 50 mg was given intramuscularly. Ten days later, repeat ultrasonography showed a yolk sac in a gestational sac measuring 24 × 16 × 22 mm (Figure 2). The serum level of β-human chorionic gonadotropin (β-hCG) was 82,937 mIU/mL. Based on the ultrasound findings and serum β-hCG, suctional curettage was performed to remove the gestational sac; the pathology report revealed products of conception. One week later, serum β-hCG was 1,252 mIU/mL. After another 10 days, repeat sonography revealed a mass measuring 21.9 × 20.4 mm, as well as diminished blood flow at the isthmus of the uterus on Doppler examination (Figure 3). Serum β-hCG returned to normal 21 days after suctional curettage. Although the patient suffered from persistent vaginal spotting for 2 months, there were no major complications noted at follow-up.

**Discussion**

Cesarean scar pregnancy is an extremely rare type of ectopic pregnancy, with a high risk of uterine rupture and uncontrollable hemorrhage [5,6]. Its incidence may have increased due to the greater number of cesarean sections being performed. Larsen and Solomon reported the first case of cesarean scar pregnancy in 1978, and successfully treated it with laparotomy, hysterotomy resection, and uterine scar dehiscence repair [7]. Several clinicians have successfully treated cervical scar pregnancy by using systemic methotrexate as primary treatment [8–12].

The exact cause of cesarean scar pregnancy remains unknown. Many obstetricians believe that its occurrence in the myometrium is due to the existence of microtubules that allow implantation of the gestational sac into the myometrium [1]. The formation of microtubules may arise due to a previous cesarean section, a previous dilatation and curettage, adenomyosis or history of in vitro fertilization treatment [1,13–17]. Damage to the endometrium in cesarean sections also damages the decidua basalis, thus facilitating the embedding and growth of trophocytes in the myometrium [1].

Accurate diagnosis of cesarean scar pregnancy relies on a high index of suspicion and high-resolution transvaginal sonography, which facilitates the diagnosis of an ectopic pregnancy in a uterine scar with regards to location, age, size and viability. Strict ultrasound imaging criteria must be used: empty uterus, empty cervical...
canal, development of the sac in the anterior part of the isthmic portion, and thinning or complete absence of healthy myometrium between the bladder and the sac; the last criterion allows differentiation from cervicisthmic implantation [4,10,17,18]. In addition, \( \beta \)-hCG assays will aid in earlier diagnosis.

Dilatation and curettage (D&C) has been described as a treatment for cesarean scar pregnancy when the location of the gestational sac was misdiagnosed [5, 17]. D&C is a contraindication in cesarean scar ectopic pregnancy as it may cause uterine perforation, inducing intractable bleeding, and laparotomy or even hysterectomy is often required [10,19–21]. Lee et al reported the first case of an ectopic pregnancy in a previous cesarean section scar to be diagnosed by ultrasound and hysteroscopy, and managed successfully by operative laparoscopy [22].

Conservative management of cesarean scar pregnancies has been proposed. Lai et al reported that intramuscular injections of methotrexate could have a better curative effect [1]; Godin et al suggested amniotic aspiration with local administration of potassium chloride and/or methotrexate directly into the gestational sac and surrounding myometrium [4]; Roberts et al injected hypertonic glucose into the ectopic sac using direct ultrasound needle guidance, supported by short-term administration of oral methotrexate [23]; Seow et al used local injection of methotrexate under ultrasound guidance [17].

In our case, we aimed to preserve our patient’s fertility with conservative management. Intramuscular systemic methotrexate was first given to reduce the activity of trophoblastic cells. Then, a suctional curettage was performed successfully. Great attention was paid to any vaginal bleeding and vital signs as the patient might be threatened with massive vaginal bleeding and uterine rupture; if any uncontrolled bleeding had happened, emergency surgery, such as hysterectomy, might have had to be performed.

Indeed, methotrexate is simple and highly effective [24,25], even if various side effects have been described [26]. Systemic methotrexate administration followed by expectant management has been suggested as an alternative method of treatment in early or nonviable ectopic pregnancy embedded in a uterine scar [27]. This is in accordance with the treatment suggested for viable 7-week uterine scar gestation [9] and cornual pregnancy [28].

In conclusion, systemic intramuscular methotrexate followed by suctional curettage may be a safe treatment alternative for cesarean scar pregnancies [27] if there are no contraindications for patients who desire to preserve fertility [10].

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