

Multi Dose Regimen of Injection Methotrexate for Management of Early Cessarean Scar Ectopic Pregnancy-Conservative Approach

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Abstract: *Cesarean scar pregnancy (CSP) is a rare type of ectopic pregnancy in which gestational sac is implanted in myometrium of previous cesarean scar. Several management options are available including surgical and medical. Conservative approach by giving multiple injections of methotrexate alternative with folinic acid can resolve early cesarean scar pregnancy thus preserving fertility and postoperative morbidity. Serial beta HCG monitoring is done to confirm the resolution.*

1. Introduction

Incidence varies from 1 in 1800 to 1 in 2200 pregnancies following previous section^[1]. 6.1% of ectopic pregnancy can develop into scar site pregnancy.^[1] To date there are no guidelines on the optimal treatment of CSP in patients who are hemodynamically stable. Pathogenesis is unclear. Formation of microchannel between cesarean scar and endometrial cavity may be a reason for implantation of gestational sac as trophoblastic tissue migrates through these channels. Risk factors include-previous history of operative procedures like laparoscopy, hysteroscopy, manual removal of placenta morbid adherent placenta, myomectomy. Uterine rupture and hemodynamic shock are severe complications. Thus early diagnosis and treatment is required to prevent life threatening complications. Treatment options include surgical and medical- laparoscopic excision of gestational sac, dilatation and curettage, uterine artery embolization, methotrexate (MTX). The most common symptom is painless vaginal bleeding that may be massive. . Since there is no specific clinical sign of the CSP ultrasonography and color flow Doppler are essential for diagnosis. The sonographic criteria for diagnosis^[1] are

- 1) Empty uterus and empty cervical canal;
- 2) Development of the sac in the anterior wall of the isthmic portion;
- 3) A discontinuity on the anterior wall of the uterus demonstrated on a sagittal plane of the uterus running through the amniotic sac;
- 4) Absent or diminished healthy myometrium between the bladder and the sac; high velocity with low impedance peri-trophoblastic vascular flow clearly surrounding the sac is proposed in Doppler examination.

In this paper we present a case of early cesarean scar pregnancy successfully treated by multidose methotrexate regimen.

2. Case Report

31 year old lady gravida3, parity2, live issues2 admitted in our hospital casualty with complains of amenorrhea for two and half months with vaginal spotting since 2 days. She had

a history of laparotomy done for mullein dysgenesis with vaginoplasty 6years back and had previous two cesarean deliveries 3 and 1 and ½ years back. On examination vitals were stable and per abdomen there was no guarding, tenderness and rigidity .On pervaginal examination internal os was closed, uterus retroverted bulky in size, bilateral fornix free non tender, no adenexal mass palpated. We did ultrasound that reveals a single gestational sac of crown-rump length of 5weeks+4days implanted at site of previous cesarean scar inside the myometrium with an empty uterine cavity.

We counselled the patient regarding lines of management. She opted for medical management. Baseline levels of beta HCG hormone done along with routine investigations like hemogram and liver and kidney function tests. Initial beta HCG level was 12618.2. Four doses of injection methotrexate(1gram per kilogram body weight) at day 1, 3, 5 and 7 were given. Injection folinic acid 0.1mg per kg body weight given alternatively on day 2, 4, 6 and 8 to prevent side effects of methotrexate. On day 4 beta HCG rises initially to 18873.06 . On day 6 it was 10, 074.74. patient was discharged after giving four doses of methotrexate and folinic acid at beta HCG level of 10, 074.74 and asked to follow up in outpatient after one week with beta HCG report. We followed the patient for two months with weekly beta HCG report and by end of one month it has successfully fallen up to 354.1.By the end of 8weeks, it came down to undetectable levels. Patient has resumed her normal regular menses and she was advised contraception.

Table 1: β-HCG levels with time

DAYS	β-HCG(mmol/L)
D0	12618.21
D4	18873.06
D6	10074.74
D14	3777.80
D21	546.54
D28	533.27
D35	333.33
D42	106.08
D49	2.5
D56	1.3

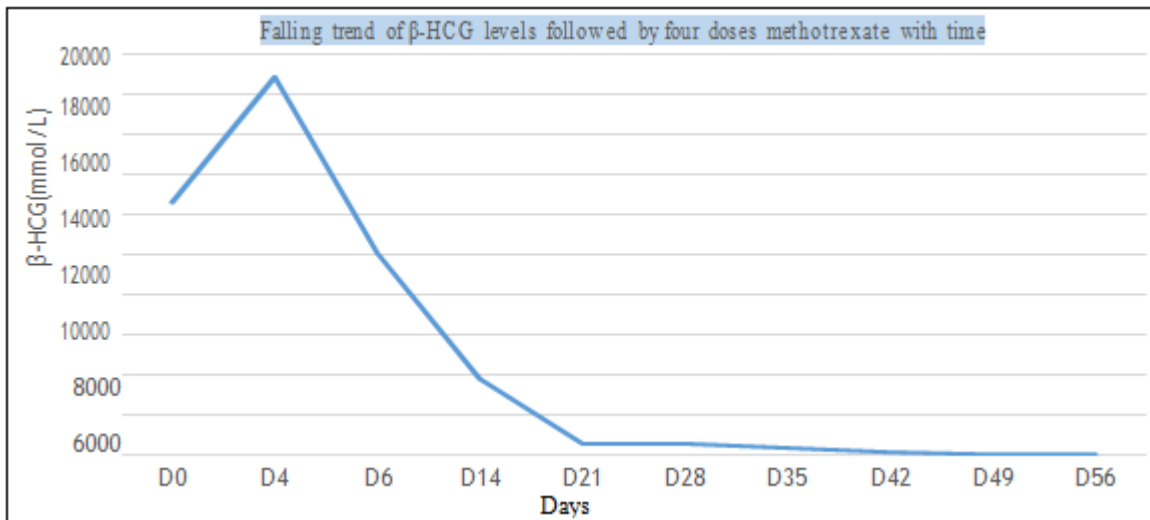


Figure 1: Trans Abdominal Scan Showing Early Scar Site Prenancy

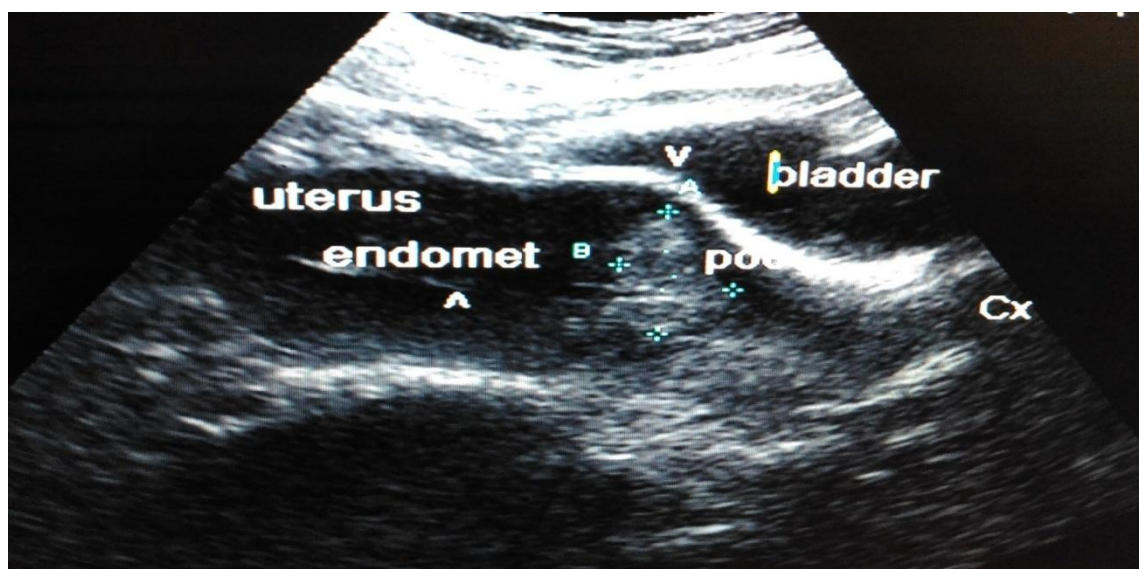


Figure 2: Trans abdominal scan done after two weeks of multidose methotrexate therapy showing hyperechoic area at scar site suggesting of absorbing gestational sac

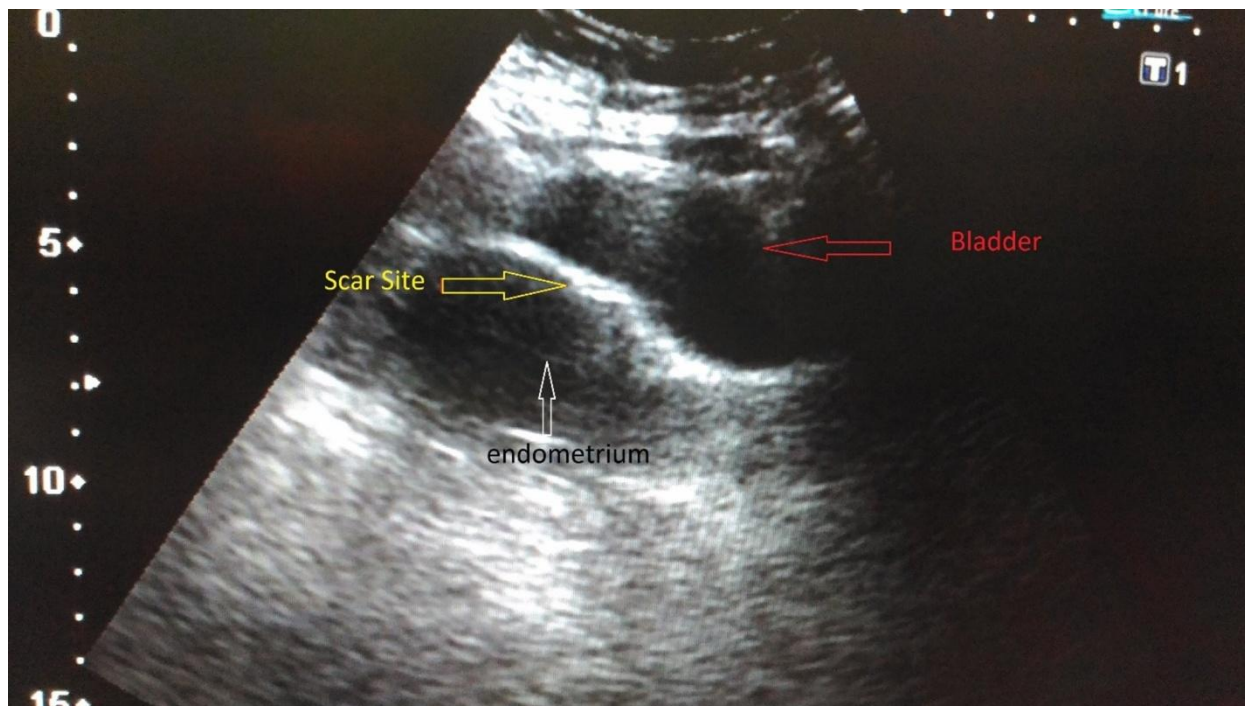


Figure 3: Transabdominal scan showing complete resolution of scar site pregnancy by end of 8 weeks

3. Discussion

In 1978, Larsen and Solomon reported the first case of cesarean scar pregnancy^[2] Few reports of cesarean scar pregnancies successfully treated conservatively with methotrexate and expectant management are available.. MTX resulted in resolution of cesarean scar pregnancy without surgical intervention. Systemic intramuscular MTX was previously reported as a treatment option for CSP patients. Haimov Kochman et al.^[3] reported two cases of CSP who were successfully managed by intramuscular Methotrexate, with complete disappearance of the gestational sacs. Two distinguishable types of CSP have been reported by Vial et al.^[4] Type I is characterized by a gestational sac implanted on the prior scar, progressing towards the cervicoisthmic region or towards the uterine cavity. Type I can sometimes harbor a viable fetus, but there is high risk of massive bleeding. The gestational sac in type II has implanted at the post-cesarean section defect, with progression towards the bladder or abdominal cavity. A type II CSP is more dangerous than type I, because the likelihood of life threatening bleeding and rupture is greater.

In recent years, many cases of CSP have been reported and various therapies have been introduced. The pathophysiology of CSP is not clearly known. The conceptus may infiltrate through a microscopic dehiscence tract of the myometrium and grow^[5] In addition, it can be assumed that blastocyst invades to any microscopic lesion, due to other causes such as myomectomy, hysteroscopy and even manual removal of the placenta likelihood of complications and failure may be related to gestational age.^[15]

There have been studies in the literature comparing single and multiple-dose Mtx treatments. Some of these concluded that multiple-dose Mtx treatment was more successful than a single dose. Cignini and coworkers.^[6] reported two cases of CSP, of which one case was at nine gestational weeks

underwent laparotomy. Subtotal hysterectomy was performed due to severe hemorrhage. Another case was reported at sixth week of pregnancy, which underwent hysteroscopy and the treatment resulted in a success. They concluded that early detection of CSP seemed to reduce complications. It is clear that early detection of CSP will lead to a reduced risk of bleeding and other complications. However, in terms of responsiveness to treatment, our study showed that medical treatment would be successful at early gestational age. The natural history of this condition remains unclear. Early diagnosis is thus important to avoid serious complications.

In our case, since the patient was stable and did not want to have a surgical procedure so we opted for medical treatment.

4. Conclusion

In conclusion, the management of CSP is not well established and there is no consensus about its treatment. However, given our experience and findings, multidose systemic methotrexate administration is feasible and can be performed as an outpatient procedure, which will hopefully lead to a successful treatment of CSP.

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