



CESAREAN SCAR PREGNANCY-*outcome of intra-amniotic methotrexate injection and managing its toxicity*

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Abstract:

Cesarean scar ectopic pregnancy is becoming increasingly common in tertiary care hospitals. It is a very rare type of ectopic pregnancy but it's dreadful because of its association with complications like uterine rupture, uncontrollable bleeding leading to hysterectomy. There is an increase in maternal morbidity and mortality and subsequent infertility. We are reporting a case of a 29 yr female G4P1L1A2 with USG diagnosed cesarean scar ectopic pregnancy who was managed with intra-amniotic injection of methotrexate under USG guidance with successful outcome. However, she developed methotrexate toxicity in post procedure period which was treated by giving inj filgrastim.

We conclude that conservative approaches for treatment of cesarean scar ectopics should be preferred over surgical approaches. Post treatment surveillance include serial β -hCG measurements and ultrasound examinations as indicated.

Keywords: Cesarean scar pregnancy, conservative management, methotrexate injection

Introduction

The rising frequency of cesarean section rates worldwide has been associated with an increased occurrence of serious complications in subsequent pregnancies, including uterine rupture and placenta accreta. Cesarean scar pregnancy (CSP), the development of a gestational sac, in a previous cesarean scar, is one of those complications. The incidence is 0.15% among pregnancies with a previous history of cesarean section.

More than 30 different treatment options have been reported for CSP, including expectant management, medical treatment, uterine artery embolization, surgical intervention and combination approaches.

For medical treatment, local or systemic injection of methotrexate (MTX) has been widely used. Methotrexate, which is an inhibitor of folic acid synthesis, and also inhibits synthesis of new purines and pyrimidines leads to the disturbed synthesis of DNA and cell proliferation. A single dose local MTX injection is easily performed. Local injection is thought to be more effective than systemic injection, with minimal side effects. There are 2 types of CSP. In one, the gestational sac grows inward (endogenous, type 1), while the other grows outward towards the bladder and abdominal wall (exogenous, type 2). Type 2 cases are thought to be at high risk of uterine rupture, but the management options based on these types of CSP have not been established.

Diagnosis of CSP

Transvaginal ultrasound for diagnosis of CSP using the following criteria, as defined in previous reports

1. Empty uterine cavity and closed empty cervical canal.
2. Placenta and gestational sac embedded in the caesarean section scar.
3. Thin (1-3mm) or absent myometrial layer between the gestational sac and the bladder.
4. Presence of embryonic/foetal pole and yolk sac with or without heart activity.
5. Presence of a prominent and at times rich vascular pattern at or in the area of a caesarean section scar in the presence of a positive pregnancy test.
6. Negative "sliding organs sign"

Case Report: A 29 year old G4P1L1A2 at 6+5 with prev 1 lscs with scar ectopic pregnancy in USG was admitted with complaints of bleeding per vaginum 2 days back. Her UPT was positive.



Fig1: USG showing caesarean scar ectopic pregnancy

Her β HCG was 87053. She was planned for intra-amniotic injection of methotrexate under USG guidance. On per vaginal examination uterus was around 6-8 weeks, soft, mobile, b/l fornices free. Patient was explained regarding the procedure and consent was taken. Under

aseptic precautions USG guided 18gauge needle was inserted in the visualized amniotic sac. Inj. Methotrexate 25 mg(in 5ml NS) was injected in the amniotic sac.

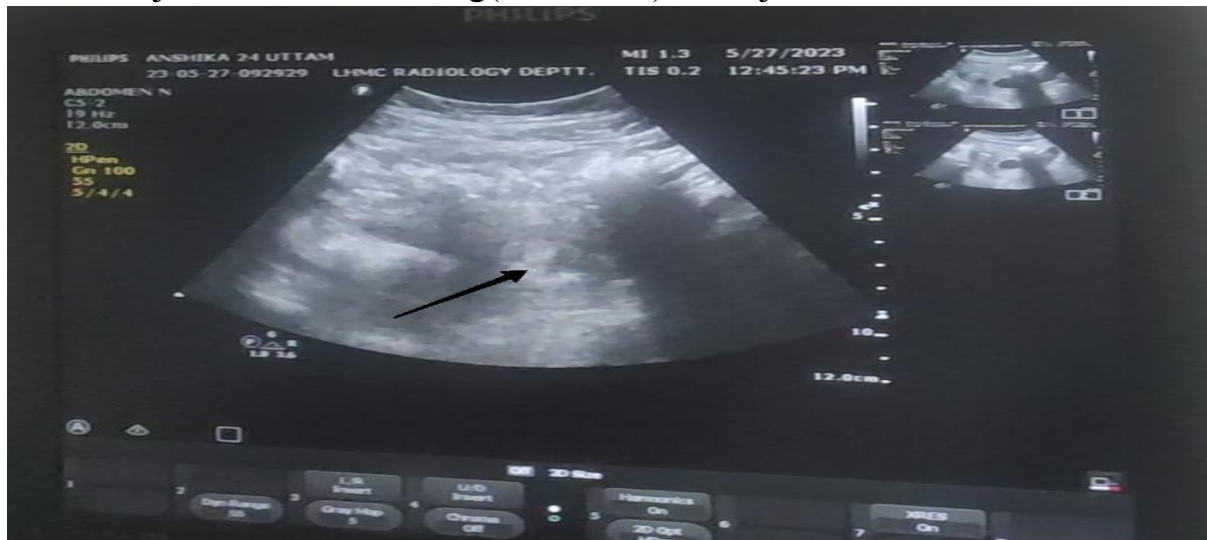


Fig2: Gestational sac of caesarean scar ectopic collapsed after intra-amniotic methotrexate injection

On next day, she developed high grade fever and loose stools. All cultures and sepsis markers (CRP, Procalcitonin) were sent. IV antibiotics were given.

Her β HCG was falling (39360, 5016, 3000) and USG was repeated which was showing absent cardiac activity. On day 2, she developed pancytopenia with neutropenia and fever was persisting. Radiation oncology referral was taken. Her cultures were negative. Conservative management was advised but due to further fall in TLC count (1340), diagnosis of methotrexate toxicity was made and Inj Filgrastim (300 micro gm) was given. 2 doses were given, after which there was an increase in haemoglobin, TLC count and platelet count, thus confirming the diagnosis of methotrexate induced pancytopenia. Patient was discharged in stable conditions. On follow up visits in opd, her β HCG regression curve showed a steady fall and took 8 weeks to become negative and monthly USG scans showed a reduction in the size of gestational sac.

DISCUSSION:

Caesarean scar pregnancy is a rare clinical entity. It is a life-threatening condition due to its potential to cause uterine scar rupture and catastrophic haemorrhage early in gestation and demands prompt recognition. There are no current management guidelines for the given condition due to its low incidence. Early diagnosis is the major factor to avoid complications and to allow conservative management.

Treatment essentially is aimed at elimination of the gestational sac and preserving the fertility. If the diagnosis is delayed, gestational sac becomes large and if there are obvious signs of rupture, then immediate surgical exploration is mandatory. Surgical management with minimally invasive techniques has also been reported.

Medical management mainly consists of methotrexate administration, either systemically or locally, or in combination. The guidelines, indications, contraindications and follow-up of medically managed ectopic pregnancies apply to the caesarean scar ectopics as well. Locally

administered methotrexate fails to reach the target tissue in effective concentration. Patients undergoing conservative management should be kept on close clinical follow up and should be counselled regarding the need of secondary treatment options if the primary therapy fails.

Expectant management of a viable scar pregnancy puts the mother at significant risk of an emergency hysterectomy if the pregnancy progresses beyond the first trimester. The pathophysiology of cesarean scar pregnancy remains to be established, but it is possible that the conceptus penetrates the myometrium through a microscopic dehiscent tract of the cesarean scar or the gestational sac implantation occurs in a poor healed cesarean section scar. It may also result from a defect in the endometrium caused by trauma created by procedures in assisted reproductive techniques.

Seow et al in his retrospective study concluded that ultrasound-guided methotrexate injection is the treatment of choice to terminate cesarean scar pregnancy. The medical treatment requires a prolonged follow-up (the hcg levels takes up to 4 months to return to normal) and implies a high cost. Bleeding may occur following the MTX injection which may require surgical intervention. Failure of pregnancy resorption and persistence of a relatively large gestational sac may imply a dilatation and curettage or a laproscopic approach.

Another treatment possibility is the uterine artery embolization (UAE) which is widely accepted as a conservative treatment in post partum hemorrhage in uterine fibroid. Although UAE seems to be promising in treating stable cases, it is not recommended as a primary line therapy.

CONCLUSION:

With early and accurate diagnosis, conservative management of caesarean scar pregnancies is feasible and it should be the preferred choice in young women. Transvaginal ultrasound examination for patients with previous history of caesarean section is very helpful in earlier detection. The process of resolution of the ectopic mass may be slow and it is imperative that the patient is kept under close follow up so that complications such as sepsis and haemorrhage may be picked up and treated. While treating with inj methotrexate, one should be aware of treatment of methotrexate toxicity if it occurs.

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CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

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