

# Successful Methotrexate Therapy in Management Caesarean Scar, an Ectopic Pregnancy: A Case Report

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**Abstract :** An ectopic pregnancy developing in a Caesarean scar pregnancy (CSP) is a very rare case. We describe the case of a 31 years old-women G4P2A1 6-7 weeks gestational age (wga), previous c-section 2 times, inter delivery time (IDT) 2 years. She came with chief complaint amenorrhoea for five weeks and was found to have a positive urine pregnancy test. Transvaginal ultrasonography showed uterus was within normal limit and there was a single intrauterine gestational sac positioned in the region lower segment caesarean section. a local injection of NaCl 0,3 % into the amniotic sac under ultrasound guidance resulted embryonic demise. Following the local injection, one doses of methotrexate were given intramuscular methotrexate 50 mg/m<sup>2</sup>. The early diagnosis of caesarean scar ectopic pregnancy via transvaginal ultrasound is fundamental for a successful conservative treatment.

## 1 INTRODUCTION

An ectopic pregnancy developing in a Caesarean scar pregnancy (CSP) is a very rare case (Sapana et al, 2014). Caesarean scar ectopic pregnancy occurs where in the conceptus is implanted into the site of previous caesarean section (Cunningham et al, 2014). Incidence of caesarean section is increasing worldwide, therefore more cases are diagnosed and reported (Srinivas et al, 2014). This type of ectopic pregnancy carries with it a high risk of maternal morbidity related to uterine rupture, miscarriage with hemorrhage, placenta praevia with or without accrete, and hysterectomy. Early diagnosis can offer preservation woman's fertility. Treatment options CSP are medical management to surgical techniques, which is medical use local/systemic methotrexate (MTX) (Ross, 2016).

## 2 CASE REPORT

A-31 years old-women G4P2A1 6-7 weeks gestational age (wga), previous c-section 2 times,

inter delivery time (IDT) 2 years. She came with chief complaint amenorrhoea for five weeks and was found to have a positive urine pregnancy test. Her first pregnancy was a spontaneous complete abortion of four months pregnancy. Her second pregnancy was an uneventful emergency caesarean section pregnancy at 9 months due to severe headache. She underwent elective caesarean section in her third pregnancy due to previous c-section 1 time (IDT 16 months).

Transvaginal ultrasonography showed uterus was within normal limit and there was a single intrauterine gestational sac positioned in the region lower segment caesarean section. CRL diameter 0,72 mm corresponding to 6-7 wga which is, fetal pole was present, myometrium thickness 2 mm and there was no free fluid in the pouch of Douglas (Figure 1-2).

She was in stable haemodynamic with a pulse rate of 88/min and blood pressure of 120/70 mmHg. Abdomen was large correspond to 6-7 wga. Laboratory tests for complete blood count, ureum and creatinine tests were within normal limit. Serum HCG was 6625 IU/ml. Since the patient wished to preserve her fertility, a conservative approach was

implemented. Because of fetal cardiac activity was still present, a local injection of NaCl 0,3 % into the amniotic sac under ultrasound guidance resulted embryonic demise. Following the local injection, one doses of methotrexate were given intramuscular methotrexate 50 mg/m<sup>2</sup>. Serial serum HCG values were performed at weekly interval.



Figure 2. Transvaginal ultrasonography showed gestation sac in the lower uterine segment and empty uterine cavity and cervical canal.



Figure 2 Transvaginal ultrasonography showed fetal heart rate of the fetus.

### 3 DISCUSSIONS

Ectopic pregnancy in a Caesarean scar was first reported in 1978 by Larson and Solomon (Persadie et al, 2005). The incidence of CSP has been estimated to range from 1/1800–1/2216 and it constitutes 6.1% of all ectopic pregnancies in

women with history of caesarean deliveries. The pathophysiology is the invasion of the blastocyst in the myometrium through minimal communication between the previous cesarean scar and the endometrial cavity (Vora and Bansal, 2017).

Risk factors include number of two or more previous cesarean sections, previous dilatation and curettage, other uterine surgery such as hysterotomy, hysteroscopy and myomectomy, abnormal placentation, previous manual removal of placenta, short time interval between the cesarean delivery and the current pregnancy and retroversion of the uterus which may lead to greater cesarean scar dehiscence, increasing the chance of implantation of the gestational sac in this region (Persadie et al, 2005). In this patient we found that she had history two or more previous cesarean sections.

The diagnosis of cesarean scar pregnancy was confirmed if all of the following sonographic using the following criteria (Vora and Bansal, 2017):

- (1) The uterus was empty, with clearly demonstrated endometrium;
- (2) The cervical canal was empty, without gestational sac or ballooning at the early diagnosis;
- (3) Presence of the gestation sac with or without a fetal pole, with or without fetal cardiac activity (depending on the gestation age) in the anterior part of the isthmic portion of the uterus; and an absence of normal myometrium between the urinary bladder wall and the gestational sac.
- (4) Color Doppler shows high velocity with low impedance peri-trophoblastic vascular flow clearly surrounding the sac.
- (5) In early gestations ( $\leq 8$  weeks), a triangular gestational sac that fills the niche of the scar and at  $\geq 8$  postmenstrual weeks this shape may become rounded or even oval
- (6) A thin (1-3 mm) or absent myometrial layer between the gestational sac and the bladder

The exact etiology of cesarean scar pregnancy is unknown. There are several hypotheses, proposed by different authors. There was two different type of cesarean scar pregnancy. First type of cesarean scar pregnancy is an implantation of conceptus on prior cesarean scar and it grows towards the cervicoisthmic space or the uterine cavity. Second type of cesarean scar pregnancy is a deep implantation into a cesarean scar defect, and it grows towards the urinary bladder and abdominal cavity. Transvaginal ultrasonography with color Doppler is very useful for diagnosis of cesarean scar pregnancies. It must be distinguished from other

types of abnormally implanted pregnancies, including cervical, cervicoisthmic, and cervicoisthmic corporeal pregnancies, as outcome and treatment may differ in each (Sapana et al, 2014).

CSP has showed to respond well to it (dose of 50 mg/m<sup>2</sup>), especially in those with b-hCG levels < 5000 mIU/ml. Conservative medical treatment is appropriate for a woman who is pain free and haemodynamically stable with an unruptured CSP of <8 weeks of gestation and a myometrial thickness < 2mm between the CSP and the bladder (Ash et al, 2007). In this case we use MTX. MTX resulted in resolution of cesarean scar pregnancy without surgical intervention (Jain, 2014).

Till now no well defined guidelines are available in literature regarding management of CSP. Ultrasound guided intra amniotic Methotrexate injection has been proposed as a method of choice after treatment of 12 cases in a 6 year period (Jain, 2014).

#### 4 CONCLUSIONS

The early diagnosis of caesarean scar ectopic pregnancy via transvaginal ultrasound is fundamental for a successful conservative treatment. Owing to their rarity, there is no consensus on treatment regimens. The options are medical, surgical or a combination of both methods.

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