

## A Management Conundrum of Cesarean Section Scar Ectopic Pregnancy

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Received: 26-12-2022 / Revised: 28-01-2023 / Accepted: 20-02-2023

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Conflict of interest: Nil

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### Abstract

The prevalence of caesarean scar ectopic pregnancy (CSEP) is rising as a result of more frequent C-sections and improved diagnostic tools. To lower mortality and morbidity, it is crucial to make an accurate and timely diagnostic and treatment plan decision. It is necessary to have both radiologist and gynaecologist expertise. Keep in mind that there is a high degree of mistrust, and that any delay in management could have negative effects. Here is a case study featuring three instances involving CSEP and its traditional line of management. The diagnosis was established using the patient's medical history, clinical examination, blood levels of beta-human chorionic gonadotropin (-hCG), hysteroscopy, ultrasonography, and histology. All the 2 patients were treated mostly with methotrexate, preserving future fertility. Ultrasound scans and serum hCG were used for the follow-up.

**Keywords:** Caesarean, Ectopic pregnancy, Methotrexate.

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### Introduction

The most uncommon type of ectopic pregnancy is one caused by a caesarean scar [1]. According to estimates, between 1/1,800 and 1/1,500 caesarean births were conducted [2]. Obviously, there is a dearth of information on both its occurrence and natural history. Worldwide, the prevalence of caesarean sections has increased, and as a result, more cases are being identified and reported [1]. Ectopic pregnancy is a disorder that poses a serious risk to life; it frequently results in consequences such

uterine rupture, severe haemorrhaging, hypovolemic shock, and maternal death [3]. Early detection and prompt management are essential for a positive outcome. High diagnostic accuracy is offered by colour flow doppler and transvaginal ultrasound [4]. Depending on the clinical presentation, methotrexate-based medicine or surgery are typically used to treat patients [5].

Since ectopic pregnancies caused by caesarean scars are a rare presentation that

can be challenging to detect, this case series' main goal is to highlight how difficult it can be to choose a management strategy for these cases. Patients in the current case series had their diagnoses verified by histology through transvaginal ultrasonography (TVUS), and they were effectively treated conservatively with methotrexate.

### Case Description:

#### Patient Profile:

Retrospective case studies of two patients (patients 1 and 2) who were sent to ABC

IN XYZ during 2020 and 2021 comprised the current study. Each of the two patients had had vaginal bleeding for one to four days before their outpatient visit. Complete obstetric histories were taken for all patients, and clinical diagnoses were made using TVUS, hysteroscopy, and, in the case of patient 2, histology as well. All patients received a multidose regimen of methotrexate as part of a conservative treatment plan. The clinical information and results are shown in Table 1.

**Table 1: Clinical background of individuals with ectopic pregnancies and cesarean scars**

Clinical History	Patient 1	Patient 2
Age (years)	38	28
Gravidity/ Parity	G3P1	G3P1
Presenting Symptoms	Per vaginal bleeding for the past 14 days	P/V spotting and pain abdomen for 7 days
Obestric History	2 previous preterm LSCS	2 Previous LSCS, Indication- Beech, 2 spontaneous abortion with D and C
Age at diagnosis (weeks)	6 Weeks	5 Weeks
Pre-treatment $\beta$ -hCG level (IU/l)	7851 mIU/l	35,835 mIU/ml
USG Finding	Ectopic pregnancy with adherent retained fetus and missed scar	In the anterior lower uterine segment, a gravid uterus with a clearly defined gestational sac in the myometrial area is present.

All two cases had mothers who were between the ages of 28 and 38. Patient 1 used the MTP kit on the advice of a nearby doctor despite having per vaginal (PV) bleeding for the previous 14 and 7 days, respectively, and wanting medical termination. They then experienced ongoing PV haemorrhage. Patient 2 visited the antenatal clinic with the main complaints of PV spotting and abdominal pain lasting a week. All patients were checked at admission for routine biochemical values that were within the normal range. Patients 1 and 2 were hemodynamically stable at the time of admission.

### Management

Patients 1 and 2 received conservative clinical care, including a multidose methotrexate regimen, serial USG, and serum beta-human chorionic gonadotropin (-hCG).

We intended to give patient 1 an outpatient multidose methotrexate treatment (0.2 mg/kg). On days 2, 4, 6, and 8, leucovorin (0.3 mg/kg) was given alternately with intramuscular methotrexate on days 3, 5, and 7. The patient complained of intermittent PV spotting during follow-up visits, but was treated conservatively with tranexamic acid. Regarding cases that lasted a long time and were followed up on, assurances were offered. The following five months were encouraged to use barrier contraception.

Hospitalized patient 2 received intra-amniotic KCl (embryocide), multidose methotrexate, and a 5 mL intra-amniotic infusion of 21% KCl following intra-amniotic aspiration guided by transvaginal sonography (TVS). On days 2, 4, 6, and 8, it was followed with intramuscular methotrexate (2 mg/kg), which was alternated with leucovorin (0.2 mg/kg). Patient 2 presented for follow-up after two months with intermittent PV haemorrhage, but was treated conservatively. Recovery was boosted by counselling and explanations of the treatment approach. For the following five months, barrier contraception was prescribed to prevent the teratogenic effects of methotrexate.

### Discussion

A form of ectopic pregnancy known as a CSEP is implanted entirely or partially outside the uterine cavity into the myometrium's old scar. Adenomyosis, IVF, previous uterine surgery, ectopic pregnancy, diverticulum, deficient caesarean scar, pouch, or niche (hinting to poorly healed scar), retroflexion of the uterus, previous caesarean for prematurity or breech presentation, emergency caesarean section, and single layer closure are risk factors that may be involved.

Despite the fact that some research have found a link between the frequency of caesarean sections and the prevalence of CSEP, our case series has not reached the same conclusion. Poor wound healing appears to be the primary pathogenesis [6]. Following implantation, low oxygen tension causes cytotrophoblast invasion to increase up to the myometrium and beyond. This then categorises CSEP into two broad categories. The more prevalent type 1 grows towards the direction of the uterine cavity. This type advances to a viable pregnancy and carries a high risk of vaginal bleeding. The second kind, which has an exceptionally high risk of uterine rupture, develops toward the pelvis, bladder, and/or abdominal cavity [7]. With

the aid of TVUS, 84.6% of cases may be diagnosed [8].

Timor-Tritsch and Monteagudo [2] researched the various CSEP treatment modalities.

A few of them include hysteroscopy, cervical dilation and curettage (D&C), excision of the CSP, hysterectomy or embolization of the uterine arteries, as well as other wholly medical procedures involving methotrexate. The modalities with the highest complication rates were MTX alone (62%), D&C (62%), and intramuscular MTX combined with D&C (86%), according to research [2].

However, the outcomes of the current study's treatment of patients 1 and 2 with methotrexate alone are in contrast to those of previously published data by Timor-Tritsch and Monteagudo [2].

The surgical options include isthmic excision, hysteroscopic removal, visually guided suction curettage, and abdominal or vaginal reconstruction. UAE or the Foley's balloon catheter can lower the risk connected with the surgery. Uterine rupture has not been proven to result from an unviable pregnancy. Therefore, local administration of an embryocidal medication followed by a methotrexate multidose regimen may show to be a practical choice. A weekly complete blood count, as well as liver and kidney function tests, should be delivered, and the patient should be closely monitored for adverse effects. The outcomes of following pregnancies are positive after conservative therapy, however there is a chance of placenta accrete and recurrent CSEP. A potential long-term concern is AV malformation [9,10].

### Conclusion

A pre-existing scar with first-trimester PV haemorrhage can be harmful. To lower mortality and morbidity, it is crucial to make the right diagnosis and treatment plan as early as possible. There must be

appropriate therapy and consistent follow-up. It is necessary to have both radiologist and gynaecologist expertise. Keep in mind that there is a high degree of mistrust, and that any delay in management could have negative effects. The majority of the management plan uses a medicinal, surgical, or combination approach. Which may be chosen depends on the patient's presenting complaint, the type of CSEP, the initial -hCG levels, and the level of knowledge available. In situations of Type 1 CSEP, hysteroscopy is a useful technique for both diagnostic and therapeutic purposes. It is important to create a uniform management protocol. To assist clinicians and patients in making decisions, more study on risk stratification and management is required.

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