

CASE REPORT

## Missed Diagnosis of Cesarean Scar Pregnancy: A Growing Reality

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### Abstract

Cesarean scar pregnancy develops in 1 in 2000 pregnancies. Although rare, it needs to be ruled out in all cases of early pregnancy with previous cesarean section especially when the gestational sac is implanted low in the cavity. It can lead to life threatening complications if timely diagnosis is not made. We present two cases of missed diagnosis to illustrate the diagnostic and therapeutic dilemma of this potentially fatal condition. The treatment modalities of this condition are uncertain. Although surgical wedge resection of the scar pregnancy may be the best treatment option medical treatment may be tried successfully as was done in our first case.

**Keywords:** Cesarean, uterine scar, ectopic pregnancy

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### Introduction

Although cesarean delivery is a common procedure, implantation of pregnancy within a cesarean scar is rare. It develops in approximately 1 in 2000 pregnancies<sup>1</sup>. The condition is dangerous with a potentially elusive diagnosis. A missed diagnosis can lead to severe haemorrhage during suction evacuation and a rupture uterus early in gestation if pregnancy is allowed to continue. With the phenomenal rise of cesarean section all over the world a high index of suspicion for cesarean scar pregnancy is required<sup>2</sup>. Early diagnosis with endovaginal sonography is required to prevent unexpected catastrophic situations thereby reducing morbidity and preserving fertility. The optimal treatment modalities of this condition are uncertain<sup>3</sup>. Selection of the mode of treatment should be done keeping in mind the patient's wishes based on the information currently available in literature<sup>4</sup>. We present two unusual cases of missed diagnosis of cesarean scar pregnancy to illustrate the management dilemmas of this rare condition.

### Case I

A 31 year old lady with one previous cesarean section presented to our hospital with history of painless continuous excessive vaginal bleeding for last two weeks following suction evacuation for missed abortion. The missed abortion was detected at 7 weeks gestation and the sac was reported to be low in uterine cavity on ultrasound (Fig1). The products of conception were not sent for biopsy. When she reported to us her vitals were stable. She was found to have significant vaginal bleeding. A pelvic ultrasound revealed an empty uterine cavity and cervical canal but there was a mixed echogenic mass about 53x 42x 41 mm at cervicouterine junction anteriorly with increased vascularity and low resistance on Doppler. (Fig 1) Her haemoglobin was 10gm%. Serum Beta HCG on the same day was found to be 10,485. A missed diagnosis of cesarean scar pregnancy was considered and extensive counseling regarding the treatment options was done with the patient and her relatives. Since patient was keen to try conservative treatment, 4 doses

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**Fig 1** Pelvic ultrasound shows mixed echogenic mass at cervicouterine junction (5.3x4.2x4.1 cm)



**Fig 2** Pelvic Ultrasound shows echogenic mass (3x3x2 cm)

of injection methotrexate (1 mg/km<sup>2</sup> bodyweight) were given alternately with folinic acid (0.1mg/km<sup>2</sup> body weight). She was symptomatically better and the serum Beta HCG was 2925 IU/ml two days after the last dose of methotrexate. She was kept on follow up but four days later patient presented with an acute onset of painless heavy vaginal bleeding. Her vitals were stable. Investigations revealed Haemoglobin of 6gm% and PCV of 23%. She was given three units of packed cells. Ultrasound now revealed a well circumscribed heterogeneous space occupying lesion 61x 48x 47 mm with a volume of 71cc in the anterior wall just above the cervix. There was no significant fluid in the pouch of Douglas. Considering the deteriorating condition of the patient and the fact that we did not have uterine artery embolisation facilities in our institute we offered surgical management to the patient which she refused. Finally bleeding controlled after 48 hours and Beta HCG fell to 308IU/ml. She was observed in the hospital for a week during which she did not bleed again. She was discharged with the advice of strict follow up. At the time of discharge the pelvic ultrasound showed a reduction in size of the mass 51x 40x 38 mm with decreased vascularity. Patient continued to bleed off and on but in small quantity and a follow up 2 months later showed the Beta HCG to be 5.27miu/ml. The mass on pelvic scan decreased to 3x3 x2 cm. (Fig 2). She was informed about the possibility of recurrent cesarean scar pregnancy and rupture uterus in subsequent pregnancy. She decided against future pregnancy and is on regular follow up.

## Case 2

A 32 year old woman with history of one cesarean section and one missed abortion presented at 35 weeks with leaking per vaginam and pain abdomen for last four hours. She was in early labour and cesarean section was decided for her due to persistent variable decelerations. On cesarean section scar dehiscence involving almost the whole thickness of scar was

discovered. The baby was depressed and required bag and mask ventilation. Both mother and baby had an uneventful postoperative recovery. On retrospective questioning it was found that the previous missed abortion was 2 years back and the sac was repeatedly found very low in the uterine cavity on sonography prior to the disappearance of fetal heart beat. From the history it was also deciphered that she had massive haemorrhage after evacuation and she had to be transfused six units of packed cells and the bleeding was finally controlled with uterotonics. There is a strong possibility that it was a case of missed cesarean scar pregnancy. The scar had weakened and given away in the subsequent pregnancy.

## Comment

The rarity of cesarean scar pregnancy (CSP) can be gauged from the fact that only 161 cases had been reported in the English literature till 2006 (5). With growing awareness more cases are being reported since then<sup>6</sup>. For a case to be reported as CSP the gestation sac should be completely surrounded by myometrium and the fibrous tissue of the cesarean scar absolutely separated by endometrial cavity or fallopian tube. The invasion of myometrium probably happens through a microscopic tract due to previous uterine surgery like cesarean section<sup>7</sup>. Awareness of this possibility is of paramount importance in peripheral remote areas where endometrial curettage for medical termination of pregnancy is often done by Gynaecologists in small setups when unexpected torrential bleeding during evacuation can lead to catastrophic sequel.

The presentation of our first case closely resembled that of Lee and colleagues<sup>8</sup> in which a woman 2 weeks after D & C abortion at an unspecified gestational age developed profuse vaginal bleeding and ultrasound revealed a well encapsulated heteroechoic mass over the anterior wall. But serum beta HCG in this case as opposed to ours was negative. Laparoscopy revealed

a 5 cm mass arising from the serosa of cesarean scar with necrotic chorionic villi and the defect was closed with suturing. Similar to our case an ultrasound evaluation before curettage was not available and therefore the possibility of intramural haematoma following perforation after curettage could not be ruled out. However a high serum beta HCG in our case narrowed the possibility to either CSP or cervical pregnancy or gestational trophoblastic disease.

The presenting symptoms of all the above conditions are similar and may resemble an intrauterine threatened abortion. Gestational trophoblastic disease is usually diagnosed easily if an ultrasound is done in the first trimester<sup>9</sup>. But a cesarean scar pregnancy and cervical pregnancy may often be confused with inevitable abortion until a high index of suspicion is maintained on seeing the sac low in uterine cavity. A few cases in both these conditions are only diagnosed after an attempted suction evacuation when the patient has torrential haemorrhage like in both our cases. Strict criteria during ultrasound evaluation can differentiate between cervical pregnancy and cesarean scar pregnancy. In the latter cervical canal along with uterine cavity will be empty and the gestational sac will be in the anterior uterine wall at the level of isthmus more clearly identified by sagittal ultrasound along the long axis of the uterus<sup>5</sup>.

There are no universal treatment guidelines for cesarean scar pregnancy. Treatment objectives include performing feticide prior to rupture to remove the gestation sac and to retain patient's future fertility. Expectant management can put the mother at risk of emergency hysterectomy if pregnancy continues beyond 12 weeks<sup>10</sup>.

Curettage can potentially rupture the uterine scar implantation and disrupt the myometrium leading to severe haemorrhage especially if gestation is more than 7 weeks<sup>11</sup>. Therefore blind curettage as a primary treatment should be discouraged.

Conservative treatment options should be offered when the patient is clinically stable, the gestational age is less than 8 weeks and the myometrium is less than 2 mm thick between the CSP and the bladder<sup>6</sup>. Since our first patient largely fitted into this realm we decided to try this form of treatment after informed consent. Non-surgical treatment options include systemic and local injections of the sac with methotrexate and hyper molar glucose<sup>5</sup>. Systemic methotrexate as primary treatment for cesarean scar ectopic pregnancy is successful in 71—80% cases<sup>1</sup>.

Combined systemic and local methotrexate has been tried to prevent continued bleeding and rupture

of myometrium<sup>5</sup>. We tried using only systemic methotrexate first and were met with partial success. Although the HCG level fell after a week of starting treatment, patient had excessive bleeding 4 days after discharge from hospital and a surgical intervention had to be recommended. But patient refused consent and fortunately recovered on further conservative management. With medical management this type of complication may be more common when the sac dissolves and the preexisting vascularity of the scar pregnancy is high. It took 8 weeks for the beta-HCG to drop to normal in our patient. Therefore it is hard to predict when the cesarean scar pregnancy mass completely resolves after conservative treatment. In some cases it has been found to take several months to a year<sup>12</sup>. Assessment of uteroplacental neovascularisation pattern on Doppler ultrasound may be the most important determinant for monitoring the response of treatment<sup>12</sup>. Those cases with extensive neovascularisation may be more appropriately treated with primary uterine artery embolisation Bilateral uterine artery embolisation is chosen sometimes with medical management to minimise haemorrhage if rupture occurs<sup>4, 13</sup>.

Hysteroscopic and Laparoscopic removal of cesarean scar pregnancy mass have been tried depending on whether the mass is growing towards the uterine cavity or towards the abdominal cavity<sup>5</sup>. Laparoscopy or Laparotomy followed by wedge resection of the pregnancy within the scar or hysterectomy (if no future fertility is desired) as soon as diagnosis is confirmed may be the best treatment option<sup>14</sup>. But in those case where surgical intervention is refused or in early diagnosed cases conservative treatment can be attempted after detailed discussion with the patient as was done in our first case.

Since uterine scar dehiscence usually accompanies cesarean scar implantation potentially affecting future pregnancies only surgical resection offers the opportunity to remove the pregnancy and simultaneously repair the defect<sup>1, 4</sup>. Such treatments have resulted in successful pregnancies. But few authors have reported successful pregnancy outcomes after conservative treatment also<sup>12</sup>. In our second case we were fortunate in having a favourable pregnancy outcome despite scar dehiscence and impending rupture in a subsequent pregnancy. In all future pregnancies after scar implantation early TVS is recommended to examine the location of gestational sac and a careful survey for placenta accreta should be done as pregnancy advances. Repeat cesarean section upon achievement of lung maturity and prior to labour seems prudent for women with prior CSP to avoid the possibility of uterine rupture.

It should be a routine practice to examine the appearance of a previous cesarean section scar in every early pregnancy unit. More research is required to guide clinicians regarding optimal management of this potentially risky clinical condition

### Acknowledgment

Funding: The study was supported by intramural funding from Sitaram Bhartia Institute of Science and Research.

Disclosure of Interests: We declare that we have no conflict of interest

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