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## Case Report

# Conventional laparotomy for management of caesarean scar ectopic pregnancy: a case report

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### ABSTRACT

Increase in the rates of caesarean deliveries has led to a concurrent rise in the number of caesarean scar ectopic pregnancies (CSEP). With recent advances, diagnosis can be made at an early gestational age, hence facilitating a prompt intervention. With the varied treatment options available, choosing the right one may possess a clinical dilemma. However, in a low resource setting, conventional laparotomy may be the only option feasible. A case of CSEP managed with laparotomy is presented.

**Keywords:** Caesarean section, Ectopic pregnancy, Pregnancy, Laparotomy, Trans-vaginal ultrasound.

### INTRODUCTION

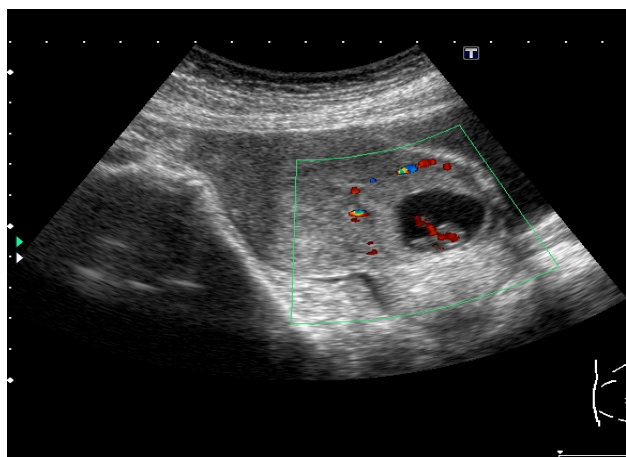
Caesarean scar ectopic pregnancy (CSEP) is a rare form of ectopic pregnancy where the gestational sac is implanted in the myometrium at the site of the previous caesarean scar. The incidence ranges around 1: 2000 and is on an upward trend, due to increased rate of caesarean sections.<sup>1</sup>

While little is known about the epidemiology, screening methodologies and treatment options, this condition poses a diagnostic as well as therapeutic challenge to the treating gynaecologist. It may end up as a life threatening event for a woman desirous of further child bearing.

### CASE REPORT

A 33 year old, G4P1L1A1MTP1, with previous one LSCS, was referred to our municipal general hospital, with ultrasound suggestive of caesarean scar ectopic pregnancy of 8.2 weeks gestation. Patient was asymptomatic on admission.

On examination, there was no tachycardia, with normal blood pressure and unremarkable systemic examination. There was no guarding, tenderness or rigidity on abdominal examination. On per speculum examination, there was no bleeding. Bimanual examination revealed uterus of 8 weeks size, anteverted, bilateral fornices free, with no tenderness. Ultrasonography showed a single live gestation with gestational sac measuring 2.3 cm corresponding to 8.1 weeks gestation in the lower anterior myometrium, corresponding to the site of previous caesarean scar with maximum thickness around the scar of 4 mm (Figure 1). A 5x3.5 cm corpus luteal cyst was noted in the right ovary. On admission,  $\beta$ -hCG level was 81,198mIU/ml. MRI Pelvis confirmed the ectopic pregnancy of 8.5 weeks within the anterior myometrium at the site of the previous caesarean section scar with thinned out myometrium. Scar thickness was 3.3mm. The endometrial thickness was 1.6 cm with no evidence of gestational sac in the endometrial cavity (Figure 2).



**Figure 1: Ultrasonography showing gestational sac in the lower anterior myometrium, corresponding to the site of previous caesarean scar.**

Decision of surgical excision of the scar ectopic was taken. Intra operatively the uterus was 8 weeks size, anterior wall of isthmus appeared ballooned out, distended and vascular (Figure 3). The bladder was pushed down and the isthmic portion was transversely incised. The sac and the placenta was removed en-mass. The scar was excised, taking care not to invade the integrity of the uterine cavity and edges sutured. The uterine cavity was curetted. Histopathology of the specimen confirmed the diagnosis of caesarean scar ectopic pregnancy examination. Patient recovered uneventfully. Repeat  $\beta$ -HCG showed decreasing titre of 31,074mIU/ml. Histo-pathological report confirmed the diagnosis of caesarean scar ectopic pregnancy. Patient was discharged on day 4 of surgery.



**Figure 2: MRI pelvis confirming the ectopic pregnancy at the site of the previous caesarean section scar with thinned out myometrium.**



**Figure 3: Intraoperative image.**

## DISCUSSION

Caesarean scar ectopic pregnancy represents a rare type of extra-uterine pregnancy. Here, the fertilized ovum nidates in the myometrium, within the scar of a previous Caesarean delivery.<sup>2</sup> Histopathologically, it is postulated to be a continuum of morbidly adherent placenta.<sup>3</sup> The most probable mechanism appears to be the implantation of the gestational sac into the uterine wall through a tract from the endometrial canal up to the scar tissue or through a small internal dehiscence of the scar.<sup>2</sup>

Risk factors for CSEP include history of previous MTP, history of placental pathology, ectopic pregnancy, multiple caesarean sections and caesarean breech delivery.<sup>4</sup> An unrecognized growing CSEP may result in uterine rupture, uncontrollable metrorrhagia, and bleeding into the abdominal cavity; hence, early and accurate diagnosis and therapy are necessary to prevent the development of severe complications.<sup>2</sup>

Rapidly available radio-immuno assays for  $\beta$ -HCG have simplified the diagnosis of ectopic pregnancies.<sup>2</sup> An important step for an early diagnosis is a careful look out for ultrasound features of CSEP during the first routine ultra-sonographic examination of a patient. While trans-vaginal sonography (TVS) is the preferred first step, magnetic resonance imaging (MRI) is helpful in making the diagnosis if TVS is inconclusive.<sup>3,5</sup>

The main treatment objectives include preventing massive blood loss, preserving the uterine function, and women's health and quality of life. Current data do not support expectant management. After diagnosis, single or combined medical and surgical treatment options should be provided, so as to preserve the uterus and thus the fertility.<sup>6</sup>

Expectant management has no role in the management of CSEP due high risk of rupture.<sup>2</sup> Conservative procedures include suction and curettage, use of methotrexate, local or systemic and surgical excision- laparotomy,

laparoscopy, including hysterectomy, with or without uterine artery embolisation.

The choice of treatment modality depends upon various factors like site of implantation, gestational age, size of gestational sac, thickness of uterine wall at site of implantation,  $\beta$ -HCG level at the time of diagnosis and initial presentation.<sup>7</sup>

Suction curettage is an option for conservative treatment in patients who have a myometrial thickness of more than 4.5 mm.<sup>7</sup> This is because, a combination of a gestational sac size corresponding to a gestational age  $\geq 7$  weeks, coupled with a deep implantation, can result in an unsatisfactory outcome of surgical evacuation as a means of treating CSEP.<sup>8</sup> In our patient, the anterior myometrial thickness was around 3.3 mm and no communication with the uterine cavity, with a gestational age corresponding to 8 weeks 5 days.

Though local methotrexate through ultra-sonographic and hysteroscopic-directed procedures have the lowest complication rates, careful attention should be paid to the possibility of persistent and recurrence of CSEP.<sup>9-11</sup> Apart from a slight reduction in blood loss, systemic methotrexate, methotrexate uterine artery injection/embolisation and excision by laparotomy have been found to be comparable.

Uterine artery embolisation, though not available in our institution, is a commonly used modality, for CSEP masses for gestation ages lesser than 8 weeks and a diameter of 6cm or less, beyond which the outcomes tend to be unsatisfactory.<sup>12</sup> Combined laparoscopy and hysteroscopy is much safer and more effective than uterine curettage as a supplementary measure following UAE.<sup>13</sup> Newer techniques include robotic-assisted laparoscopic removal of caesarean scar ectopic and combined use of gefitinib and methotrexate treatment for non-tubal ectopic pregnancies.<sup>14,15</sup>

Despite all these newer advances in surgical methods of treatment, a conventional laparotomy, as was done in our patient, still appears to be an acceptable standard, especially in low resource institutions.<sup>2</sup>

There is a paucity of literature about management of Caesarean scar pregnancy, and it has been suggested that every individual case be reported<sup>2</sup>. This case is being reported for the same purpose, with the ultimate purpose of improving maternal outcomes.

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