



ORIGINAL RESEARCH PAPER

Obstetrics & Gynaecology

CHRONIC ECTOPIC – CESAREAN SCAR PREGNANCY- A CASE REPORT

KEY WORDS:

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ABSTRACT

One of unforeseen consequences of our increasing reliance on cesarean delivery is gestation in cesarean scar. Cesarean scar pregnancy (CSP) is a rare entity and can cause serious complications. First case of CSP was reported by Larsen and Solomon in 1978 as a postabortal haemorrhage -uterine scar sacculus. Since then, cases have been reported leading to a better understanding. Liberal use of imaging studies helps early detection and avoid complications like scar rupture and excessive hemorrhage, which may require a hysterectomy. Patients who are vitally stable have more treatment options including conservative management. Hence, obstetricians/gynecologists and radiologists must be highly vigilant of this potentially fatal complication.

INTRODUCTION

Cesarean scar pregnancy (CSP) is rarest kind of ectopic pregnancy implanted in myometrium at previous cesarean scar, causing fatal consequences. Thus, it is important that early and accurate diagnosis is obtained in order to avoid complications and preserve fertility.

In this paper, we describe a case of cesarean scar pregnancy which presented as a case of suspected cervical pregnancy/ cervical abortion that was treated successfully by timely, systematic approach and anticipatory preparation for torrential hemorrhage.

CASE

A 25-year-old female, gravida 2 para 1, with previous history of cesarean section 9 months back, was admitted to hospital for vaginal bleeding (scanty to mild) since 8 weeks. She had history of MTP pill consumption (self prescribed), 8 weeks back, for a 6 week (uninvestigated) amenorrhoea. Physical examination demonstrated conscious, oriented patient with severe pallor (Hb= 4.1 gm%) and low BP (90/60 mm of Hg). Per speculum examination showed a close external os along with cervical ballooning. Bimanual examination revealed an enlarged, bulky cervix, soft bulky and tender uterus with no adnexal masses. Transvaginal ultrasound revealed empty uterus with thickened endometrium of 11mm, 3mm thickness at previous scar site, bladder planes maintained, no adnexal mass, no fluid in cul-de-sac, but echogenic mass in cervical region which had vascularity in 3/4<sup>th</sup> of circumference suggestive of either cervical pregnancy or a cervical missed abortion.

Couple was counseled regarding need for further investigation in form of bhcg and MRI, which they refused, in view of financial constraints. They directly opted for operative intervention along with blood transfusions and consented for further management. Due to general condition and logistic issues, laparoscopic route could not be taken up, and decision of laparotomy was taken. Intra op impending rupture at previous scar site was noted. Products of conception were seen protruding out, which were evacuated completely. Scar site was excised and sent for HPE. Uterus was repaired in two layers, hemostasis achieved and omentum was interposed between uterus and bladder. Couple had consented for Tubal ligation prior to surgery, hence was done accordingly. Abdomen was closed in layers. With required blood transfusions and supportive medication, patient recovered uneventfully in coming 48 hours and was discharged on day 3. At routine day 7 and day 28 follow up, patient improved dramatically and was stable clinically, with improved haemogram reports. USG in 2<sup>nd</sup> month follow up revealed a normal uterine size, healthy scar and cervix.

DISCUSSION & REVIEW OF LITERATURE - 1-6

Late consequences of the "epidemic" of cesarean deliveries, such as placenta previa and morbidly adherent placenta are known, but lesser known and documented, potentially fatal consequence is—the first-trimester CSP.

This condition is **defined** as gestation completely surrounded by myometrium and fibrous tissues of cesarean section scar and separated from endometrium and endocervical canal. The **pathophysiology** of cesarean scar pregnancy remains to be established, but it is possible that the conceptus penetrates the myometrium through a microscopic dehiscence tract of cesarean scar or gestational sac implantation occurs in poor healed cesarean section scar. It may also result from a defect in the endometrium caused by trauma created by procedures.<sup>2</sup>

The gestational age at diagnosis range from 5 to 12.4 weeks (mean 7.5 ± 2.5 weeks) and the time interval between the last cesarean and the CSP was 6 months to 12 years.

On review of the **various case reports**,<sup>1-3</sup> it was noted that CSP were incidental ultrasonography finding in asymptomatic woman while some present with mild painless vaginal bleeding. In a lesser percentage, it was accompanied with mild to moderate abdominal pain. The uterus may be tender during examination if the CSP is in the process of rupture. A patient with a ruptured CSP may present in a state of collapse or hemodynamically unstable. Most of the reported cases rarely progressed beyond the **first trimester**.

If pregnancy in a cesarean scar progressed to **second or third trimester**, there would be an increased risk of uterine rupture with massive hemorrhage, with high risk of hysterectomy causing serious maternal morbidity affecting future fertility.

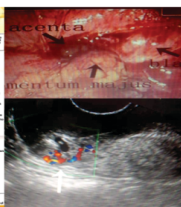
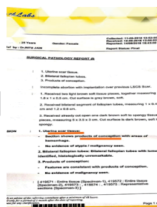
Miscarriages (Abortion and missed abortion) and cervicoisthmic pregnancies can be sources of **confusion in diagnosis** of CSP, as happened in the case reported. Ultrasonography is precious diagnostic instrument to differentiate these conditions. The differentiating points between CSP and cervicoisthmic pregnancy include the absence of healthy uterine tissues between the sac and the bladder.

**Transvaginal sonography** with/without color flow Doppler is **gold standard** for diagnosis. MRI may be used as an adjunct.

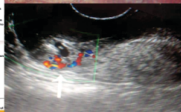
Diagnostic criteria are as follows:<sup>6</sup>

1. An empty uterine cavity and cervical canal.
2. A gestational sac in anterior part of uterine isthmus.
3. An absence of healthy myometrium between bladder and gestational sac.
4. Circular blood flow surrounding sac must also be clearly visible. CSPs were noted to be well perfused on Doppler examination. On pulsed Doppler examination, flow waveforms of high velocity (peak velocity >20 cm/s) and low impedance (pulsatility index <1) have been reported.<sup>3</sup>

HPE REPORT



PER OP IMAGE



USG-DOPPLER

Evaluation of the gestational-sac implantation site using COS (**cross over sign**) criteria is a simple and reproducible tool for ascertaining relationship between ectopic sac, cesarean scar and anterior uterine wall.<sup>5</sup>

**CLASSIFICATION** (Vial et al)<sup>2</sup>

- CSP-I - Implantation of amniotic sac into previous CS with progression of pregnancy toward cervico-isthmic space and uterine cavity. Such a situation may allow viable birth, but at an increased risk of massive bleeding from the site of implantation.
- CSP-II - Deep implantation into CS defect with infiltrating growth into uterine myometrium and bulging from serosal surface of uterus. Thickness of uterine myometrium between sac and bladder wall is usually <4 mm. Because of high risk of uterine rupture with life-threatening hemorrhage during first trimester, CSP-II may result in emergency hysterectomy.

As it is rare condition, there are no specific guidelines available.

**Management** of CSP, based on gestational age, hCG levels, and presence of cardiac activity.<sup>4</sup> The main aim of treatment is to prevent massive blood loss and conserve uterus to maintain future fertility, women's health, and quality of life.

Treatment modalities –

1. **Medical**
2. **Surgical**
3. **Combined.**

- The **medical treatment** consists of- **MTX administration locally**, combined MTX into sac and **potassium chloride/hyperosmolar glucose /crystalline trichosanthin (embryocide) injected locally** into fetal heart. **Systemic MTX** administration has been found to be more effective when hCG levels  $\leq$  5 000 IU/L with success rate of 71-80% , 6% requiring hysterectomy<sup>2</sup>. **Intralesional injection** and/or other additional interventions are used when levels  $\geq$  5,000 IU/L. Following systemic administration of MTX, gestational sac could bulge into uterine cavity and this could help in performing an easier and uncomplicated dilatation and curettage procedure. Medical treatment requires a prolonged followup (hCG takes upto 4 months to normalise) , implies a high cost. Bleeding may occur following the MTX injection, which may require surgical intervention.

- The **surgical approach** includes **CONSERVATIVE AND RADICAL** procedures.

A. Conservative management is considered when there is silent miscarriage in very early pregnancies and beta-hCG values closely monitored, or in asymptomatic , hemodynamically stable unruptured CSP  $\leq$  eight weeks and ultrasonography shows myometrial thickness  $\leq$  2 mm.

The conservative procedure includes - Evacuation / DnC , excision of trophoblastic tissues and repair of defect by laparotomy / laparoscopy. Hemostasis by **local compression** can be achieved in case of intraoperative bleeding, by inserting a 16-22 G **Foley's catheter** to level of implantation site, which is gradually deflated and removed after 12–24 hours. Follow-up is done on weekly basis at outpatient department by clinical assessment and measurements of hCG levels. Follow-up ultrasound done monthly until it is confirmed that all tissue has been expelled or absorbed. Failure of pregnancy resorption and persistence of a relatively large gestational sac may imply a **dilatation and curettage/laparoscopic intervention**. Another important issue is condition of uterine scar left after medical treatment and its subsequent behavior in future pregnancies (dehiscences are reported). Another treatment possibility is **uterine artery embolisation (UAE)**, although seems promising in treating stable cases, it's not recommended as primary line therapy. Robinson et al reported novel approach of **laparoscopic guided hysteroscopic CSP evacuation**, which help reduce bladder injury and intraoperative hemorrhage. **Paracervical injection of vasopressin** could further help reduce operative

bleeding. **High intensity focused ultrasound** combined with **suction curettage under hysteroscopic guidance** was recently reported to be safe and effective.

**B. Radical surgical treatment-** Hysterectomy is recommended (primary) mode of treatment, when other modalities fails/not available or when patient is hemodynamically unstable. Huanxiao et al, reported transvaginal hysterotomy approach for removal of ectopic tissue and repair of uterine defect.

Some authors recommended **future pregnancies** to be avoided for  $\geq$ three months and probably 1-2 years. No particular contraceptive method has been reported to be superior to others. Successful viable intrauterine pregnancies were reported by many authors following conservative management .An early transvaginal ultrasound should be done to assess location of new pregnancy and close monitoring during rest of pregnancy is recommended. A vaginal delivery is recommended unless some other obstetric indication for operative delivery. Three cases of **recurrent CSPs** are reported in world literature. For women with history of ruptured CSP, very thin or absent myometrium between the CSP and bladder, an elective cesarean delivery is advocated in current pregnancy to prevent possible risk of spontaneous rupture.

**CONCLUSION**

CSP is a life threatening condition affecting maternal morbidity and loss of future fertility and incidence is rising due to increasing incidence of cesarean sections. The liberal use of transvaginal ultrasound to assess early pregnancies helps early diagnosis and planning of the management. Present day clinician should be aware of such a condition and have a high index of suspicion. As there are no evidence based recommendations available, clinicians will have to depend on available case reports and counsel women accordingly on various treatment options available to make informed choice.

**LEARNING POINTS** - There is no any single and effective treatment protocol<sup>1</sup>

1. **Act fast- Earlier the diagnosis, better the outcome.**
2. Almost 30% are **misdiagnosed**, contributing to large number of treatment complications.
3. In general, treatment should be **individualized**.
4. Thorough **counseling** is paramount. **Fully inform the patient.**
5. Presence of a **live cesarean-scar pregnancy** requires **immediate, decisive action.**
6. **Complication rate is 44% (331 of 751 cases)' when treatment modalities were used alone. Consider combination treatments.**
7. **Keep a catheter at hand.**
8. **Cesarean-scar pregnancy is an entity distinct from 'garden variety 'of tubal ectopic pregnancy. Do not confuse the terminology or treatment (Single dose MTX not recommended).**

**REFERENCES**

1. Ilan E. Timor-Tritsch, MD; Ana Monteagudo, MD; and Steven R. Goldstein, MD How to identify and manage cesarean-scar pregnancy; Vol. 26 No. 6 | June 2014; obgmanagement.com.
2. Vora PH, Bansal V. Cesarean scar pregnancy: clinicians challenge. Int J Reprod Contracept Obstet Gynecol 2017; 6:2101-3.
3. Gozdemir E, Simavli S (2014) Cesarean Scar Pregnancy: Diagnosis and Treatment. J Nurs Care 3: 182. doi:10.4172/2167-1168.1000182
4. Fu, Li-Ping, BM\* Therapeutic approach for the cesarean scar pregnancy. May 2018, vol 97, issue 18, pg 476; doi: 10.1097/MD.00000000000010476.
5. G. Cali ,F. Forlani ,I. E. Timor-Tritsch ,J. Palacios-Jaraquemada ,G. Minneci ,F. D'Antonio Natural history of Cesarean scar pregnancy on prenatal ultrasound: the crossover sign 15 July 2016 .
6. Diagnosis and Management of Ectopic Pregnancy (Green-top Guideline No. 21) Published: 04/11/2016.