Case Report

Caesarean Scar Ectopic Pregnancy

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Abstract
Caesarean scar ectopic pregnancy (CSEP) is a rare type of ectopic pregnancy, that got implanted in a previous C-section scar. Early recognition of the salient sonographic findings is critical because a delay can lead to increased maternal morbidity and mortality. Magnetic resonance imaging is a valuable troubleshooting tool. There is no standardized protocol for cervical pregnancy and CSEP management. The most successful treatments are methotrexate injection and uterine artery embolization (UAE). We present a case of viable caesarean scar pregnancy, which was timely diagnosed and promptly managed.

Key Words: Caesarean scar ectopic pregnancy (CSEP), Methotrexate, Mortality, Uterine artery embolization

Introduction
Caesarean scar pregnancy is an ectopic pregnancy implanted in the myometrium at the site of previous caesarean section scar. It has an estimated incidence of ~1:1800-2200 pregnancies.1 This condition is uncommon but is of potentially devastating occurrence. The incidence is increasing as caesarean deliveries are becoming more common. It is generally thought that a caesarean scar pregnancy occurs when a blastocyst implants on fibrous scar tissue within a wedge-shaped myometrial defect in the anterior lower uterine segment at the site of a prior caesarean scar. The myometrial defect most commonly develops after caesarean deliveries, but scar pregnancies have also been reported after other uterine surgeries, such as dilation and curettage, myomectomy, metroplasty, hysteroscopy, and manual removal of the placenta.2 Up to 72% of caesarean scar pregnancies occur in women who have had 2 or more caesarean deliveries.2 There is no standardized protocol for cervical pregnancy and CSEP management. The most successful treatments are methotrexate injection and uterine artery embolization (UAE).3 The advancement of laparoscopic management and suturing is the most effective measure in confirmation as well as treatment of CSEP.

Case Report
We present a case of a 36-year-old female, gravida 3, para 2, with a previous history of two caesarean sections, who presented to us with vaginal bleeding and dull lower abdominal pain. General physical examination demonstrated stable vital signs. Bimanual examination revealed an enlarged uterus with no adnexal mass. Baseline investigations were carried out and urine pregnancy test was done which was positive. Abdominal sonography with a full bladder was done to give a panoramic view of the pelvis and uterus. It revealed a gestational sac with fetal pole, which was anteriorly located in the lower uterine segment. There was no intervening healthy myometrium between posterior wall of urinary bladder and gestational sac. Gestational sac measured 23 mm (6 weeks 2 days). CRL measured 10.8(7 weeks 3 days)(figure 1). Cardiac flicker was positive. Heart rate was 107 beats/min (figure 2). There was no fluid in the cul-de-sac. Transvaginal ultrasound was done which was consistent with findings of abdominal sonography and which more clearly demonstrated the caesarean scar pregnancy. Color Doppler showed color flow signals between the posterior bladder wall and the gestation within the placenta. The serum level of β subunit of Human chorionic gonadotropin was 8320 mU/ml.MRI pelvis was advised to the patient, which she failed to carry out due to affordability problems.

The patient was counselled regarding her disease and its management options, she underwent medical treatment first comprising of both local and systemic Methotrexate therapy. It comprised of two intramuscular injections (1 mg/kg of body weight or 50 mg/mm² of surface area) which were given at an interval of 2 days. No progress was noted. A laparotomy was then performed with Pfannenstiel incision under general anesthesia. The gestation was identified at anterior uterine segment, which was separated from it via

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Received: Dec 1,2016; Accepted: Dec 25,2016
dissection. The cesarean dehiscence was repaired (Hysterectomy was not done). The patient had an uneventful postoperative recovery and was discharged from the hospital on 3rd postop day. Follow up ultrasound was done at frequent intervals for the next 1 month to look for any surgery related complications. Patient remained symptom free.

Discussion
Although caesarean delivery is a very common procedure, implantation of a pregnancy within a scar is a very rare occurrence. Most of the cases, that have been reported were diagnosed early in the first trimester. The most common symptom is painless vaginal bleeding that may be massive. Since there is no specific clinical sign of the

Figure 1: Trans abdominal sonography showing empty uterine cavity with a gestational sac located in anterior myometrium of lower uterine segment. The gestational sac shows a fetal pole

Figure 2: Spectral Doppler examination of the fetal pole demonstrating the presence of fetal cardiac activity

CSEP, endovaginal ultrasonography and color flow Doppler are essential for diagnosis. Sonographic criteria for the diagnosis are;

I. Empty uterus and empty cervical canal.
II. Development of the sac in the anterior wall of the isthmic portion
III. A discontinuity on the anterior wall of the uterus demonstrated on a sagittal plane of the uterus running through the amniotic sac.
IV. Absent or diminished healthy myometrium between the bladder and the sac.
V. High velocity with low impedance peritrophoblastic vascular flow clearly surrounding the sac on Doppler examination.
VI. Sonography facilitates diagnosis of location, gestational age, size and viability of an ectopic pregnancy within a uterine scar.

It can sometimes be difficult to distinguish a miscarriage in progress and a cervical ectopic pregnancy from a cervical scar pregnancy. On sonography, these differentials can be excluded by their location centered within a cervical canal with a normal thickness of the overlying anterior myometrium, rather than located in the anterior lower uterine segment with thinning of the anterior myometrium. In cervical ectopic pregnancy, gestational sac within the cervix gives an hourglass appearance to the uterus. Internal os is closed. In a miscarriage, the gestational sac will also lack color flow on a Doppler examination. There will be absent cardiac activity. Another differentiating point is the ‘sliding sign’ on ultrasound. If the gestational sac slides with gentle pressure on the cervix with the ultrasound probe, a miscarriage is often indicated. Internal os is open. Complications of CSEP include placenta previa/accreta, uterine rupture, and massive hemorrhage.

Because of the rarity of the CSEP, there are no optimal lines for therapy. CSEP management is dependent on the patient’s gestational age, the stability of the patient, the patient’s interest in retaining future fertility, and the resources and expertise of the doctor treating the patient. Treatment modalities are either medical or surgical and are sometimes combined.

Invasive measures are divided roughly into Injection of Methotrexate (MTX) into ectopic gestational sac, dilatation and curettage, and lesion excision via laparoscopy or laparotomy. A variety of complications are associated with these treatments. It risks scar dehiscence and active vaginal bleeding from ruptured uterine scar. Other medical options include systemic methotrexate injections, UAE alone, or UAE with local methotrexate. Other surgical treatments include robotic surgery with assisted vaginal repair. Regardless of whether surgical or medical treatment is chosen, the goal is to remove the gestational sac and maintain the health and also the fertility of the patient if possible.

Conclusion
Because of significant morbidity and mortality of CSEP, every effort should be made to make a precise and early
diagnosis. Ultrasonologists should follow strict imaging criteria to assess it. Early diagnosis permits the successful use of methotrexate in cervical pregnancy and yields a situation of clinical stability. No guidelines for management of CSEP are established up till now. Treatment options are dependent upon variety of factors such as the age of patient, clinical condition, gestation, and patient’s interest in retaining future fertility.

References