Original Research Paper

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Radio-Diagnosis

RADIOLOGICAL FINDINGS IN CASE OF CAESAREAN SCAR ECTOPIC PREGNANCY

Dr Tanusri Debbarma*	Senior resident, AGMC & GBP Hospital, Agartala, Tripura university *Corresponding Author
Dr Md Imran Ahmed	Post graduate trainee, AGMC & GBP Hospital, Agartala, Tripura university
Dr. Kaushik Debbarma	Medical officer, Gr-III, MD Paediatrics, IGM Hospital, Agartala, Rajasthan university

ABSTRACT Caesarean scar ectopic pregnancy (SCEP) is a rare type of ectopic pregnancy which is defined as gestational sac, villa, or placenta implanting at the scar of previous Caesarean delivery ,that is surrounded by myometrium and connective tissue. The incidence of Caesarean scar ectopic pregnancy has been increasing due to increase in number of Caesarean deliveries. Early diagnosis of is crucial to avoid maternal morbidity and mortality. Early diagnosis leads to prompt management and improves the outcome by allowing preservation of future fertility. Ultrasonography (USG) and Magnetic Resonance Imaging (MRI) has important role in the diagnosis as well as guiding in the appropriate management or intervention in cases of Caesarean scar ectopic pregnancy. We are reporting a rare case of G2P1 with previous Caesarean deliveries, diagnosed as Caesarean scar ectopic pregnancy with the help of sonography and MRI. Patient underwent laparotomy and on histopathological examination Caesarean scar pregnancy was confirmed.

KEYWORDS : Ultrasonography (USG), Caesarean scar ectopic pregnancy, Histopathologiacal examination, MRI in Scar pregnancy

INTRODUCTION:

A 31-years-old female presented to Outpatient Department of Gynaecology with chief complaint of two month amenorrhea with bleeding per vaginum on and off since 10-12 days. In obstetric history, she was G2P1 with previous one Caesarean deliveries weighing 3.2 kg & uneventful post-operative period. Her first Caesarean section was done due to oligohydronios. General physical examination was normal. On investigation, routine blood and urine investigations were normal. On admission B-HCG level was 7118 IU/L, and after 48 hours B-HCG value was 8108 IU/L, which showed less than doubling. Transabdominal & Transvaginal ultrasound revealed empty uterine cavity with clearly defined endometrium, irregular small gestational sac like structure of ten week seen in lower uterine segment anteriorly with cardiac activity. Anterior myometrium was thinned out measures approx. 0.32cm. Endometrial, Cervical canal were empty and adenexa normal. On Doppler examination, 4chamber heart and umbilical vessels & hyperechoic rim of choriodecidual reaction with excessive vascularity suggestive of caesarean scar ectopic pregnancy is noted. During 2nd visit of USG the gestational sac was seen almost near the serosal line, myometrium was very musc thinned out (Fig-1 &2). These findings were confirmed on MRI-pelvis which showed a gestational sac and fetal pole was clearly seen within the sac, it was reaching upto serosa, no defined invasion of uterine wall was seen (Fig-3 &4). Gestational sac showed isointense signal intensity on T1W and hypointense on T2W sequences. Myometrial scar was separately visualized. Pt was prepared for emergency laparotomy under Spinal Anaesthesia, Counselling and consent was taken from the patient and patient party. Adequate blood and blood products were kept. Intraoperative findings; bluish discoloration of lower segment was seen due to high vascularity. uterine and ovarian arteries ligated, Bladder was pushed down by sharp dissection. Incision given over the lower segment. POC removed. Multiple hemostatic sutures given on placental bed. Uterus closed after attaining hemostasis. Approximately intra-operative blood loss-1 lit. Post op period was uneventful. Patient was discharged on day 7. Tissue was sent for histopathological examination. Villi were implanted in the scar tissue. Myometrium thinned out to merge with fibrous scar probably of previous caesarian section. These microscopic features coupled with absence of surrounding endocervical glands confirms CSP. Patient was followed up with serum Beta human Chorionic Gonadotropin (ß-hCG) level, till B-HCG came to non-pregnant level.

DISCUSSION:

Caesarean scar ectopic pregnancy (CSP) is defined as gestational sac, villa, or placenta implanting at the scar of previous Caesarean delivery [1], which is surrounded by myometrium and connective tissue. The mechanism for implantation is believed to be migration of the embryo through either a wedge defect in the lower uterine segment or a microscopic fistula within the scar [2,3]. Implantation of a pregnancy within a Caesarean fibrous tissue scar is considered to be the rarest form of ectopic pregnancy and a lifethreatening condition with very high risk for uterine rupture and all the maternal complications related to it [4–5]. The incidence of Caesarean scar pregnancy (CSP) is 1 of 2000 pregnancies and accounts for 6% of ectopic pregnancies in women with history of Caesarean delivery [6]. Cesarean scar pregnancy (CSP) is also considered as one of the precursor of morbidly adherently placenta (MAP). Occurrence of MAP can be sonographically predicted by analyzing the crossover sign (COS)[7]. in a sagittal view of the uterus, a straight line was drawn connecting the internal cervical os and the uterine fundus through the endometrium (endometrial line) . The gestational sac was identified and its superior–inferior (S–I) diameter, perpendicular to the endometrial line, was traced. Patients were categorized according to the relationship between the endometrial line and the S–I diameter of the gestational sac into two groups: (1) COS-1, in which the gestational sac was implanted within the Cesarean scar, and at least two-thirds of the S–I diameter of the gestational sac was above the endometrial line, towards the anterior uterine wall and (2) COS-2, in which the gestational sac was implanted within the Cesarean scar, and less than two-thirds of the S–I diameter of the gestational sac was above the endometrial line. The proportion of cases with placenta percreta was significantly higher in women with COS-1 than in those with COS-2 [7]. In our case it was COS-1, so risk of MAP was also there.

In the last decade, CSP has been increasing with the increasing number of Caesarean delivery. Early recognition of this type of pregnancy is therefore critical in directing treatment, preventing maternal complications, and allowing successful preservation of the uterus [8]. The most common clinical presentation of Caesarean ectopic pregnancy is painless vaginal bleeding, abdominal pain with vaginal bleeding or many patient may remain asymptomatic and diagnosed during routine ultrasonography [9]. CSP can be misdiagnosed as threatened abortion, incomplete abortion, cervical pregnancy, malignant trophoblastic tumor [1]. The most commonly used imaging modality is transvaginal ultrasonography (TVUS) [10] however; it can't put a definitive diagnosis in all of the cases [11]. The sonographic diagnosis is made by visualizing an enlarged hysterotomy scar with an embedded mass, which may bulge beyond the anterior contour of the uterus [12,13]. There should be differentiation of Caesarean scar pregnancy from cervical pregnancy. To differentiate from a cervical pregnancy, in trans vaginal sonography no myometrium between the gestational sac and bladder must be seen, because the gestational sac grows into the anterior portion of the isthmus [14]. To determine whether a Cesarean Scar Pregnancy (CSP) has occurred, USG in the sagittal position can be used to indicate a clear uterine cavity and an

empty cervical canal [15]. With the use of transvaginal sonography and saline infusion sonography, even in nonpregnant female it is possible to assess postcaesarean section uterine wall integrity. Caesarean section scar defect is identified by the presence of fluid within the incision site or filling defect at the presumed site of the scar [16]. To further evaluate pregnancy location either at the previous scar (CSP) or within cervical cavity, Magnetic resonance imaging is used[17], it not only reveals the localization of the gestational sac and its relationship with the adjacent organs but also assesses the possibility of myometrial invasion and bladder involvement more clearly [10,11] which provides key information in determining the treatment plan [18]. Management alternatives include wedge resection of the ectopic pregnancy, local injection of 5 mEq potassium chloride into the sac, local or systemic methotrexate administration, and suction curettage [19–21]. The availability of Uterine Artery Embolization (UAE) in cases of Caesarean ectopic pregnancies has contributed to successful management without any haemorrhage [22].If the CSEP patients are diagnosed early and treated properly, the complications including severe life-threatening bleeding and hysterectomy,losing fertility function could be avoided [1].

CONCLUSION:

Ultrasound assessment of the relationship between the gestational sac of a CSEP and the endometrial line help to determine whether a CSP will progress towards MAP. Early diagnosis and prompt treatment of CSP is not only important for reduced complication, prevent maternal mortality, avoid need for extended surgery but also helpful in preserving future fertility in patients with potential benefit.

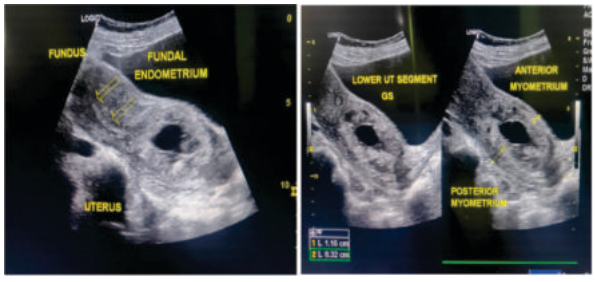


Fig1 (a &b): Transabdominal USG sagittal –empty endometrial canal, anterior and posterior myometrium, gestational sac in the lower US near the serosal line, myometrium was very much thinned out.

Fig 2: Transabdominal USG spectral shows cardiac activity (FHR-149 bpm) Color Doppler examination showing that hyperechoic rim of choriodecidual reaction and show vascularity and increased trophoblastic cell

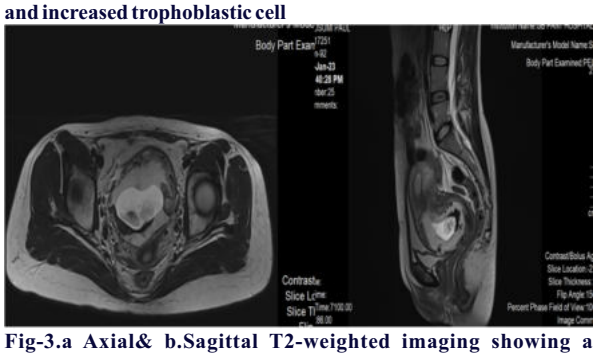
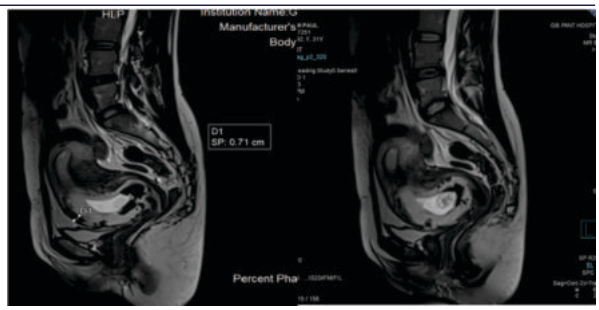


Fig-3.a Axial& b.Sagittal T2-weighted imaging showing a gestational sac implanted within the anterior myometrium of the lower uterine segment in the region of the scar of previous cesarean section. The gestational sac shows a well-formed fetal pole within and is surrounded by a well-appreciated decidual reaction. Anterior myometrium anterior to the gestational sac (orange arrow) is thinned out. Posteriorly, the gestational sac is seen extending into the endometrial cavity in the lower uterine segment. The posterior myometrium shows good wall thickness



4.a. Sagittal T2-weighted & Tirm imaging showing a gestational sac implanted within the anterior myometrium of the lower uterine segment in the region of the scar of previous cesarean section. The gestational sac shows a well-formed fetal pole within and is surrounded by a well-appreciated decidual reaction Anterior myometrium anterior to the gestational sac is thinned out. Posteriorly, the gestational sac is seen extending into the endometrial cavity in the lower uterine segment The posterior myometrium shows good wall thickness

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