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Case Study

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A CASE SERIES OF CAESAREAN SCAR PREGNANCY

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ABSTRACT

Introduction: A Caesarean Scar Pregnancy (CSP) is an ectopic pregnancy implanted in the myometrium of a previous caesarean section scar. The incidence of CSP is indeed increasing with increase in in the rate of caesarean deliveries. In 1604 Jean Riolan from Paris was the first person to report an extrauterine tubal pregnancy. **Discussion:** When the blastocyst implants into the scar tissue from a prior caesarean incision; it invades into the remaining tract from the prior uterine wall disruption, and this leads to caesarean scar pregnancy. A high suspicion should arise when a gestational sac is seen in the lower uterine segment on scan. **Conclusion:** Caesarean Scar pregnancy is a life-threatening condition which can be diagnosed in early gestational age with precise clinical suspicion and radiological expertise. Early detection and diagnosis and prompt management can prevent dreadful complications.

INTRODUCTION

A nightmare for any woman in the reproductive age group would be an ectopic pregnancy. Ectopic pregnancy is defined as implantation of the embryo outside the endometrial cavity.[1] It constitutes to approximately 2 % of all pregnancies.[2] A Caesarean Scar Pregnancy (CSP) is an ectopic pregnancy implanted in the myometrium of a previous caesarean section scar.[2] The incidence of CSP is indeed increasing with increase in in the rate of caesarean deliveries.

It is rare condition, constituting to less than 1% of all pregnancies[2] and nearly 5% of all ectopic pregnancies in women with prior caesarean sections.[3] Advancement in the field of radiology makes the identification of an ectopic pregnancy in early gestational age possible, hence avoiding various dreadful complications. Transvaginal sonography being the most feasible, cost effective, easier, and faster method to diagnose comes in handy.

The first report about an extrauterine pregnancy dates to the 10th century. However, hundreds of years later, in 1604, Jean Riolan from Paris was the first person to report an extrauterine tubal pregnancy. This first patient was in the fourth month of her eighth pregnancy and succumbed the day of onset of symptoms.[4]

CSP was first described by Larsen and Solomon in 1978.[5,6]

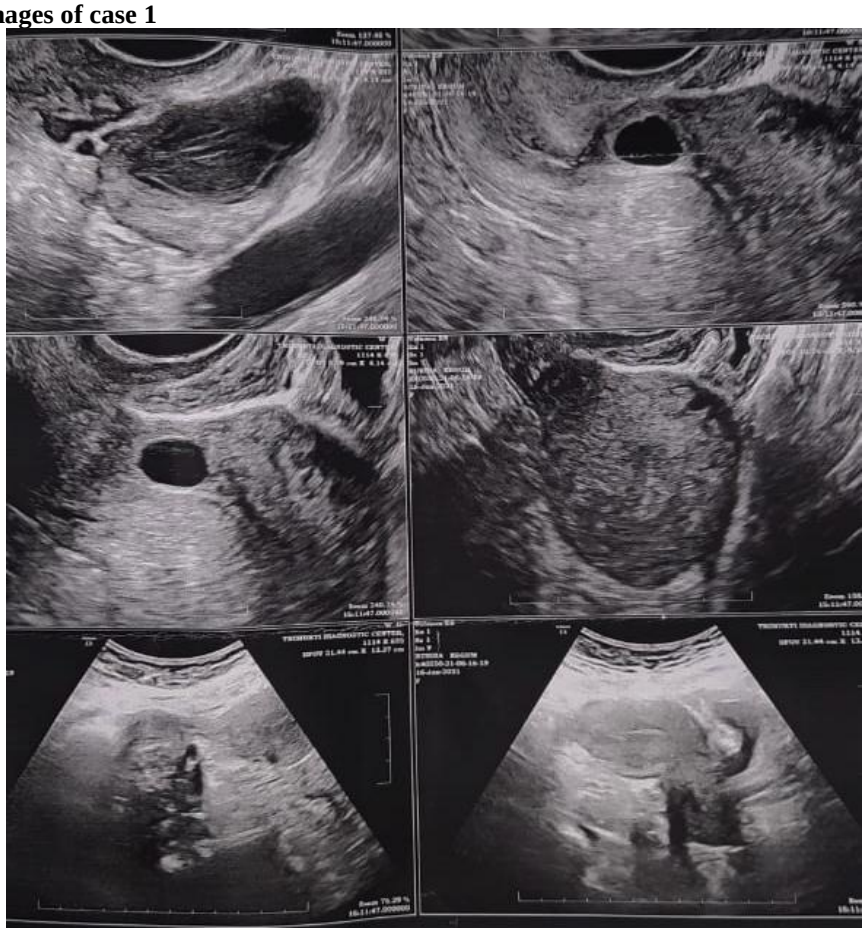
We, present 3 cases of CSP, each managed differently from one another. The main aim of the treatment was to prevent uterine rupture, avoid dangerous uterine bleeding and conserve the fertility of the woman for further conceptions.

Case 1.

A 26-year-old patient, gravida 3 para 2, with previous 2 caesarean sections presented to our outpatient department with history of amenorrhea one and a half months followed by per vaginal bleeding for 2 days. She was haemodynamically stable and her urine pregnancy test was positive. Her trans vaginal sonography (TVS) showed presence of gestational sac in the lower uterine segment near the caesarean scar suggestive of scar ectopic pregnancy, with the gestational sac corresponding to 5 weeks with a yolk sac and no foetal pole, and empty upper uterine segment The menstrual age was 6weeks and 4 days. Her ß-hcg level in blood was 29,000 milli-international units per millilitre (mIU/ml). Her vitals were stable. The patient was planned for laparoscopic management. Her other laboratory findings were normal. Hysteroscopy was performed and showed an empty uterine cavity without any inward bulge at the lower uterine segment. Laparoscopy was done, bladder was found adherent to the scar. It was carefully dissected away from the scar to a much lower level (fig. 1). A bulge was seen at the scar site (fig. 2). With a bipolar energy, the scar was incised, all the trophoblastic tissue and products of conceptus were enucleated out (fig. 3). Thorough suctioning was done. The uterine defect was closed with vicryl,

haemostasis was achieved, the patient was stable in the post-operative period.

The ultrasound images of case 1



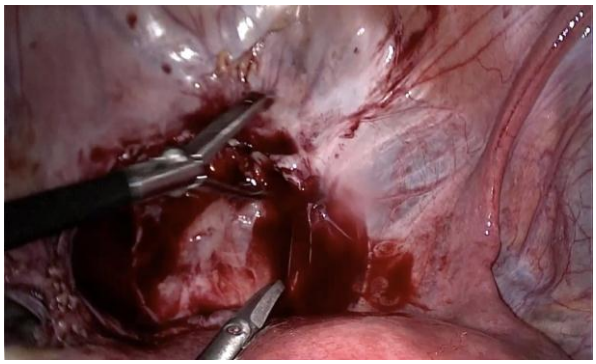


Figure i: Bladder dissection to a much lower level.

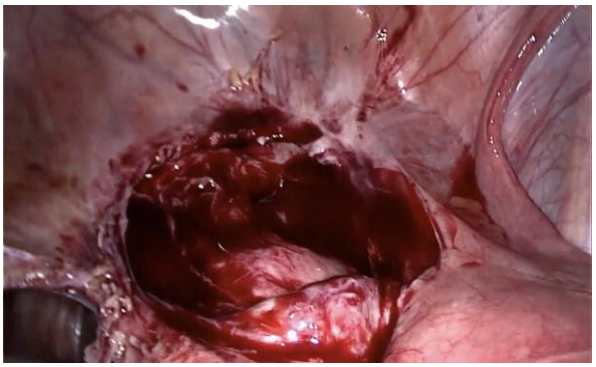


Figure i: CSP bulge at the level of CS scar.

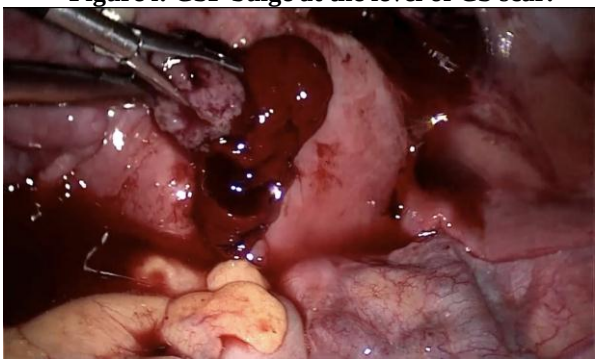
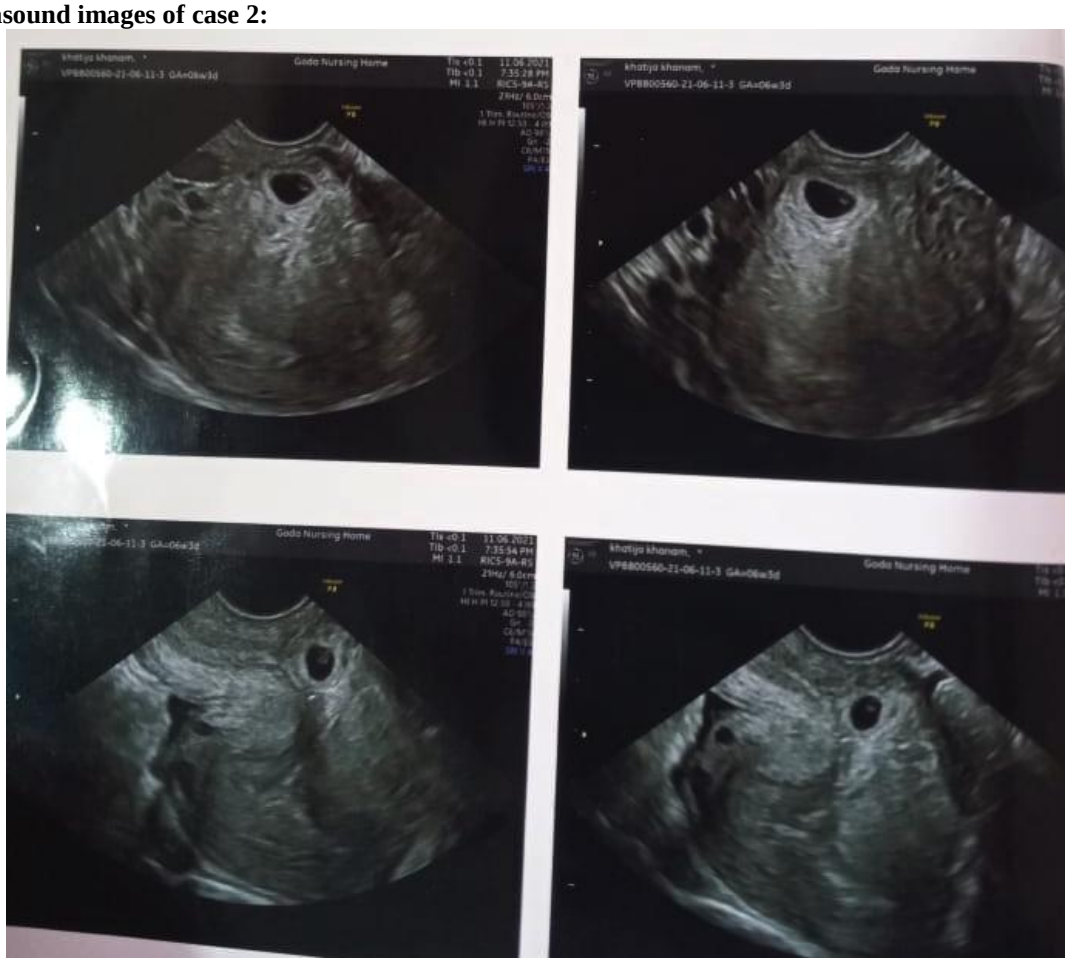


Figure ii: Trophoblastic tissue and POC coming out of the incision.

Case 2

A 23-year-old patient, with a previous caesarean section, 2 medical terminations of pregnancy (MTP) and 1 suction evacuation, came with complaints of 1 and half months of amenorrhea and per vaginal bleeding. Her transvaginal scan showed a 10mm well defined cystic lesion over the anterior uterine wall at the scar site with no yolk sac and foetal pole. ß-hcg level was 4100mIU/ml. She was planned for medical management by systemic Methotrexate therapy as her gestational age was less than 8weeks,her beta Hcg was less than 5000mIU,she was haemodynamically stable and gestational sac measured less than 2.5cm.Methotrexate 1mg/kg was given on day 1,3 and 5, along with leucovorin 0.1mg/kg on day 2,4 and 6. The patient could tolerate this well. ß-hcg level was measured it reduced to more than 15%,(2670 mIU), pt was discharged home with weekly measurements of B hcg and it took 6 weeks for it to come within the normal limits.

The ultrasound images of case 2:



Case 3

A 28-year-old patient, with complaints of pain over her lower abdomen, per vaginal bleeding and missed periods was checked for urine ß-hcg and found to be positive. Her menstrual age was 7 weeks 3 days. Her transvaginal scan showed scar ectopic pregnancy. She was posted for hysteroscopy where empty uterine cavity was found, and laparoscopy where dense adhesions over anterior uterine wall and bladder was seen. Hence, laparotomy was done, with careful and meticulous dissection of the bladder away from the scar. Resection of scar and gestational tissue was done. Uterine defect was closed with vicryl. Haemostasis was achieved. The patient was stable in the post-operative period and was discharged. The patient refused to have repeated ß-hcg follow ups.

DISCUSSION

Unrecognized ectopic pregnancy of any abnormal location remains a significant cause of pregnancy related death[7]. Caesarean scar pregnancy is a life-threatening condition with high risk of serious complications. The increase in the rate of CSP mirrors the increasing rate of caesarean deliveries.

When the blastocyst implants into the scar tissue from a prior caesarean incision; it invades into the remaining tract from the prior uterine wall disruption, and this leads to caesarean scar pregnancy.[8] As described by Rotas et al, only 37% CSPs are incidentally found on dating scan while the rest 60% present with vaginal bleeding, lower abdominal pain in cases of impending rupture or hypovolemic shock in ruptured CSPs.[9]

A high suspicion should arise when a gestational sac is seen in the lower uterine segment on scan. While evaluating a patient with positive pregnancy test, abdominal pain and per vaginal bleeding, we should always consider ectopic pregnancy, abnormally invasive placenta and spontaneous abortion. Cervical ectopic and abortion in progress are the differential diagnosis of CSP.

In a cervical ectopic pregnancy, the gestational sac is implanted in the cervix, the sac is in the endocervical canal and not embedded in the anterior lower uterine segment. Anterior myometrium will have normal thickness. In case of abortion in progress the cervical os would be open, anterior myometrium would have a normal thickness, the fetus may be seen within the cervical canal without cardiac activity. The cervical os is closed in case of CSP on pelvic examination. Hence, pelvic examination is also an important entity.

A CSP is diagnosed when the uterine cavity and cervical canal are empty, and the gestational sac is in the anterior portion of the uterine isthmus.[3] Thickness of the myometrium at the site of implantation is thin, this is measured between the gestational sac and the bladder and is abnormal when less than 8mm.[10] 2/3rd of the cases of CSP have a myometrial thickness less than 5 mm.[11]

There are two types of CSP which are differentiated by the depth of invasion. The first type (Exogenic) is implanted deeply into the scar defect, up to the serosal lining and possibly into the bladder or abdominal cavity. This is a very dangerous type as it leads to a viable pregnancy with high risk of uterine rupture and haemorrhage. The second type (Endogenic) implants into the scar but grows away from the serosal lining and towards the uterine cavity.[12]

Ultrasound criteria for diagnosis of caesarean scar ectopic pregnancy (CSP)[11]

1. Empty uterus with clearly visualised endometrium.
2. Empty cervical canal.
3. Gestational sac implanted in the lower anterior uterine segment at the site of caesarean section incision scar.
4. Thin or absent myometrium between the gestational sac and the bladder.

A practically feasible and effective, cost affordable technique to diagnose CSP is transvaginal scan (TVS). Location of the implantation, anterior myometrial thickness and bladder- uterus interface tissue can be more accurately seen on MRI.[13]

Treatment options are individualized, based on gestational age at presentation, hemodynamic status of the patient, presence or absence of uterine continuity and B hcg levels. Expectant management is never an option for CSP due to high risk of rupture and haemorrhage, almost 1/3rd requiring hysterectomy.[14]

Risk for caesarean scar implantations is not clearly correlated to the number of prior caesarean sections and has not been correlated to single versus double layer closure of uterine scar[6]. There is no link between time after caesarean section and CSP, as it was observed 6 months after caesarean section as well as after 12 years.[15]

In our cases, the case 1 was a exogenic type, hence we preferred laparoscopic management. The case 2 was endogenic type, hence we preferred the medical line of management. In both the cases we were successful. In case 3, due to dense adhesions we had to convert laparoscopy to laparotomy after consent. A prior consent of possible conversion of laparoscopy to laparotomy is always to be considered.

CONCLUSION

Caesarean Scar pregnancy is a life-threatening condition which can be diagnosed in early gestational age with precise clinical suspicion and radiological expertise. Early detection, diagnosis and prompt management can prevent complications like uterine rupture, massive haemorrhage, and maternal death, and help in saving the patient's fertility. Whatever might be the line of management, the main aim is to reduce morbidity and mortality. Laparoscopy should be performed by well experienced surgeon.

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