



Cesarean Scar Pregnancy (CSP): A Case of Partial Scar Dehiscence in Early Pregnancy

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Abstract

Cesarean Scar pregnancy (CSP) is a type of ectopic pregnancy characterized by the implantation of the gestational sac at the site of previous cesarean scar. A cesarean scar pregnancy is a complex iatrogenic pathology and life threatening condition with a high risk of uterine rupture, massive vaginal bleeding and placenta accreta spectrum. Misdiagnosis is not uncommon particularly after 7 weeks of gestation. Pregnancy needs to be terminated once diagnosis is confirmed in the first trimester to avoid serious complications, such as massive hemorrhage, uterine rupture and fatal outcomes. Approximately 14% cases of CSP were misdiagnosed as interuterine pregnancy, missed miscarriage, inevitable miscarriage or trophoblastic tumor. This case was presented multiple time with vague symptoms and misdiagnosed as intrauterine pregnancy at 11+6 weeks, hemodynamically unstable with partial scar dehiscence and intraperitoneal hemorrhage necessitating an exploratory laparotomy and massive blood transfusion.

Conclusion: The two mandatory essentials for the best clinical and administrative management of CSP are early diagnosis and prompt referral to tertiary care centers. Clinically, a high index of suspicion is necessary in patients with repeated presentations and non-specific symptoms to ensure timely diagnosis and intervention, minimizing the risk of severe morbidity or mortality.

Keywords: Cesarean Scar Pregnancy (CSP), Uterine Scar Rupture, Dehiscence, Early Pregnancy, First Trimester.

Introduction:

Uterine scar dehiscence is an infrequent but severe complication occurring during the first trimester of pregnancy with few cases documented in the literature [1]. Previous uterine surgeries including multiple cesarean sections, myomectomies, cornual pregnancy and use of misoprostol are known risk factors for uterine rupture particularly during advanced pregnancy or trial of labor after cesarean section (TOLAC). Uterine rupture can present as a partial or complete disruption of the uterine layers potentially exposing the gestational sac to the peritoneal cavity is a life-threatening condition. In case of late diagnoses it carries a high risk of maternal and fetal morbidity and mortality [2].

Background and Objectives: Cesarean Scar Pregnancy (CSP) refers to the implantation of the placenta within or adjacent to a previous cesarean scar representing a potentially life-threatening obstetric condition. The true incidence is unknown due to common misdiagnosis of cervical pregnancy and inevitable miscarriages. Around 6 % of ectopic pregnancies among women with at least one cesarean section diagnosed as CSP lead to an incidence of 1 in 2000. CSP poses a significant diagnostic challenge. It is typically diagnosed by TransVaginal Sonography / Ultrasound (TVS).

Management strategies mostly dependent on the specific case presentation and the resources available within the healthcare infrastructure [3]. The global increase in cesarean section rates has corresponded with a notable rise in CSP cases, primarily located in the lower uterine segment. Despite advancements in diagnostic ultrasound technology, CSP remains under diagnosed, specifically, when the gestational sac shifts towards the uterine cavity, as observed in this case [4,5].

A misdiagnosed CSP, or one diagnosed at an advanced gestational age, poses a significant threat to maternal life due to complications such as hemorrhage and uterine rupture, often necessitating an emergent hysterectomy with consequent irreversible loss of fertility [6]. Management of CSP is multifaceted, encompassing medical, surgical and hybrid approaches, however, optimal treatment strategies remain controversial with individualized patient care [7].

Case Presentation: A 35 years old, multiparous female, gravida 7 para 4+2, presented to the Accident and Emergency (A&E) department at 6 weeks gestation with mild abdominal pain and history of amenorrhea. The patient had a history of three regular vaginal deliveries and an elective lower segment cesarean section (LSCS) performed at 37 weeks during her last pregnancy. This intervention was performed on patients request after her refusal for induction of labour. Other clinical findings included severe polyhydramnios and fetal diagnosis of Down Syndrome with congenital cardiac malformations. The patient also had two miscarriages following lower segment cesarean section (LSCS), with the last miscarriage diagnosed as a molar pregnancy followed by evacuation of products of conception.

An initial bedside Trans abdominal Ultrasound at 6 weeks gestation revealed a small uterine sac with a yolk sac and a gestational sac measuring 0.6 cm in diameter. The patient was discharged with advice to follow up at the Early Pregnancy Assessment Unit (EPAU), however, she missed her follow-up appointments and again presented at 8+3 weeks gestation with non-obstetric complaints.

A repeat bedside scan confirmed fetal viability and patient was discharged, however, confirmatory ultrasound was not done by consultant radiologist. Her third presentation to Accident and Emergency department (A&E) was at 11+2 weeks with abdominal pain and irregular brownish vaginal discharge. The patient was again discharged after confirming fetal viability. Four days later (11+6 weeks), the patient presented at midnight to Accident and Emergency department (A&E) with severe abdominal pain, vaginal bleeding and a history of fainting. On examination, she was pale, hypotensive (BP 90/67 mmHg), tachycardic (pulse 92 bpm) and reported a sudden sharp pain in the lower abdomen. Intravenous fluids and oxygen were administered immediately. A bedside ultrasound confirmed fetal viability with no free fluid in the pelvis, however, the patient's condition deteriorated rapidly, necessitating an exploratory laparotomy. Meanwhile repeat ultrasound was done by radiologist revealing large volume of turbid fluid in abdomen and pelvis, with viable fetus corresponding to 11+6 weeks.

Intraoperatively, approximately 2 liters of blood and clots were found in the abdomen. A dehiscence measuring 1 cm was identified at the left angle of the previous uterine scar, with placental tissue protruding through the defect near the uterine vessels and adherent bladder. Hemorrhage was controlled using hemostatic sutures and the patient was transferred to a tertiary care facility. The patient underwent blood transfusion both intraoperatively and post operative including 6 units of packed red blood cells, 4 units of fresh frozen plasma (FFP) and 2 units of cryoprecipitate.

Despite initial stabilization, the patient required a repeat laparotomy after confirmation of a missed miscarriage. Intraoperatively, a massive hemorrhage of more than 3 liters occurred, necessitating the removal of the placenta and fetus following massive blood transfusion. A Bakri balloon was used to achieve hemostasis and consequently, the bladder that had sustained injury during dissection was repaired. Postoperatively, the patient developed mild consumption coagulopathy and pleural effusion that were managed conservatively. Three months later, she underwent laparoscopic bilateral salpingectomy to mitigate the risk of recurrent CSP and associated complications.

Figure 1.

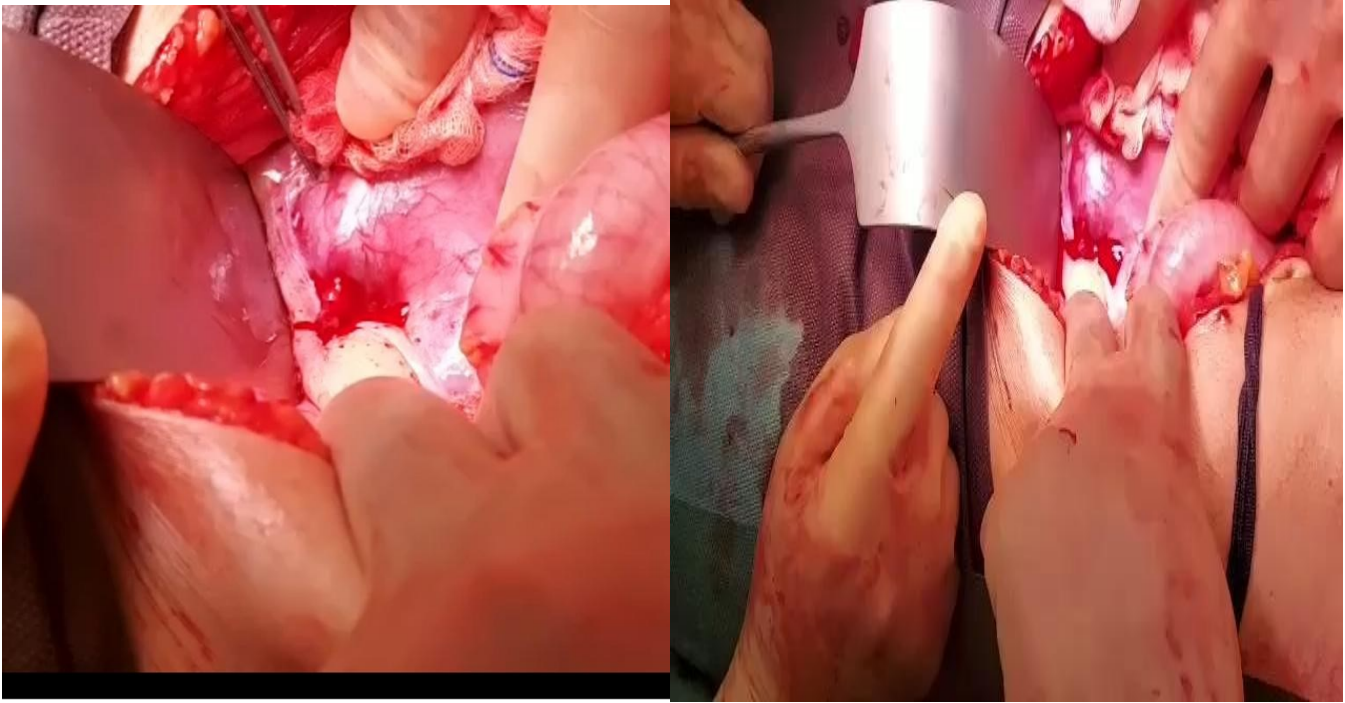
Pelvis Ultrasound Confirming the Viability and Free Peritoneal Fluid.



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Figure 2. Surgical Intervention



Discussion: The first documented case of CSP was reported by Larsen et al. in 1978, involving delayed diagnosis with severe hemorrhage. CSP is currently categorized into two types: Type 1 (endogenic), where the gestational sac grows toward the uterine cavity or cervico-isthmic space, and Type 2 (exogenic), characterized by deep invasion of the scar with growth toward the urinary bladder and abdominal cavity. Type-1, CSP may permit viable birth but carries a high risk of hemorrhage, while Type-2 CSP, is more prone to rupture and hemorrhage in the first trimester [8].

Uterine rupture during early pregnancy is extremely rare and typically occurs in patients with multiple cesarean sections, use of Misoprostol for management of miscarriage and short interpregnancy intervals [9]. Misdiagnosis or improper management of CSP can lead to the development of placenta accreta spectrum disorders or life-threatening hemorrhage at any gestation [10]. CSP is generally diagnosed by ultrasound between 6 and 8 weeks gestation. Misdiagnosis is common, particularly, if the gestational sac shifts toward the uterine cavity as occurred in this case. The patient had only one prior cesarean section and her interpregnancy interval was three (3) years.

Management strategies are influenced by gestational age, clinical presentation, and available expertise. Treatment options range from conservative medical management to surgical interventions including hysterectomy [11]. The most suitable treatment modality for type-1 CSP is dilatation and curettage or hysteroscopy with or without pre-treatment with Methotrexate or Uterine Artery Embolization to reduce risk of severe hemorrhage in selective cases. There is uncertainty regarding the treatment of CSP type-2, because the thin lower segment of the uterus that cannot be corrected by dilatation and curettage however, need a repair, therefore, hysteroscopy and laparoscopy can be done at the same time [12]. The patient's repeated presentations with vague symptoms and delayed diagnosis consequently resulted into significant complications, including massive hemorrhage and bladder injury. Imaging plays a crucial role in diagnosing CSP and guiding management decisions. In settings where ultrasound expertise is limited, surgical intervention may be required to promptly identify and treat the condition such as removal of pregnancy.

While managing this case of CSP, prompt referral to tertiary care had preferred to control massive hemorrhage on account of non -availability of large volumes of blood units and further availability of multidisciplinary team and integrated care services.

Conclusion: The two mandatory essentials for the best clinical and administrative management of CSP are early diagnosis and prompt referral to tertiary care centers. Clinically, a high index of suspicion is necessary in patients with repeated presentations and non-specific symptoms to ensure timely diagnosis and intervention, minimizing the risk of severe morbidity or mortality.

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