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# Cesarean Scar Pregnancy- A Management Dilemma

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**Abstract**

Cesarean Scar pregnancy is one of the rarest forms of ectopic pregnancy. It is defined as implantation into the myometrial defect occurring at the site of the previous uterine incision during cesarean section. Scar ectopic pregnancy has also been reported following hysterotomy, myomectomy, uterine evacuation, previous abnormally adherent placenta, manual removal of placenta, metroplasty, hysteroscopy and in vitro fertilization. Scar pregnancy should be diagnosed as early as possible with the help of transvaginal ultrasonography in order to avoid severe complications like uterine rupture and massive hemorrhage. There are two main modalities of management, medical and surgical. Treatment should be individualized according to many factors including clinical presentation of the case, β-hCG levels, imaging features, and the surgical skill of operating surgeon. Here we are reporting a case of G3P1L1A1 with previous one cesarean delivery, diagnosed as cesarean scar ectopic pregnancy with the help of sonography. Patient underwent hystero-laparoscopy and on histopathological examination cesarean scar pregnancy was confirmed.

**Keywords:** Cesarean scar pregnancy, ectopic pregnancy, scars ectopic pregnancy, hysteroscopy, laparoscopy.

## Introduction

Cesarean Scar pregnancy (CSP) is one of the rarest forms of ectopic pregnancy. First case was reported way back in 1978. The prevalence is estimated to be approximately 1 in 2000 pregnancies[1].It accounts for 6% of ectopic pregnancies among women with a prior caesarean delivery[2]. The incidence has increased due to increase in number of caesarean deliveries. Globally, the incidence of primary cesarean averages 18.6% of all births[3].

Scar ectopic pregnancy is defined as implantation into the myometrial defect occurring at the site of the previous uterine incision. Two different types of scar ectopic pregnancy are identified. Type I is caused by implantation in the prior scar with progression towards the cervico-isthmic space or the uterine cavity. Type II is caused by deep implantation into scar defect with infiltrating growth into the uterine myometrium and to uterine serosal surface which may result into uterine rupture and massive haemorrhage in first trimester of pregnancy which is most dangerous[4]. It has been

reported following cesarean section, hysterotomy, myomectomy, uterine evacuation, previous abnormally adherent placenta, manual removal of placenta, metroplasty, hysteroscopy and in vitro fertilization[4].

Symptoms include pelvic pain and vaginal bleeding in the first trimester. Many women are asymptomatic at diagnosis. The investigation of choice is transvaginal ultrasound (TVUS), which may be combined with transabdominal scan for panoramic view. In equivocal cases, magnetic resonance imaging (MRI) will confirm or refute the diagnosis[3].

Treatment modalities depend on the case presentation. This case report aims to expose the difficult situation that clinicians might face during diagnosis and management of Scar ectopic pregnancy.

**Case Report**

A 30 years old female married since 5 years presented to casualty of Gynecology with chief complaints of amenorrhea since one and half month with bleeding per vaginum on and off since 2 days. No history of abdominal pain. In Obstetric history, she was G3P1L1A1 with previous one caesarean section 4 years back. Her first caesarean section was done in view of fetal growth restriction with oligohydraminos. She had one second trimester medical termination of pregnancy for anomalous baby. General physical examination was normal. On per speculum examination cervix was hypertrophied, congested, vagina healthy, blood stained discharge seen. On bimanual examination, uterus was bulky, anteverted, soft, mobile and bilateral fornices were free with no tenderness. On investigation, routine blood and urine investigations were normal. β-HCG value on admission was 26,987.50 mIU/ml. Transvaginal ultrasound revealed empty uterine cavity with clearly defined endometrium, well defined gestational sac of 6 weeks seen in lower uterine segment anteriorly at the previous LSCS scar site. It was seen reaching up to the outer uterine wall with thinned out intervening myometrium <2 mm. Cardiac activities was present. Cervical canal empty and adnexa clear. On Doppler examination, hyperechoic rim of chorio-decidual reaction with excessive vascularity suggestive of caesarean scar ectopic pregnancy.

Patient was posted for Hystero-Laparoscopy. On Hysteroscopy, cervix was normal with normal endocervical lining. Sac like structure was seen at the scar of previous LSCS with floating chorionic villi and products of conception inside the internal os. Uterine cavity was normal, bilateral tubal ostia seen- appeared patent and endometrium was congested.

On laparoscopy, uterus was bulky, anteverted with the urinary bladder densely adherent to the entire anterior uterine wall right upto the fundus. Both tubes appeared normal. Both ovaries were normal. No evidence of any blood or free fluid in Pouch of Douglas. Injection vasopressin 20IU injected in the area of adhesions. Left lateral space dissected and entered. Adhesions separated by sharp dissection to separate the bladder and push it down. Adequate area of adhesions released to expose the area upto cervix anteriorly. Then hyteroscopically the entire sac, products of conception removed under vision with biopsy forceps. Anterior uterine wall looked intact. Endometrial cavity curetted gently. Confirmation done laparoscopically regarding intact anterior wall. Hemostasis achieved. Specimen of products of conception and endometrial curettings sent for histopathalogical examination and diagnosis was confirmed. One unit of packed red cell transfused post-operatively. Patient was followed up with serum Beta Human Chorionic Gonadotropin (β-Hcg) level. It was

2824 mIU/ml 48 hours after surgery and 182mIU/ml 8 days after surgery. Patient did not follow up after that.

**Discussion**

Ectopic pregnancy is the leading cause of morbidity and mortality in fertile women and is related to 4% of Pregnancy-associated deaths[5].

In 2012, Shen et al.[6], in their series of 45 patients with CSP, in which 42 women (93.3 %) had undergone only one caesarean section, concluded that multiple caesarean sections may not increase the risk of this condition.

Most of the cases are asymptomatic. Few can present with light vaginal bleeding or mild abdominal pain[7]. Uterine tenderness may be elicited if the ectopic is in process of rupture[2].

Scar pregnancy should be diagnosed as early as possible in order to avoid severe complications. Most of the cases that have been reported were diagnosed early in the first trimester[2]. All women with a positive pregnancy test and a prior cesarean delivery should undergo an early transvaginal sonographic assessment during the first trimester[8]. The differential diagnosis of CSP includes cervical pregnancy and an aborting intrauterine pregnancy.

The diagnostic criteria described for diagnosing cesarean scar implantation on TVS include[9]:

1. Empty uterine cavity
2. Gestational sac or solid mass of trophoblast located anteriorly at the level of the internal os embedded at the site of the previous lower uterine segment cesarean section scar.
3. Thin or absent layer of myometrium between the gestational sac and the bladder
4. Evidence of prominent trophoblastic/placental circulation on Doppler examination.
5. Empty endocervical canal.

Jurkovic has described a negative “sliding organ sign” as diagnostic of scar ectopic — the inability to displace the gestational sac from its position at the level of the internal os by gentle pressure applied by the transabdominal probe[2,10]. Magnetic resonance imaging (MRI) could be helpful when transvaginal ultrasound combined with power doppler sonography is inconclusive[1,11].

The main objectives in the management of CSP are to preserve fertility and avoid life threatening complications like massive hemorrhage and uterine rupture. Treatment options include expectant management, medical management, local treatment and surgical approach.

Although expectant management has been reported[12], a successful outcome with no complications is unlikely. There are risks of placenta accreta, uterine rupture, and massive hemorrhage, usually resulting in hysterectomy[8]. Rotas et al. reviewed 112 cases and reported that expectant management of 6 patients resulted in uterine rupture and 3 of them required hysterectomy[1].

There are two main modalities of management, medical and surgical. Asymptomatic, hemodynamically stable, unruptured pregnancy of gestational age <8 weeks are candidates for methotrexate[5]. It can be given as intra-sac injection, systemic or intramuscular, or a combination of both. For systemic use both single-dose and multi-dose protocols have been used. The standard single-dose regimen for methotrexate (MTX) is 50 mg/m$^2$, whereas the multidose protocol includes four doses 1 mg/kg given on Days 1, 3, 5, and 7 with alternating days of folinic acid 0.1 mg/kg[7].

It had been reported that when serum β-HCG levels were <5000 mIU/ml and myometrium thickness was <2 mm, then systemic methotrexate was successful. It had success rate of 71–80 % with only 6 % requiring hysterectomy[4]. Close follow-up is required and may need to be combined with surgical approaches either electively or emergently if heavy bleeding starts.

Surgical management options include hysteroscopic suction evacuation and curettage, laparoscopic or open removal of scar along with pregnancy and hemostatic measures including double balloon catheter for tamponade and uterine artery embolization[5].

Uterine curettage as first-line management is discouraged as it may ensue bleeding and uterine rupture or may fail to reach the product of conception[5]. However, it can be employed in combination with hysteroscopy under direct visualization and particularly after successful medical management. Suction curettage combined with MTX is associated with similar success rates compared with MTX treatment alone[13]. Curettage was performed when the serum β-hCG level was < 50 IU/L and ultrasound revealed the absence of blood flow velocity. Ozdamar et al. recommended curettage only when the myometrial thickness surrounding the gestational sac was 3.5 mm away from the bladder[14].

If anterior myometrial thickness was < 3 mm on ultrasound, laparoscopy was performed prior to hysteroscopy to dissect bladder peritoneum from the lower uterine segment to attempt to remove the bladder from the site of surgical management and decrease risk of injury[15]. Similar procedure was done in our case. First dissection was done laparoscopically to expose the uterus along with the cervix, diluted solution of injection vasopressin was infiltrated in the myometrium overlying the gestation and then products of conception were evacuated under hysteroscopic guidance by ovum forceps and gentle curettage was done. Further intactness of uterine wall was checked by laparoscopy. Thus combined approach gives best result avoiding complications like hemorrhage and uterine rupture.

Hysteroscopy could be performed as the primary treatment, especially for type I cesarean scar pregnancy, as well as for follow-up. It is associated with fast recovery, short follow-up, a rapid decline of β-hCG to normal values, and normal morphology of the uterine cavity[8].

Laparoscopic removal of CSP is applicable when the ectopic gestation is growing towards the bladder and abdominal cavity (type II CSP). The gestation is removed by excising the uterine wall (wedge resection). The incision is then repaired. If needed, bilateral uterine artery occlusion can be done. Laparoscopic excision of CSP up to11 weeks gestation has been reported[8, 16]. The main advantage of the laparoscopic approach is complete removal of the products of conception at the time of the surgery, reducing the follow-up time.

**Conclusion**

Every pregnant woman with history of a cesarean delivery should be screened early in the first trimester of pregnancy to rule out this life-threatening condition so that severe complications can be tackled early. Treatment should be individualized according to many factors including clinical presentation of the case, β-hCG levels, imaging features, and the surgical skill of operating surgeon.

**References**

1. Rotas MA, Haberman S LM. Cesarean scar ectopic pregnancies: etiology, diagnosis and management. Obs Gynecol. 2006;107:1373–81.
2. Gumdal S, Lakavath RD. Case Report A rare case

report of scar ectopic pregnancy. 2021;270–2.

3. Rumbidzai Majangara, Mugove Gerald Madziyire CV& MM. Cesarean section scar ectopic pregnancy-a management conundrum: a case report. J Med case reports 13.
4. Patel MA. Scar Ectopic Pregnancy. J Obstet Gynecol India [Internet]. 2015;65(6):372–5. Available from: "http://dx.doi.org/10.1007/s13224-015-0817-3
5. Jameel K, Mannan GA, Niaz R, Hayat D. Cesarean Scar Ectopic Pregnancy : A Diagnostic and Management Challenge. 2021;13(4).
6. Shen L, Tan A, Zhu H et al. Bilateral uterine artery chemoembolization with methotrexate for cesarean scar pregnancy. AJOG.
7. Cunningham F, Leveno KJ, Bloom SL et al. . Implantation and placental development. Williams Obstet 25e McGraw Hill Educ New York, NY; 2018 80-123.
8. Gonzalez N, Tulandi T. Cesarean Scar Pregnancy : A Systematic Review. J Minim Invasive Gynecol [Internet]. 24(5):731–8. Available from: http://dx.doi.org/10.1016/j.jmig.2017.02.020
9. Diagnosis and Management of ectopic pregnancy: green-top guideline no.21. BJOG. 123(13):e15–55.
10. Jurkovic D, Hillaby K, Woelfer B, Lawrence A, Salim R EC. Firsttrimester diagnosis and management of pregnancies implanted into the lower uterine segment Cesarean section scar. Ultrasound Obs Gynecol.
11. Cunha-Filho EV, Henz C, Burmann L, Bona SW SJ, Cesarean MM. Magnetic resonance imaging in the diagnosis of a section scar ectopic pregnancy: a case report. Ultrasound Obs Gynecol.
12. Vial Y, Petignat P HP. Pregnancy in a cesarean scar. Ultrasound Obs Gynecol. 200AD;16:592–3.
13. Wang JH, Xu KH, Lin J, Xu JY WR. Methotrexate therapy for cesarean section scar pregnancy with and without suction curettage. Fertil steril. 2009(92):1208–13.
14. Ozdamar O, Doger E, Arlier S et al. Exogenous cesarean scar pregnancies managed by suction curettage alone or in combination with other therapeutic procedures: a series of 33 cases and analysis of complication profile. J Obs Gynaecol Res. 2016;42:927–35.
15. Xiao Z, Cheng D, Chen J, Yang J, Xu W XQ. The effects of methotrexate and uterine arterial embolization in patients with cesarean scar pregnancy: a retrospective case-control study. Med. 2019;98:e14913.
16. Fuchs N, Manoucheri E, Verbaan M EJ. Laparoscopic management of extrauterine pregnancy in cesarean section scar: description of a surgical technique and review of the literature. BJOG. 2015;122(137-140).