



Cesarean Scar Ectopic Pregnancy

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ABSTRACT

Although rare, Cesarean scar ectopic pregnancy poses a significant threat of uterine rupture and excessive maternal bleeding. Ultrasound confirmed a cesarean scar ectopic pregnancy with absence of fetal cardiac activity, and a perisac bleed concomitant with a β -hCG level of 15,000 mIU/ml. Maternal history includes G3P1+1 Alive 1 with previous 1 cesarean section and 1 early miscarriage followed by DNC and now 9 weeks POG with lower abdominal pain and mild per vaginal bleed. During an elective laparotomy, a 4x5cm scar ectopic mass was excised and a 3cm uterine rent was repaired. Her post-operative course was unremarkable with sustained drop in beta HCG levels and follow up examinations showed complete recovery along with beta HCG levels of non pregnant state. Early diagnosis and intervention plays a pivotal role in avoiding CSEP related morbidity and mortality. It is also vital for the preservation of a woman's future fertility and reproductive capability.

INTRODUCTION

A pregnancy that develops outside of the uterus is known as an ectopic pregnancy. It usually happens in the fallopian tube, with the ampullary region being the most frequent location. [1]. The cervix, ovary, abdomen, and myometrium are among the uncommon locations outside of the fallopian tube where ectopic pregnancy can happen [2]. An uncommon type of ectopic pregnancy known as "cesarean scar ectopic pregnancy" occurs when the gestational sac implants inside the fibrous tissue of a scar from a prior cesarean section. 3. Although it can present in a variety of ways, the most typical indication of an ectopic pregnancy is vaginal bleeding in the early stages of pregnancy [4]. Cesarean delivery rates have increased from 20.7% in 1996 to 32.1% in 2021, with some countries reaching 50%, and the incidence of CSEP is rising steadily with these rates. [5]. Prior ectopic pregnancies, chlamydia infections, infertility, adnexal surgery, appendectomy, IUD use, and failure of different forms of contraception are among the risk factors for ectopic pregnancy. [6]. Improper implantation and abnormal placental invasion are predisposed to when the endometrium and myometrium are disrupted following cesarean delivery

[7]. Uterine rupture with severe maternal haemorrhage and death can occur from untreated cesarean scar ectopic pregnancies. [3].

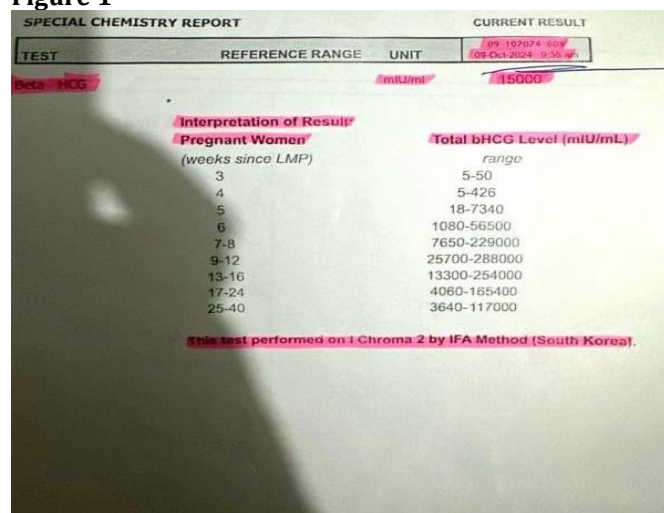
In this case study, a patient from Waziristan, KPK, Pakistan, who had previously had a caesarean delivery, presented with vaginal bleeding and abdominal pain in the first trimester. The patient was later diagnosed with a cesarean scar ectopic pregnancy. We have discussed here the clinical presentation, diagnostic challenges, and surgical management carried out by laparotomy in order to ensure timely intervention and prevent catastrophic complications. Here we emphasize more on the importance to keep a high index of suspicion in patients who have previously undergone a caesarean section.

CASE SUMMARY

30 years old female patient, a housewife resident of Waziristan KPK Pakistan, who was G3P1+1 with history of previous 1 cesarean section 4 years back, having 1 alive male child of 4 years followed by an early miscarriage 1 year back followed by DNC and now 9 weeks pregnant and complaining of lower abdominal pain with per vaginal mild bleed from past 15 days. On examination she was

vitality stable. On per abdomen examination a scar was seen and a tender unilateral cystic soft swelling was seen on right side of the scar and on per vaginal examination mild bleed was observed with no cervical tenderness. Baseline investigations were carried out and serum beta HCG came out to be 15000 mIU/ml [FIG 1].

Figure 1



Serum β -hCG report of the patient (dated 09-Oct-2024) showing a level of 15,000 mIU/mL. According to the reference ranges provided for pregnant women, this value corresponds approximately to 6–7 weeks of gestation (expected range: 1,080–56,500 mIU/mL).

On Ultrasound abdomen cesarean scar ectopic pregnancy was confirmed showing an embryo of 8 weeks and 5 days POG with no detectable cardiac activity along with perisac bleed. [FIG 2].

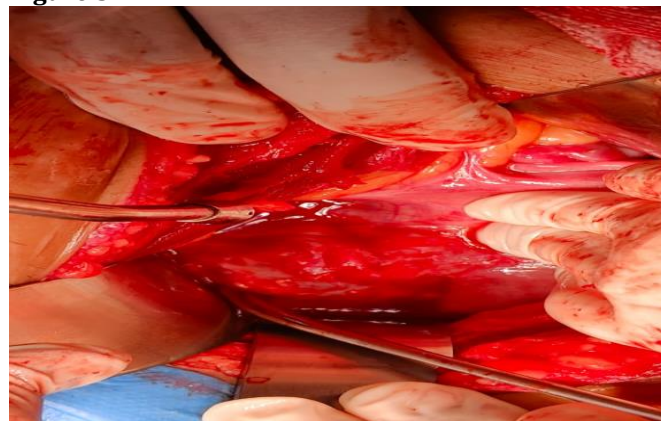
Figure 2



Pre-operative transabdominal ultrasound scan showing a well-defined gestational sac implanted in the lower uterine segment at the site of previous cesarean section scar. This sac is surrounded by a thin myometrium and with no intrauterine pregnancy seen in the endometrial cavity—features consistent with cesarean scar pregnancy (CSP).

Elective Laprotomy was planned under general Anesthesia. During laprotomy 4*5cm ectopic mass was found in the scar with dense adhesions excised and gentle scooping was also done. [FIG 3]

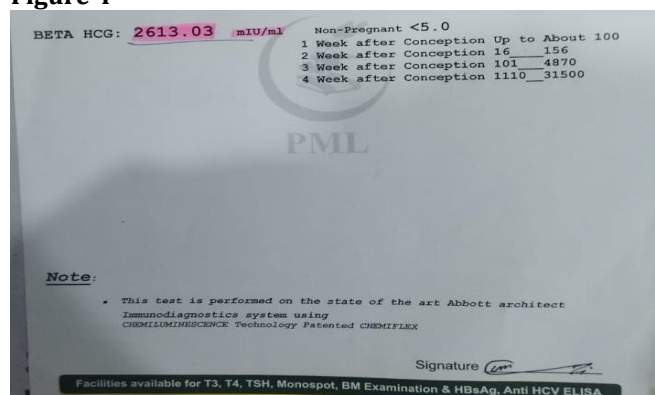
Figure 3



Intraoperative image during laparotomy showing a 4 × 5 cm ectopic mass located in the previous cesarean section scar with dense adhesions.

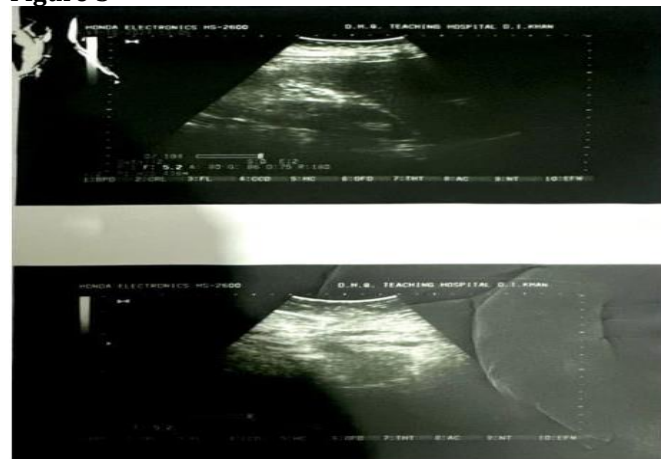
A 4 cm rent was also observed in the anterior lower segment of uterus which was repaired with vicryl 1 suture. Both the ovaries and Fallopian tubes were seen normal. Postoperatively there was a sustained decrease in beta HCG PIC and ultrasound abdomen/pelvis done on 2nd post-operative showed satisfactory findings [FIG 4, 5].

Figure 4



Postoperative serum β -hCG level measured on 14-Oct-2024 showing a sustained decrease to 2613.03 mIU/mL, consistent with regression following surgical excision of cesarean scar ectopic pregnancy.

Figure 5



Postoperative transabdominal ultrasound confirms successful management, which show a thin but intact myometrial scar measuring 3.2 mm with an absence of residual trophoblastic tissue or significant vascularity.

She was discharged on oral antibiotics with proper contraception counselling and called for follow up. On her follow up her Beta HCG levels were decreased to non pregnant state and her scar healed and she was allowed to resume her daily routine normal activities.

DISCUSSION

Cesarean scar ectopic pregnancy (CSEP) is a rare, though potentially life-threatening, type of ectopic implantation for which global incidence is on the rise due to concurrent increases in rates of cesarean delivery [8]. This case describes the management and successful outcome of a 30-year-old female with a 9-week gestation diagnosed by ultrasonography and treated by laparotomy. The instrumental influence of early diagnosis and surgery performed in a timely manner to avoid serious complications, including uterine rupture, hemorrhage, or even maternal death was demonstrated in our patient [1,2]. The importance of diagnosis is clearly evident; potentially untreatable consequences of untreated cases include uterine rupture, hemorrhage, placenta accreta spectrum, and even hysterectomy [5].

Ultrasonography is the primary investigative modality in all symptomatic women in the first trimester and serum β -HCG assay is utilized to assist with diagnosis when diagnostic ultrasound is inconclusive [9]. The trans-abdominal ultrasound of this patient confirmed the implantation of the gestational sac in the myometrial wall in the depth of the previous cesarean scar. The β -HCG was also abnormal and raised in the same time-frame, suggesting the diagnosis of CSEP had been achieved.

Two types of CSEP were previously classified: an endogenous type, that grows toward the uterine cavity and an exogenous type, which grows outward toward the serosa or bladder, which is associated with a higher risk of rupture [10]. In our patient, the pregnancy was embedded at the scar site, with a non-viable embryo, corresponding with 8 weeks and 5 days, consistent with the exogenous type of CSEP found in the literature.

Management of CSEP depends on gestational age at the time of treatment, viability of the embryo, hemodynamic

stability, and wishes for subsequent fertility. Management options have been listed and included the administration of systemic or local methotrexate, uterine artery embolization, hysteroscopic resection, laparoscopic excision, and open laparotomy [11]. In our patient case, we opted for laparotomy as the ectopic mass was large, there were dense adhesions, and the embryo was already non-viable, thus allowing for successful removal of ectopic tissues, closure of the uterine wall defect, and possible subsequent rounded fertility.

Resolution of CSEP may be identified by down trending β -HCG levels post-treatment. In our case, β -HCG levels were already noted to trending down by the second post-operative day, potentially indicating good recovery and treatment success. [12]

Individualized management is the best approach for women who wish to achieve future fertility after treatment for cesarean scar ectopic pregnancy. Conservative management options, including systemic or local methotrexate and minimally invasive methods like hysteroscopic or laparoscopic excision, have been, reported especially for early, non-viable pregnancies with small sac size [13]. Systemic methotrexate can be used as first line therapy if β -hCG level $\leq 12,000$ mIU/ml and there is no fetal cardiac activity [14]. While medical treatment may lead to resolution of the ectopic pregnancy, it may leave the cesarean scar defect unrepaired exposing patients for potential complications with future pregnancies [15]. Patients should be counseled about fertility outcomes since almost 30% of these patients may have difficulty conceiving after management of ectopic pregnancy [16]. In addition, outcome data which highlights a longer-term consideration for subsequent pregnancies following ectopic gestation, indicates that women with ectopic pregnancies have a 10% recurrence risk, and the risk of adverse outcomes in future intrauterine pregnancies is increased for certain outcomes, including a 1.27-fold increased risk of preterm birth, a 1.20-fold increased risk of low birth weight, and higher risk of placental abruption (1.21-fold) and placenta previa (1.45-fold). [17].

REFERENCES

- Sharma SS, Gokhale AV, Agarwal S, Modi D, Gedia K. Review of ectopic pregnancy at tertiary care center: 2 years analysis. *International Journal of Reproduction, Contraception, Obstetrics and Gynecology*. 2020 Oct 1;9(10):4036-40. <http://dx.doi.org/10.18203/2320-1770.ijrcog20204283>
- Dialani V, Levine D. Ectopic pregnancy: a review. *Ultrasound quarterly*. 2004 Sep 1;20(3):105-17.
- Pérez ER, Colomo CÁ, Escudero VP, Díaz-Heredero ÁS, Del Nogal LC, Nieto MI, Martínez SC, Pascual JB, de la Fuente MS, Sendagorta MC. Cesarean Scar Pregnancy: Three Case Reports and Literature Review. *European Journal of Obstetrics & Gynecology and Reproductive Biology*: X. 2025 May 29:100407. <https://doi.org/10.1016/j.eurox.2025.100407>
- Wong CM, Ganesh R, Ng KY. Ectopic pregnancy: uncommon presentations and difficulty in diagnosis. *The Medical Journal of Malaysia*. 1999 Mar 1;54(1):117-9.
- Lin R, DiCenzo N, Rosen T. Cesarean scar ectopic pregnancy: nuances in diagnosis and treatment. *Fertility and sterility*. 2023 Sep 1;120(3):563-72. <https://doi.org/10.1016/j.fertnstert.2023.07.018>
- Li C, Zhao WH, Zhu Q, Cao SJ, Ping H, Xi X, Qin GJ, Yan MX, Zhang D, Qiu J, Zhang J. Risk factors for ectopic pregnancy: a multi-center case-control study. *BMC pregnancy and childbirth*. 2015 Aug 22;15(1):187. <https://doi.org/10.1186/s12884-015-0613-1>
- Jauniaux E, Burton GJ. Pathophysiology of placenta accreta spectrum disorders: a review of current findings. *Clinical obstetrics and gynecology*. 2018 Dec 1;61(4):743-54. <http://dx.doi.org/10.1097/GRE.0000000000000392>
- Jungkman O, Anderson J. Importance of early detection of cesarean scar ectopic pregnancy. *Journal of Diagnostic Medical Sonography*. 2015 Sep;31(5):318-21. <https://doi.org/10.1177/8756479315597707>
- Murray H, Baakdah H, Bardell T, Tulandi T. Diagnosis and treatment of ectopic pregnancy. *Cmaj*. 2005 Oct 11;173(8):905-12. <https://doi.org/10.1503/cmaj.050222>
- Gonzalez N, Tulandi T. Cesarean scar pregnancy: a systematic review. *Journal of minimally invasive gynecology*. 2017 Jul 1;24(5):731-8.

- <https://doi.org/10.1016/j.jmig.2017.02.020>
11. Glenn TL, Bembry J, Findley AD, Yaklic JL, Bhagavath B, Gagneux P, Lindheim SR. Cesarean scar ectopic pregnancy: current management strategies. *Obstetrical & gynecological survey*. 2018 May 1;73(5):293-302.
<https://doi.org/10.1097/OGX.0000000000000561>
 12. Adoni A, Milwidsky A, Hurwitz A, Palti Z. Declining beta-HCG levels: an indicator for expectant approach in ectopic pregnancy. *International Journal of Fertility*. 1986 Mar 1;31(1):40-2.
 13. De Bennetot M, Rabischong B, Aublet-Cuvelier B, Belard F, Fernandez H, Bouyer J, Canis M, Pouly JL. Fertility after tubal ectopic pregnancy: results of a population-based study. *Fertility and sterility*. 2012 Nov 1;98(5):1271-6.
<https://doi.org/10.1016/j.fertnstert.2012.06.041>
 14. Bodur S, Özdamar Ö, Kılıç S, Gün I. The efficacy of the systemic methotrexate treatment in caesarean scar ectopic pregnancy: a quantitative review of English literature. *Journal of Obstetrics and Gynaecology*. 2015 Apr 3;35(3):290-6.
<https://doi.org/10.3109/01443615.2014.954101>
 15. Maheux-Lacroix S, Li F, Bujold E, Nesbitt-Hawes E, Deans R, Abbott J. Cesarean scar pregnancies: a systematic review of treatment options. *Journal of minimally invasive gynecology*. 2017 Sep 1;24(6):915-25.
<https://doi.org/10.1016/j.jmig.2017.05.019>
 16. Alkatout I, Honemeyer U, Strauss A, Tinelli A, Malvasi A, Jonat W, Mettler L, Schollmeyer T. Clinical diagnosis and treatment of ectopic pregnancy. *Obstetrical & gynecological survey*. 2013 Aug 1;68(8):571-81.
<https://doi.org/10.1097/OGX.0b013e31829cdbeb>
 17. Chouinard M, Mayrand MH, Ayoub A, Healy-Profittós J, Auger N. Ectopic pregnancy and outcomes of future intrauterine pregnancy. *Fertility and Sterility*. 2019 Jul 1;112(1):112-9.
<https://doi.org/10.1016/j.fertnstert.2019.03.019>