

Case Series: Cesarean Scar Ectopic Pregnancy

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ABSTRACT

An ectopic pregnancy refers to any gestation implanted outside of the normal intrauterine gestation site. A cesarean scar ectopic pregnancy (CSEP) is the rarest form of all ectopic gestations with CSEPs with an incidence of approximately 1 in 2,000 pregnancies. It refers to the implantation of the gestational sac on a previous cesarean scar and understandably, the incidence of CSEPs has increased lately due to the increase in the number of cesarean sections (CS) performed. It is extremely important to diagnose this condition early as it poses significant morbidity including risks of uterine rupture, rarely, if left undetected. Ultrasound remains an important modality in diagnosing such pregnancies. Here, we discuss three unique cases of scar ectopic pregnancy wherein each has been managed differently.

Keywords: Cesarean scar ectopic pregnancy, Cesarean section, Dilatation and evacuation, Ectopic pregnancy.

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INTRODUCTION

The number of cesarean sections (CS) performed has shown a steady increase over the past few decades. Presently, with the advanced sonography techniques, the detection rates of cesarean scar ectopic pregnancy (CSEPs) have increased and hence, helped us in the prompt management and prevention of potentially life-threatening complications like uterine rupture and fatal hemorrhage.¹⁻⁵ While the mechanism behind the development of CSEPs remains mostly unclear, one school of thought regarding its origin has come to the forefront. The most probable mechanism that could explain the scar site implantation of pregnancy is the formation of a microtubular tract between the endometrial canal and the previous cesarean section scar. The myometrial tissue is thought to invade through these microtubular tracts. Intraoperative damage to the decidua basalis can apparently, microscopically persist within the endometrial layer as a residual minuscule defect or as small yawning tracts.⁵ There appears to be no relation between the number of previous CS and the risk of developing a CSEP.

Cesarean scar ectopic pregnancy may be of two types: Type I and Type II.⁶ Type I CSEPs (endogenic type) are characterized by implantation on the CS scar and further growth within the endometrial cavity. As a result, type I CSEPs may progress and continue growing into the endometrial cavity thus, being detected late, even up to the second and third trimesters. Type II CSEPs (exogenic type) implant into the CS scar and grow mainly towards the abdominal cavity. They have an increased propensity of causing a uterine rupture and may sometimes have bladder invasion (Fig. 1).

This case series deals with 7 patients diagnosed with CSEPs at a tertiary care institute and their consequent management. The authors hope that each of these case scenarios will throw more light into the efficient diagnosis and management of this rare condition.

CASE 1

A 25-year-old G2P1L1 woman with lower segment caesarean section. (LSCS) done 5 months back came to the OPD with complaints of amenorrhea for 2.5 months associated with occasional complaints of pain in the lower abdomen and intermittent complaints of

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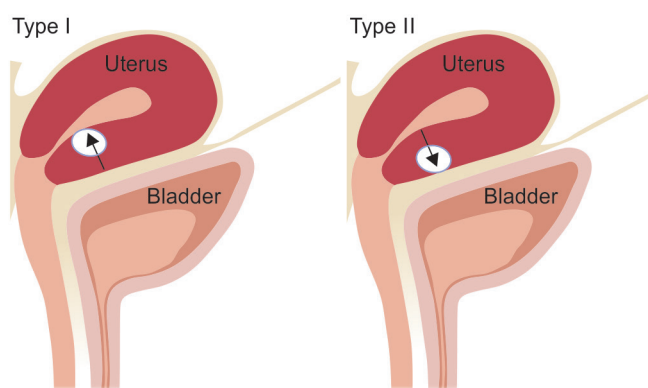


Fig. 1: Types of cesarean-scar ectopic pregnancy

bleeding per vaginam. Ultrasound sonography test (USG) showed features suggestive of scar ectopic pregnancy with G sac diameter corresponding to 5 weeks three days with the presence of fetal cardiac activity. Methotrexate was given at a dose of 50 mg/sqm on beta HCG levels of 4779 mIU/mL. Beta HCG levels repeated on days four and seven were 4,179 and 2,908 respectively. Subsequent USG done was suggestive of a crumpled G sac with no fetal cardiac activity with intrauterine clot (around 11 ccs). The patient had complete resolution of symptoms and was followed up with

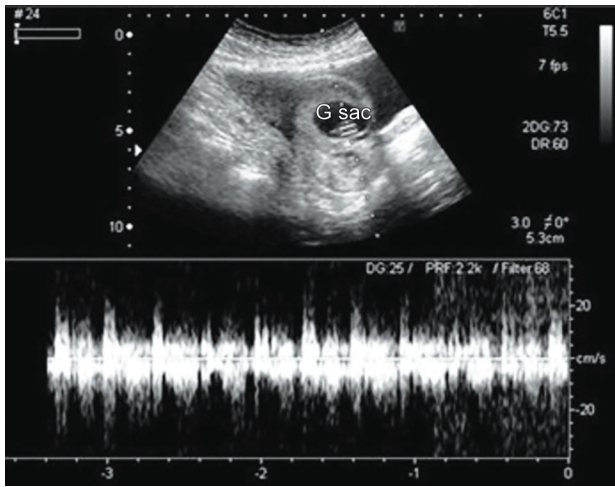


Fig. 2: USG showing choriodecidual reaction around the G sac. Fetal cardiac activity present as noted by the waveform

of conceptus (RPOC) that was previously noted. Clinically, patient stated to be having minimal altered bleeding per vaginam. There was no evidence of acute abdomen, increased abdominal girth, or fresh bleeding P/V throughout the patient's course in the ward. On follow-up, beta HCG was found to be persistently in decreasing trend, and repeat USG findings were suggestive of resolving status with consequently decreasing the size of the hematoma. Clinically, complaints of bleeding per vaginam were resolved (Fig. 3).

CASE 3

A 35-year-old female, G4P2L2SA1 with previous 2 LSCS came with complaints of spotting per vaginam for three days and pain in the lower abdomen with amenorrhea for 9 weeks. USG was suggestive of a G sac at the previous LSCS scar site with no evidence of fetal pole or cardiac activity. Beta HCG on admission was 16,635 mIU/mL. Serial monitoring showed significant decreasing trends with weekly values being 3,238 and 928 mIU/mL respectively. Serial USG done was suggestive of lower uterine segment G sac at the previous

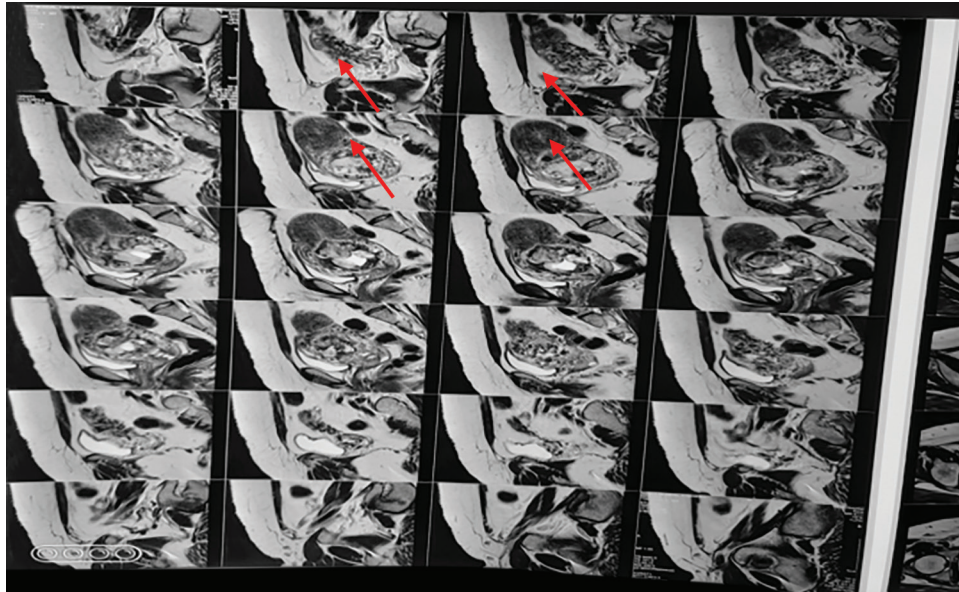


Fig. 3: MRI plate showing the RPOC at the scar site. Marked by red arrow

weekly beta HCG levels until three consecutive values were of non-pregnant levels. Subsequent USG done on follow-up showed complete resolution (Fig. 2).

CASE 2

A 30-year-old female, G2P1L1 with previous LSCS done 13 years back came to OPD with complaints of amenorrhea for 6 weeks with bleeding per vaginam. Her urine pregnancy test was positive. USG done was suggestive of retained products of conceptus at the previous LSCS scar site. An MRI evaluation was suggestive of hematoma within the endometrial cavity of approximately 60 cc and small, enhancing retained products of conceptus of 1.4 cm × 1.4 cm × 1.3 cm in the lower uterine segment at the scar site. No evidence of any yolk sac, or fetal pole. Beta HCG on admission was 12,984 mIU/mL. The patient was managed conservatively with the serial evaluation of beta HCG values which were found to be in decreasing trend. Follow-up USG showed a decrease in the size of the collection and resolving features of the retained products

cesarean scar site with vascularity progressively reduced than the previous scans. No evidence of any acute abdomen, or bleeding P/V throughout the patient's course in the ward. On subsequent follow-up, beta HCG values had returned to non-pregnant levels and USG showed resolving features.

CASE 4

A 26-year-old, G3P2L2 with previous two LSCS with last childbirth being 2 years ago was referred to tertiary hospital in view of UPT positive with USG showing scar ectopic gestation patient was at 7 weeks of gestation. The patient had no complaints on admission. A repeat sonographic evaluation showed an elongated gestational sac at the scar site with thinned-out myometrium with a yolk sac present. However, there was no evidence of a fetal pole. Beta HCG on admission was 18,731 mIU/mL followed by 21,821 mIU/mL. In view of rising Beta HCG trends, the patient was taken up for exploratory laparotomy with excision of scar ectopic gestation followed by suturing of remaining uterine defect. Postoperatively,

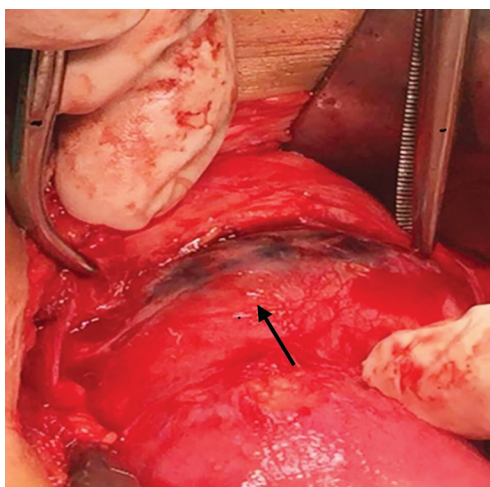


Fig. 4: Intraoperative finding of scar ectopic pregnancy at the lower uterine segment

beta HCG was 744.38 mIU/mL. Consequent beta HCG values were in decreasing trends and post-op recovery was uneventful. On follow-up, the patient had no complaints, and beta HCG values reached non-pregnant levels (Fig. 4).

CASE 5

A 29-year-old female, G3P1L1SA1 with previous one LSCS done 3 years back was referred to KEM Hospital with USG suggestive of ectopic gestation at a previous cesarean scar site. An ultrasound repeated at a tertiary hospital showed a gestational sac at the scar site with thinning of uterine myometrium at that region. The sac had a fetal pole however, there was no evidence of any fetal cardiac activity. Beta HCG levels on admission were 6,219 mIU/mL. On admission, the patient was at 6 weeks and two days of gestational age with complaints of intermittent episodes of spotting per vaginam. After tracing all routine investigations, an injection of methotrexate was given at the dose of 50 mg/sq. m of body surface area. Beta HCG values repeated on days four and seven post-methotrexate were found to be in decreasing trends. Ultrasonography repeated ten days after methotrexate showed a crumpled gestational sac with no evidence of any yolk sac or fetal pole within it. Further, follow-up with weekly beta HCG levels showed a gradual decrease in the levels until the levels eventually returned to non-pregnant values. Corresponding USG suggested a complete resolution.

CASE 6

A 25-year-old, G2P1L1 with previous LSCS 3 years back was referred to KEM from a private clinic with ultrasonography suggestive of scar site ectopic gestation. A multiplanar, multi-echo MRI done shows features suggestive of a gestational sac at the lower uterine segment attached to the previous LSCS scar with thinning of the adjacent myometrium. Fetal cardiac activity was present within the gestational sac and was corresponding to 7 weeks and one day of gestation. The patient had no presenting complaints. Beta HCG on admission was 53,478 mIU/mL. She underwent a manual vacuum aspiration under anesthesia and the procedure was completed uneventfully. Post-procedure, the patient was given one dose of methotrexate on a beta HCG level of 15,393 mIU/mL. Beta HCG repeated on day four of methotrexate was 3,449 mIU/mL and

further values showed decreasing trends. Ultrasound sonography test showed mild collection within the endometrial cavity with no evidence of any gestation.

CASE 7

A 35-year-old, G3P2L2 with previous 2 LSCS, last childbirth being 15 years back was referred with USG findings suggestive of ectopic gestation implanted at previous LSCS scar site. She was at 6 weeks and five days of gestation by the dates of her last menses. Repeat sonography done at our institute suggested Type II CSEP with the presence of a yolk sac but no fetal pole was seen with a mean sac diameter corresponding to 6 weeks and two days. Beta HCG on admission was 25,107 mIU/mL. Injection methotrexate was given at a dose of 50 mg/sqm of body surface area. A repeat beta HCG done after 3 days of systemic methotrexate was found to be 13,211 mIU/mL. Day 7 beta HCG value was 8,363 mIU/mL. One week after, beta HCG values had further fallen to 3,110 mIU/mL. Repeat ultrasound showed a G sac with a small (1.7 cm × 1.5 cm × 1.5 cm) sized collection within it with no evidence of fetal cardiac activity. Thereafter, the patient was kept on weekly beta HCG monitoring. Throughout the course, the patient had no complaints of pain in the abdomen or bleeding per vaginam and she was vitally stable. Further, follow-up with weekly beta HCG levels showed gradually decreasing trends.

DISCUSSION

A cesarean scar ectopic pregnancy is the rarest form of ectopic gestation and is found in approximately 1 in 2226 pregnancies.⁵ There are two types of scar ectopic gestation: Type I or the endophytic one wherein the gestation grows towards the cervico-isthmic junction or within the uterine cavity. Type II or the exophytic one refers to the gestational sac growing towards the uterine myometrium and may even extend or breach the serosal layer causing life-threatening complications like uterine rupture and consequent massive hemorrhage. Contrary to a common misconception, the risk of scar ectopic gestation does not increase with an increase in the number of previous cesarean sections done on the patient.⁶

Ultrasound performed by a good radiologist remains the first line of investigation to diagnose scar ectopic pregnancy. As per ultrasound, scar ectopic gestation can be classified into Types I to IV where Type IV is the most dangerous one which may even have extensions up to the bladder. Occasionally, some practitioners may perform an MRI.

Many different treatment modalities for CSEPs have been reported. The success rates and associated morbidity and mortality vary with each method and depend on patient stability and desire for future fertility. Methotrexate is the primary choice for medical management Post Mtx, occasionally there may be a transient increase in beta HCG values due to local choriodecidual reaction. However, if there is the persistent rise in beta HCG values, a repeat dose of methotrexate may be considered. The repeat dose may be systemic or locally given under ultrasound guidance. In case of failed medical management or in the presence of fetal cardiac activity or in a hemodynamically unstable patient, surgical management is the method of choice.⁷

Surgical treatment, which is successful in approximately 96%, is the definitive method of management that offers complete evacuation of the gestational products while also offering a chance to restore the uterine defect thus preserving future fertility.⁸

Surgical excision may be by laparoscopy, laparotomy, hysteroscopy, or manual vacuum aspiration as was done with our sixth case.⁹ While attempting a surgical excision, it is imperative to have blood and blood products in reserve as there is a risk of severe bleeding intraoperatively which may very rarely end up in a hysterectomy.

Other methods include uterine artery embolization with curettage and/or Methotrexate injection, and bilateral hypogastric artery ligation with a combination of dilatation and curettage laparoscopically.^{10,11}

Very rarely, some practitioners might use expectant management as shown in our second case wherein the patient had already aborted and the scar site only had retained products of the conceptus. However, given the high risk of life-threatening complications like uterine rupture and consequent increased morbidity, the expectant line of management is not advised in a conventional cesarean scar ectopic pregnancy.

CONCLUSION

The risk of recurrence of a scar ectopic pregnancy is about 3.2–5%.¹² However when a patient with a previous history of CSEP conceives even with normal intrauterine gestation, the risk of other complications like adherent placenta, abnormal bleeding, the need for emergency hysterectomies is increased. The accurate diagnosis of CSEPs requires a high index of suspicion from the clinician's end, good radiological tools including an ultrasound at the screening level, and even an MRI for equivocal cases.¹³ Early diagnosis and prompt management are of the essence here in order to avoid life-threatening complications like massive hemorrhage and uterine rupture.¹⁴ Medical treatment can be attempted in patients who are hemodynamically stable with a gestational sac of less than 8 weeks, to protect fertility and to escape surgical morbidity.¹⁵ Lastly, with cesarean section rates on a steady rise globally, the incidence of CSEPs is projected to increase in the coming years and an obstetrician is more likely to come across such cases during their practice.

REFERENCES

1. Jameel K, Abdul Mannan G, Niaz R, et al. Cesarean scar ectopic pregnancy: A diagnostic and management challenge. *Cureus* 2021;13(4):e14463. DOI: 10.7759/cureus.14463.
2. Boerma T, Ronsmans C, Melesse DY, et al. Global epidemiology of use of and disparities in caesarean sections. *Lancet* 2018;392(10155):1341–1348. DOI: 10.1016/S0140-6736(18)31928-7.
3. Yela DA, Marchiani N. Conservative management of ectopic pregnancy in cesarean scar: Case report. *Rev Bras Ginecol Obstet* 2013;35:233–237. DOI: 10.1590/s0100-72032013000500008.
4. Erem AS, Konney TO, Appiah-Kubi A, et al. Use of magnetic resonance imaging (MRI) in the management of diagnostic uncertainty in low-resource settings: A case report of cesarean ectopic pregnancy in a tertiary hospital in ghana. *Am J Case Rep* 2020;21:e927496. DOI: 10.12659/AJCR.927496.
5. Shafqat G, Khandwala K, Iqbal H, et al. Cesarean scar pregnancy: An experience of three cases with review of literature. *Cureus* 2018;10(2):e2133. DOI: 10.7759/cureus.2133.
6. Getaneh Tadesse W. Cesarean scar ectopic pregnancy. Non-tubal ectopic pregnancy [Internet] 2020; Available from: <http://dx.doi.org/10.5772/intechopen.89023>.
7. Cömert EH, Sal H, Ekici YS, Seda, E, Guven, G. Cesarean scar pregnancy: A case report. *Türk Klin Jinekoloji Obstet* 2018;26(1):37–39.
8. YükselŞimşek S, Şimşek E, AlkaşYağınç D, et al. Outcomes of cesarean scar pregnancy treatment: Do we have options? *Türk J Obstet Gynecol* 2021;18(2):85–91. DOI: 10.4274/tjod.galenos.
9. Diagnosis and management of ectopic pregnancy: Green-top guideline no. 21. *BJOG* 2016;123(13):e15–e55. DOI: 10.1111/1471-0528.14189. A published erratum appears in *BJOG* 2017;124(13):e314. DOI: 10.1111/1471-0528.14983.
10. Maheux-Lacroix S, Li F, Bujold E, et al. Cesarean scar pregnancies: A systematic review of treatment options. *J Minim Invasive Gynecol* 2017;24(6):915–925. DOI: 10.1016/j.jmig.2017.05.019.
11. Glenn TL, Bembry J, Findley AD, et al. Cesarean scar ectopic pregnancy: Current management strategies. *Obstet Gynecol Surv* 2018;73(5):293–302. DOI: 10.1097/OGX.0000000000000561.
12. Görker S, Sadun S, Muge H, et al. Successful management of cesarean scar pregnancy with vacuum extraction under ultrasound guidance. *Acute Med Surg* 2018;5(4):358–361. DOI: 10.1002/ams2.362.
13. Jayaram PM, Okunoye GO, Konje J. Cesarean scar ectopic pregnancy: Diagnostic challenges and management options. *Obstet Gynaecol* 2017;19(1):13–20. DOI: <https://doi.org/10.1111/tog.12355>.
14. Dutta I, Haldar A, Nath M. Scar pregnancy: A case series involving two medical college hospitals in West Bengal. *J South Asian Feder Obst Gynae* 2020;12(1):51–58. DOI: <https://doi.org/10.5005/jp-journals-10006-1756>.
15. Gopinath KR, Sivapragasam V. Successful medical management of cesarean scar pregnancy with high β -hCG levels. *J South Asian Feder Obst Gynae* 2022;14(6):761–762. DOI: 10.5005/jp-journals-10006-2168.