



Clinical Profile and Outcome of Caesarean Scar Pregnancy in a Tertiary Care Center - A One Year Study

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Abstract

Caesarean scar ectopic is a rare but significant variant of ectopic pregnancy where the implantation is in the cesarean scar.

Objective: *To study the clinical profile and outcome of cesarean scar pregnancy during the year 2016 in the department of O&G, Government Medical College Thiruvananthapuram.*

Results: *Among 8520 deliveries in 2016 there were 8 cases of cesarean scar ectopic pregnancies. Majority were third gravida with history of previous one cesarean delivery. Mean age of the patients was 30 years. The gestational age of diagnosis was between 6-7weeks in 75% of the cases. Only half of the patients were primarily diagnosed as scar ectopic. Two patients were successfully treated with systemic methotrexate. Two directly underwent laparotomy and scar excision, one for impending rupture and the other at the request of the patient for sterilization. Rest were initially misdiagnosed as missed abortion. After failed medical abortion, two were diagnosed as scar ectopic in repeat sonogram. Both of them responded to systemic methotrexate, but was not willing for follow up and so underwent laparotomy. In the other two patients after failed medical abortion, surgical evacuation was done. This resulted in profuse hemorrhage necessitating laparotomy which confirmed scar pregnancy in both the cases.*

Conclusion: *The implantation site of pregnancy in a scarred uterus is significant. Most of the time scar ectopic is misdiagnosed as normal intra uterine pregnancy or missed abortion and managed accordingly. This can result in unforeseen complications like severe hemorrhage, uterine perforation necessitating emergency laparotomy and multiple blood transfusions and even hysterectomy. If scar ectopic pregnancy is timely diagnosed there are various options for conservative management.*

Keywords: *Cesarean Scar Ectopic, Systemic Methotrexate, Scar pregnancy excision.*

Introduction

Caesarean scar ectopic is a rare variant of ectopic pregnancy. Here the pregnancy is implanted in the lower uterus anatomically corresponding to the site of cesarean scar. It represents about 6.1% of ectopic pregnancy in women with at least one previous cesarean.⁽¹⁾ When compared to other

ectopic pregnancies the diagnosis may be missed or delayed if the patient is asymptomatic or can mimic a spontaneous miscarriage when symptomatic. This study was conducted to understand the clinical profile of women admitted to a tertiary care center with caesarean scar pregnancy. We also reviewed the outcome in these cases.

Materials and Methods

This descriptive study was conducted in the department of Obstetrics and Gynecology of SAT hospital, Government Medical College Thiruvananthapuram. All cases diagnosed as caesarean scar pregnancy during the period from January 1st 2016 to December 31st 2016 were included in the study.

The medical records and the pelvic sonogram and Doppler data of all cases diagnosed as caesarean scar pregnancy were collected and reviewed. The classical diagnostic criteria used for the diagnosis of scar pregnancy were gestational sac in the area of the previous caesarean scar, empty upper uterine cavity and cervical canal, absence of healthy myometrium between bladder and gestational sac and high velocity low impedance peri- trophoblastic flow. In cases of failing caesarean scar pregnancies and those cases which were referred after initial management with mifepristone and /or misoprostol, the ultrasound finding of a vascular heterogeneous, mass at the scar site were also included.^(2,3) Cervical pregnancies and abortion in progress were excluded.

The study variables included sociodemographic data, previous obstetric details and the data pertaining to present pregnancy in terms of diagnosis, course in the hospital and outcome. The data was collected using a pre- structured Performa and analyzed.

Results

During the study period of one year we had 8520 deliveries, 616 cases of ectopic pregnancy and 8 cases of caesarean scar pregnancy. Scar pregnancy contributed to 1.3% of total ectopic pregnancies.

The mean age of the patients with scar pregnancy was 30 years. All patients had high school level education or above. None of them were skilled professional. Majority (75%) of them belonged to low socioeconomic class family. All cases (100%) were referred from other hospitals of which 62.5% were referred from government hospitals and 37.5% from private hospitals.

Majority of the patients (75%) were third gravida. 75% of the patients had previous one cesarean and 25% had previous 2 cesareans. 50% (n=4) of the patients had a history of abortion out of which only two had history of D&C. The shortest interval from the last pregnancy was 10.5 months and the longest interval 12 years. In all the cases the primary CS was done at term but before the patient had entered into active phase of labor. In all patients except one who had mild PPH the intra operative and post-operative period of the previous CS was uneventful.

All patients presented to the local hospital with bleeding PV. 75% of them presented at 6-7 weeks of pregnancy, one at 10 weeks and the other at 13 weeks. After USS, only 50% were suspicious of scar pregnancy out of which 3 had the classical diagnostic criteria. 50% of them (4 out of 8) were diagnosed as missed abortion. Out of 8 patients, only one pregnancy was viable at the time of diagnosis. Beta HCG values varied from 2286 (6 weeks) to 59608 mIU/ml (13 weeks).

Two patients were managed successfully with systemic methotrexate. Two were directly taken for laparotomy, one since she requested for sterilization and the other because of impending rupture of scar pregnancy.

The diagnosis of scar pregnancy was missed in four cases. Medical abortion tried with misoprostol misinterpreting as missed abortion but none of them responded. Subsequent surgical evacuation resulted in profuse bleeding in two resulting in hemodynamic instability necessitating an emergency laparotomy. Scar pregnancy was confirmed intraoperatively and excision done. The other two patients received systemic methotrexate and beta HCG values regressed. Of the two, one was a previous two cesarean with sterilization failure and at her request an open surgery with scar pregnancy excision and bilateral total salpingectomy done. The other patient was not willing for a prolonged follow up and hence after a trial surgical evacuation laparotomy and scar pregnancy excision done.

Finally six patients had laparotomy and scar pregnancy excision. Three had transfusion of blood and blood products ranging from 3 to 5 pints. Uterus was preserved in all. Three were sterilized and rest were advised a minimum period of contraception of one year.

Histopathological examination of all confirmed normal products of conception and in cases where the myometrium was also excised there were villi embedded in the myometrium.

During the follow up period, the patient who had re-sterilization and scar pregnancy excision presented with irregular bleeding per vaginam after two and a half months. She had a rising beta

hCG titre and a vascular mass in the lower uterus. She was given three courses of methotrexate-folinic acid regime to which she did not respond. Considering the possibility of choriocarcinoma she underwent total hysterectomy. The histopathological report confirmed choriocarcinoma. Her CT chest showed micrometastasis in the lungs (FIGO stage III: 7) and was given six courses of EMACO regime.

All other patients were asymptomatic with normal menstruation. One patient who had undergone excision of scar pregnancy had a follow up scan after one year. It showed a 3mm hypo echoic area at the scar area.

Table: Clinical profile of patients with cesarean scar pregnancy

VARIABLES	CATEGORY	No:	%	
Socio-economic class	APL	2	25%	
	BPL	6	75%	
Referral status	Yes	8	100%	
	No	0	0	
No: of Previous caesarean	1	6	75%	
	2	2	25%	
Timing of primary cesarean	Before active labor	8	100%	
	In active labor	0	0	
H/o abortion	Yes	4	50%	
	No	4	50%	
Presenting symptom	Bleeding P V	7	87.5%	
	Abdominal pain and bleeding P V	1	12.5%	
Gestational age at diagnosis	≤ 7 weeks	6	75%	
	At 10weeks	1	12.5%	
	At 13 weeks	1	12.5%	
USS diagnosis	Scar pregnancy	4	50%	
	Missed abortion	4	50%	
Viability of fetus at time of diagnosis	Viable	1	12.5%	
	Non-viable	7	87.5%	
Management modality	Single	Systemic methotrexate alone	2	25%
		Laparotomy and scar excision	2	25%
	Multiple	4	50%	
Final management	Medical	2	25%	
	Surgical	6	75%	
Blood transfusion	Yes	3	37.5%	
	No	5	62.5%	

Discussion

Cesarean scar pregnancy is a rare event. True incidence is difficult to compute as it is difficult to estimate the denominator accurately unless all previous cesarean conceptions are brought under a registry. Jurkovic et al has reported 18 cases of

cesarean scar pregnancy over a period of 4 years in 2003 and the incidence was 1:1800 pregnancies.⁽⁴⁾ The denominator was early pregnancies referred to their early pregnancy units for USS. Seow et al reported 12 cases over a 6 year period in 2004. The incidence was 1:2216⁽¹⁾ and the

denominator used for computing the incidence was the number of deliveries during that period. Taking the number of deliveries as the denominator, the incidence of scar ectopic in our study was 1:1065. The incidence is higher than the reported incidence which may be accounted for by the rising cesarean rate as years go by, the referral nature of institution, and the advances in the diagnostic modalities.

The entity of scar pregnancy started getting recognized and reported way back from 1980's^(5,6,7). In our study 50% of the cases were misdiagnosed as missed abortion and managed accordingly resulting in excess morbidity in the form of emergency surgery, blood transfusions and one was even a near miss. This points to the fact that even though three decades have elapsed after the recognition of scar pregnancy the general awareness is still not up to the mark. This needs introspection and rectification of pitfalls in diagnosis.

In our study the indication for primary cesarean were breech (3), failed induction(4), severe preeclampsia with an unfavorable cervix(1) all pointing towards cesareans done prior to active labor. Maymon et al⁽⁸⁾ has also found an association between elective cesarean section performed in a non-developed lower uterine segment and subsequent scar ectopic.

There is said to be an association of scar pregnancy with increasing number of cesareans⁽⁴⁾ but this was not seen in our study. This may be due to the fact that the majority of Kerala women are keen on restricting the childbirth to two.

There is no consensus as to the optimum management of a scar pregnancy. It is individualized based on the acuteness of presentation, gestational age and viability of fetus, facility available and the skill of the attending health professional. Unlike ectopic pregnancies at other sites, here an expectant management may be possible in the type of scar pregnancy that is 'on' the scar as described by Vial et al.⁽⁹⁾ The pregnancy may grow even up to the third trimester but with the risk of a placenta which may become an accreta or

percreta. In this study none was managed expectantly as only one was live and that patient was unwilling for a risky pregnancy.

Two were successfully managed with systemic methotrexate. Medical management with systemic methotrexate may not have the desired effect as it may not reach the implantation site if it is fully embedded in the fibrous scar tissue. Even after the HCG level has come down, the mass may persist for a longer period and so may need a prolonged follow up with serial HCG and sonogram⁽⁹⁾. This exactly was the reason in one of our patient where even though HCG level significantly declined after the initial methotrexate, the vascular mass persisted and she insisted on a 'one time treatment' of laparotomy and wedge resection of the scar pregnancy. There is an argument that excision of scar pregnancy is the ideal treatment to be followed, and endoscopic route is gaining popularity.⁽¹⁰⁾ Scar pregnancy excision can be considered as a onetime treatment and it also provide a chance for the repair of an existing defect. But the present evidence is insufficient to reach a conclusion regarding the ideal treatment.

Vaginal suction evacuation is advocated by some as a management option.⁽¹¹⁾ Pre evacuation methotrexate administration was not found to be superior to suction evacuation alone in a study by Sevket O et al.⁽¹²⁾ Our observation was that direct surgical evacuation without prior methotrexate resulted in profuse bleeding when compared to evacuation after methotrexate.

New approach to scar pregnancy management includes transvaginal removal of ectopic, laparoscopic resection, hysteroscopic aspiration, uterine artery embolization, and trans arterial chemo embolization.^(13,14,15,16) But all these require sophisticated equipments and expertise. Using GnRH agonist to create a pseudo menopausal amenorrhea state while waiting for the spontaneous absorption of the scar pregnancy mass has also been tried.⁽¹⁷⁾

Conclusion

Cesarean scar pregnancy even though rare can sometimes be fatal. If it goes unrecognized the woman is losing her chance to take an informed decision whether to continue the pregnancy or not. If incorrectly diagnosed and managed can lead to severe morbidity, sometimes loss of fertility and even mortality.

In our study low implantation of pregnancy was seen in 80% of early scans which was not properly conveyed or interpreted by the initial health care professional. An awareness should be created among the radiologists and obstetricians who are doing or interpreting early first trimester ultrasound to specifically look for the site of implantation of pregnancy in a scarred uterus.. The majority of cases were diagnosed at around 7 weeks in our study. Hence policy makers can recommend for an early scan at around 7 weeks with focus on implantation site.

Limitation of the study: Being a rare event the number studied was less and statistically significant conclusions cannot be made.

Declaration

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References

1. Seow KM, Huang LW, Lin YH, Yan-Sheng Lin M, Tsai YL, Hwang JL. Cesarean scar pregnancy: issues in management. *Ultrasound in obstetrics & gynecology*. 2004 Mar 1;23(3):247-53.
2. Seow KM, Hwang JL, Tsai YL. Ultrasound diagnosis of a pregnancy in a cesarean section scar. *Ultrasound in Obstetrics & Gynecology*. 2001 Nov 1;18(5):547-9.
3. Vial Y, Petignat P, Hohlfeld P. Pregnancy in a cesarean scar. *Ultrasound in obstetrics & gynecology*. 2000 Nov 1;16(6):592-3.
4. Jurkovic D, Hillaby K, Woelfer B, Lawrence A, Salim R, Elson CJ. First-trimester diagnosis and management of pregnancies implanted into the lower uterine segment Cesarean section scar. *Ultrasound in obstetrics & gynecology*. 2003 Mar 1;21(3):220-7.
5. Fylstra DL. Ectopic pregnancy within a cesarean scar: a review. *Obstetrical & gynecological survey*. 2002 Aug 1;57(8):537-43..
6. Roberts H, Kohlenber C, Lanzarone V, Murray H. Ectopic pregnancy in lower segment uterine scar. *Australian and New Zealand journal of obstetrics and gynaecology*. 1998 Feb 1;38(1):114-6.
7. Godin PA, Bassil S, Donnez J. An ectopic pregnancy developing in a previous caesarian section scar. *Fertility and sterility*. 1997 Feb 1;67(2):398-400.
8. Maymon R, Halperin R, Mendlovic S, Schneider D, Vaknin Z, Herman A, Pansky M. Ectopic pregnancies in Caesarean section scars: the 8 year experience of one medical centre. *Human Reproduction*. 2004 Feb 1;19(2):278-84.
9. Timor-Tritsch IE, Monteagudo A, Santos R, Tsybmal T, Pineda G, Arslan AA. The diagnosis, treatment, and follow-up of cesarean scar pregnancy. *American journal of obstetrics and gynecology*. 2012 Jul 31;207(1):44-e1.
10. Wang CJ, Chao AS, Yuen LT, Wang CW, Soong YK, Lee CL. Endoscopic management of cesarean scar pregnancy. *Fertility and sterility*. 2006 Feb 28;85(2):494-e1.
11. Tekin YB, Ural UM, Balık G, Ustuner I, Şahin FK, Güven ES. Management of cesarean scar pregnancy with suction curettage: a report of four cases and review of the literature. *Archives of gynecology and obstetrics*. 2014 Jun 1;289(6):1171-5.

12. Sevket O, Keskin S, Ates S, Molla T, Dansuk R, Yazicioglu HF, Yucel O. Is methotrexate administration needed for the treatment of caesarean section scar pregnancy in addition to suction curettage?. *The European Journal of Contraception & Reproductive Health Care*. 2014 Apr 1;19(2):128-33
13. He M, Chen MH, Xie HZ, Yao SZ, Zhu B, Feng LP, Wu YP. Transvaginal removal of ectopic pregnancy. *Obstetrics & Gynaecology*. 2011 Aug 1;118(9):1136-9.
14. Yang Q, Piao S, Wang G, Wang Y, Liu C. Hysteroscopic surgery of ectopic pregnancy in the cesarean section scar. *Journal of minimally invasive gynecology*. 2009 Aug 31;16(4):432-6.
15. Pang YP, Tan WC, Yong TT, Koh PK, Tan HK, Ho TH. Caesarean section scar pregnancy: a case series at a single tertiary centre. *Singapore Med J*. 2012 Oct 1;53(10):638-42.
16. Sugawara J, Senoo M, Chisaka H, Yaegashi N, Okamura K. Successful conservative treatment of a cesarean scar pregnancy with uterine artery embolization. *The Tohoku journal of experimental medicine*. 2005;206(3):261-5.
17. Ng BK, Lim PS, Ahmad S, Kampan NC, Karim AK, Omar MH. Cesarean scar pregnancy: What can we offer?. *Taiwanese Journal of Obstetrics and Gynecology*. 2015 Apr 30;54(2):208-10.