ISSN- O: 2458 - 868X, ISSN–P: 2458 – 8687
National Library of Medicine - ID: 101731606

International Journal of Medical Science and Innovative Research (IJMSIR)
IJMSIR : A Medical Publication Hub
Available Online at: www.ijmsir.com
Volume – 7, Issue – 5, October – 2022 , Page No. : 90 – 96

Treatment Modalities For Cesarean Scar Pregnancy: A Tertiary Care Experience From Kashmir's Lalla Ded Hospital

[1]Dr Fariha Aman, Resident Department of Obstetrics and Gynaecology, Lalla Ded Hospital, Srinagar, J&K, India.

[2]Dr Saniyah Khan Galzie, Resident Department of Obstetrics and Gynaecology, Lalla Ded Hospital ,Srinagar, J&K, India.

[3]Dr Sameena Sultana, Professor and Head of Unit, Department of Obstetrics and Gynaecology, Lalla Ded Hospital, Srinagar, J&K, India.

[4]Dr Sabahat Rasool, Asst. Professor, Department of Obstetrics and Gynaecology, Lalla Ded Hospital, Srinagar, J&K, India.

Corresponding Author: Dr Fariha Aman, Resident Department of Obstetrics and Gynaecology, Lalla Ded Hospital, Srinagar, J&K, India.

Citation this Article: Dr Fariha Aman, Dr Saniyah Khan Galzie, Dr Sameena Sultana, Dr Sabahat Rasool,"Treatment Modalities For Cesarean Scar Pregnancy: A Tertiary Care Experience From Kashmir's Lalla Ded Hospital", IJMSIR- October - 2022, Vol – 7, Issue - 5, P. No. 90 – 96.

Type of Publication: Original Research Article

Conflicts of Interest: Nil

Abstract

Aim: Cesarean scar pregnancy is the rarest form of ectopic pregnancy.Since there is no consensus on the treatment modality or a generally accepted guideline in Cesarean scar pregnancy, this study aims to evaluate the clinical presentations, treatment modalities and the outcomes of 15 cases of CSP with the background of our clinical experience admitted in Lalla Ded hospital, a tertiary care maternity hospital of Kashmir.

Methods: This is a prospective case series study that was conducted in Lalla Ded hospital which is largest and only tertiary care maternity hospital of Kashmir. 15 cases which were diagnosed and treated with CSP at this hospital were studied. The clinical characteristics, diagnosis, different treatment modalities, and clinical outcomes were analyzed.

Results: Out of 15 patients, 7 had a history of two cesarean sections in the past, 4 patients had a history of three cesarean section and 4 patients had a history of previous one LSCS. In this study 10 patients had past history of previous abortion and among them 4 had a history of check curettage done in past and 1 patient had history of check curettage done thrice in the past. All 15 patients in our study underwent initial medical management with methotrexate. The success of the medical management was monitored by serial β- HCG values. 8 patients underwent laparotomy,2 patients were managed with usg guided check curettage and 6 patients needed only MTX therapy for resolution of pregnancy.

Conclusion: CSP is a life-threatening condition that can be diagnosed early with the help of transvaginal ultrasonography. The treatment, however, depends on the presenting complaints, USG findings, β HCG levels and desire of future fertility. Well-defined diagnostic criteria coupled with structured management and follow-up protocol can help in treating this challenging form of ectopic pregnancy.

{CSP=Cesarean scar pregnancy,β HCG =beta human chorionic gonadotrophin ,MTX = Methotrexate,LSCS= Lower segment caesarean section}

Introduction

Cesarean scar pregnancy (CSP) is defined as the ectopic implantation of the fertilized ovum in the myometrium of the lower segment of the uterus on a previous cesarean scar. Myometrium of the previous cesarean section scar is the site of implantation .A Caesarean scar pregnancy puts challenges to the obstetrician in choosing the mode of management for the patients. A Caesarean scar pregnancy can cause serious complications such as uterine rupture, profuse haemorrhage and maternal death, hence early diagnosis and management is needed in such cases. Also research has suggested that CSP is a precursor of morbidly adherent placenta [(1)]

The reported incidence of CSP is ~1:1800–1:2216 [(2,3)] and is up to one in 531 among women who have had a previous caesarean section[(4)]. It is considered to be the rarest type of ectopic pregnancy [(5)].With the increasing prevalence of procedures that could potentially affect the endometrium, such as cesarean section, dilatation and curettage, myomectomy, and hysteroscopic procedures, the rate of CSP had been proportionally increasing. However, this also might be due to the availability of transvaginal ultrasound combined with color and pulsed Doppler assessment in early gestation and, thus better opportunity of detecting CSP [(6).] Early diagnosis and treatment of ectopic cesarean scar pregnancy are essential to avoid the complications and better prognosis.[(7)]

Methods

In this study a total of 15 cases were studied. Our hospital is the largest Obstetrics and Gynecology tertiary care centre in Kashmir province. We receive referrals from all other districts. Therefore, the cases were well balanced and representative. The patients were diagnosed with CSP based on the grayscale transvaginal ultrasound scan.

{All CSP cases were confirmed by color Doppler ultrasound and/or postoperative pathology.

The typical sonographic findings of CSP are as:

- Empty intrauterine cavity and cervix with no gestational sac seen.
- Gestational sac implant in the anterior inferior segment of the uterine muscle layer (equivalent to the previous incision site from CS in the uterus), with or without a fetal pole and the presence or absence of cardiac activity;
- Interrupted continuity of the myometrium in the anterior uterine wall with an obviously thin or invisible myometrial layer between the gestational sac and the bladder; and
- Color Doppler Flow Imaging (CDFI) showing high-speed and low obstruction blood flow signal around the gestational sac[6]

A total of 15 cases were enrolled in this study. All patients were hospitalized for treatment. In each case, the detailed history of patient was documented with maternal age ,obstetric history ,history of last menstrual cycle, gravidity, gestational age (weeks), number of previous LSCS, previous history of abortions. Patients presenting complaints were documented and general physical examination was done followed by the documentation of vitals and local pelvic examination. All baseline investigations, diagnostic ultrasound and the measurement of baseline β-HCG levels were done at the time of admission.

The treatment was given based on the clinical condition of the patient, gestational age, and ultrasound findings and serum β-HCG levels and desire for future fertility. For cases where clinical signs of miscarriage were present or the immediate response to Methotrexate was

inadequate with persistence of trophoblastic vascularization, and persistent high β-HCG levels, surgical managementwas initiated, which consisted of curettage and laparotomy with excision of scar site as clinically indicated.

The various treatment methods used were medical, surgical and combined. Systemic Methotrexate at 1 mg/kg/dose was first line of management proposed in all cases. For women who received Methotrexate treatment, liver and renal function tests were done. Complete biochemistry was done, whereas for women who underwent surgical management, blood and Rh type and crossmatch were also done. Before initiation of Methotrexate treatment, a thorough history was taken from every patient to identify presence of any contraindications to treatment. These patients underwent periodic testing of renal and liver function. There were no contraindications or complications of Methotrexate treatment in any of our patients. Additional therapy with folinic acid was given to prevent the toxic effects of Methotrexate. The full blood count was rechecked the day after medical and surgical management.

Upon decision of pregnancy termination, medical management was undertaken in all cases and 1 mg/kg systemic Methotrexate was given (dose calculated as per body weight). Serial monitoring of β-HCG levels was done, on days one, seven, 14, 21, and further to document the subsequent fall in serum levels. Surgical management was employed for the cases where an embryo was seen by ultrasound, being prompted by inadequate response to Methotrexate and/or signs of miscarriage with heavy vaginal bleeding.

Ultrasound and β-HCG surveillance ensured that the resolution of pregnancy was achieved in all cases after medical surgical or combined treatment.

Result

Table 1: Case presentation

Case No.	Maternal age	Gravida/ Parity	Age of Gestation	No.of previous abortions	No. of surgical procedures undergone
1.	38yr	G4P3L3A1	5Wk3Days	A1(med mang)	3 LSCS
2.	34yr	G4P3L2	5Wk4 days	NIL	3 LSCS
3.	30yr	G3P1L1A1	7Wk	A1(2C/C)	1LSCS
4.	34yr	G5P3L2A1	9 Wk + 8Wk	A1(C/C Done)	1NVD 2LSCS
5.	35yr	G5P3L3A1	5Wk 6DAYS	A1(C/C DONE)	3LSCS
6.	30yr	G3P2L2	5Wk 5Days	NIL	2LSCS
7.	35yr	G3P2L2	4Wk 2 Days	NIL	2LSCS
8.	38yr	G5P3A1	6Wk 2Days	A1(MED MX)	3LSCS
9.	32yr	G4P1L1A3	6Wk Oday	A3(3C/C DONE)	1LSCS
10.	36yr	G4P3L2	7Wk 2Days	NIL	1NVD2 LSCS
11.	34yr	G4P2L2A1	6Wk 2 DAYS	A1	2LSCS
12.	35yr	G4P2L2A1	10Wk 4DAYS	1C/C	2LSCS
13.	35yr	G2P1L1	5wk		1LSCS
14.	36yr	G3P2L2	6Wk		2LSCS
15.	35yr	G3P1A1	6Wk	1C/C	1LSCS

In this study majority of women were of age group 30 to 38yrs.The average geststional age by LMP in this study was between 4 to 7 weeks with only one case who presented at 10 weeks. Out of 15 patients 7 had a history of two cesarean sections in the past, 4 patients had a history of three cesarean section and 4 patients had a history of one cesarean section (LSCS). In this study 10 patients had past history of previous abortion and among them 4 had a history of check curettage done in past and 1 patient had history of check curettage done thrice in the past.

Table 2: Clinical presentation and UsG findings

Case	Clinical presentation	Usg findings	BHCG levels
1.	Amenorrhea+BPV+Pain abdomen	Echogenic contents in lower uterine segment with increased vascularity.	41,068
2.	Amenorrhea+h/o spotting for 1day	Single Gsac with CRL~ 5wks on previous caesarean scar of uterus.no fcp seen	43,872
3.	Amenorrhea	Single G sac with viable fetus of CRL~7weeks on previous caesarean scar.fcp seen.	50,870
4.	Amenorrhea+Pain abdomen	Features of heterotopic pregnancy :one non viable intrauterine G.sac CRL~ 8week sac and another G.sac CRL~9wk on previous cesarean scar. Fcp seen.	66,564
5.	Amenorrhea	Single G.sac CRL~5wk 6days on previous caesarean scar.no fetal node,no fcp	21,658
6.	Ammenorrhea	Single Compressed Gsac CRL ~5week 5days on previous caesarean scar.no fcp.no fetal pole	23,224
7.	Ammenorrhea	Single Gsac like structure CRL~4weeks 2days on previous caesarean scar.no fetal pole seen.	5,453
8.	Amenorrhea+BPV	Single G.sac CRL ~6week 4days on previous caesarean scar.no fcp seen.	21,804
9.	Amenorrhea	Single G.sac CRL~5wk 4days on previous caesarean scar.no fcp seen.	5,853
10.	Amenorrhea+BPV	Single G.sac CRL~6wk 5days on previous caesarean scar.no fcp	8164
11.	Amenorrhea + BPV	Single Gsac with fetal node in lower uterine segment with CRL of 6weeks on previous caesarean scar site.no fcp	1,326
12.	Amenorrhea +BPV	Single Gsac in lower uterine segment~ 10weeks 4days.fcp seen	15,860
13.	Ammenorrhea+BPV	Single G.sac ~ 5weeks in lower uterine segment with a fetal node.	9,192
14.	Ammenorrhea	Single G.sac ~6weeks on previous uterine scar, no fcp	10,003
15.	Ammenorrhea+Pain abdomen	Single G.sac~6weeks in lower uterine segment with fcp seen.	8,586

This table shows that only 5 Patients had no complaints/symptoms at the day of presentation to the hospital.4 patients presented with pain in lower abdomen.6 patients presented with complaints of bleeding per vaginum .Estimated G. age as per TVS was between 4 to 7 weeks with 5 cases showing fetal cardiac activity. Notably, one of the patients in this group had heterotopic pregnancy with non-viable intrauterine G sac. On the day of admission, levels of β-HCG ranged from 1326 to 66,564IU/L.

Table 3: Treatment modalities used and their outcome

Case no.	Initial Treatment	Complications	Management of complications
1	5 doses of MTX f/bfollowed by D & C done	Readmitted for pain abdomen with USG s/o echogenic contents in uterus with increased vascularity.	Laparotomy with excision of scar site was done.
2	2 doses of MTX f/b Laprotomy with excision of scar site with bilateral tubal ligation.	Nil	
3	1dose of MTX f/b Laprotomy with excision of previous caesarean scar site f/b B/L uterine artery ligation.	Intra op bleeding was controlled by B/L uterine artery ligation.	
4	2 doses of MTX f/b Laprotomy with C/C and excision of scar site.		
5	4 doses of MTX f/b laparotomy with excision of scar site with B/L tubal ligation.		
6	2 doses of MTX f/b laparotomy & excision of scar site with B/l tubal ligation.		
7	3 doses of MTX		
8	2 doses of MTX f/b laparotomy & excision of scare site with B/L tubal ligation.		
9	3 doses of MTX		
10	4 doses of Methotrexate		
11	1 doses of MTX		
12	2 doses of MTX f/b laparotomy with excision of scar site .	Scar site haematoma was formed which got resolved by conservative management.	
13	2 doses of MTX		
14	2 doses of MTX.		
15	1 dose of MTX f/b usg guided check curettage.		

All 15 patients were treated medically with Methotrexate. 7 patients underwent laparotomy with excision of scar site pregnancy and 2 patients underwent USG guided check curettage, 6 patients needed only Methotrexate for resolution of pregnancy. Serial β-HCG monitoring was done for all cases. Surgrical management was done in those cases where β-HCG continued to stay high. In all cases where surgical management was needed excision of scar pregnancy was performed and uterus was preserved.

Discussion

In last few decades the rate of caesarean sections has increased drastically that has enlightened us about few complications like CSP which were rarely encountered in the past. In 1978 when the first CSP as a postabortal haemorrhage was reported by Larsen and Solomon, the authors called it as suterine scar sacculus.[8] Development of CSP has many indirectly related risk factors : the number of previous cesarean sections[9], its indications, the time period between the previous cesarean and the present pregnancy. The CSP may end as an abortion if vascular connections are lost while growing, or it may continue to grow gaining new stronger vascular connections leading into a low-lying adherent placenta with or without invasion of nearby organs . Mostly CSP do not cross beyond the first trimester. If progressed to the second or third trimester severe complications occurs. So early diagnosis is more important to avoid serious complications. It's mostly an accidental USG finding, Patients are mostly asymptomatic, very few present with mild painless vaginal bleeding, mild to moderate abdominal pain and it becomes severe if CSP ruptures A patient with a ruptured CSP may collapse at any time. If the condition is not diagnosed on time, a simple dilatation and curettage may result in massive hemorrhage and unexpected complications.

It is mentioned in the literature that up to 72% of caesarean scar pregnancies occur in women who have had 2 or more caesarean deliveries[10] which is consistent with the findings of our study(73.3%). In our study, 11 women had 2 or more caesarean deliveries in history, and 4 women had history of only one caesarean delivery.In one of the study by Bodur et al. concluded that a primary systemic MTX administration was effective for a CSP before 8 weeks of gestational age, a β-HCG concentration of ≤ 12,000 mIU/ml, and negative embryonic cardiac activity [11]. In our study, all of the mentioned criteria were present in the 6 patients who were successfully treated with a primary systemic MTX administration alone, and baseline β-HCG was achieved. In this regard, another study demonstrated that the failure of the MTX treatment was associated with a high β-HCG level, advanced pregnancy, and deep implantation. It has been reported that 25% of patients need additionaltreatment owing to increased β-HCG levels.The β-HCG level was an important prognostic factor in treatment failure[8] However, no specific β-HCG level has been determined to guarantee treatment success[12]. Which is similar to our study as well where we observed that cases having higher β-HCG needed surgical management after initially managed by Methotrexate? In this case series, all patients received initial Methotrexate therapy,6 patients were treated completely with Methotrexate only. 7 patients underwent laparotomy with excision of scar site.2 patients underwent check curettage under ultrasound guidance. One of these two patients reported back to hospital with bleeding P/V and underwent laparotomy owing to very high β-HCG levels.

High treatment rates with preservation of uterus were achieved in all patients in this study. One patient (case no.1) who underwent laparotomy with excision of scar site pregnancy was case of readmission to hospital in view of severe pain abdomen and bleeding PV. She was previously discharged after medical treatment with Methotrexat e followed by C/C and her β-HCG had fallen to tremendous low levels.

The unsuccessful outcome of treatment can be explained by scar histological structure. Such pregnancy is surrounded by fibrous scar rather than by normally vascularized myometrium. Therefore, systemic absorption of local Methotrexate is minute. This also may potentially limit the systemic absorption of the drug and delay complete resorption of the pregnancy[13] There are no guidelines how to manage this kind of ectopic pregnancy. Each particular case is unique. Information about treatment and possible outcomes should be provided to patient.

Conclusion

Early diagnosis and treatment of CSP is essential to prevent maternal morbidity and mortality. Treatment of CSP is individualized, either by surgical or medical approach depending on β-HCG levels and ultrasound findings.

References

1. Timor-Tritsch IE, Monteagudo A, Cali G, Palacios-Jaraquemada JM, Maymon R, Arslan AA, et al. Cesarean scar pregnancy and early placenta accreta share common histology. Ultrasound Obstet Gynecol. 2014;43(4):383–95.
2. Jurkovic D, Hillaby K, Woelfer B et al. First-trimester diagnosis and management of pregnancies implanted into the lower uterine segment Cesarean section scar. Ultrasound Obstet Gynecol 2003; 21: 220–227.
3. Seow K, Huang L, Lin Y et al. Cesarean scar pregnancy: issues in management. Ultrasound Obstet Gynecol 2004; 23: 247–253.

4. Bodur S, Ozdamar O, Kilic S, Gün İ. The efficacy of the systemic meth-otrexate treatment in caesarean scar ectopic pregnancy: a quantita-tive review of English literature. J Obstet Gynaecol 2015; 35: 290–296
5. Fylstra DL (2002) Ectopic pregnancy within a cesarean scar: a review. Obstet Gynecol Surv 57:537–543
6. Jurkovic D, Hillaby K, Woelfer B, Lawrence A, Salim R, Elson CJ (2003) First-trimester diagnosis and management of pregnancies implanted into the lower uterine segment cesarean section scar. Ultrasound Obstet Gynecol. 2003; 21(3):220–7.
7. Ofili-Yebovi D, Ben-Nagi J, Sawyer Eet al.Deficient lower-segment Cesarean section scars: Prevalence and risk factors.Ultrasound Obstet Gynecol2008;31:72–77
8. Lipscomb GH,Givens VM,Meyer NL, Bran D.Comparison of multidose and single-dose methotrexate protocols for the treatment of ectopic pregnancy.Am J Obstet Gynecol.2005;192(6):1844–7.
9. N. Docheva, E.D. Slutsky, N. Borella, R. Mason, J.W.V. Hook, S.S. Patel, The rising triad of cesarean scar pregnancy, placenta percreta, and uterine rupture, Case Rep Obstet Gynecol (2018), 8797643.
10. Osborn DA, Williams TR, Craig BM. Cesarean Scar Pregnancy. Sonographic and magnetic resonance imaging findings, complications, and treatment. J Ultrasound Med. 2012;31:1449-56.
11. Bodur S, Ozdamar O, Kılıc S, Gun I. The efficacy of the systemic methotrexate treatment in caesarean scar ectopic pregnancy: a quantitative review of English literature. J Obstet Gynaecol. 2015;35(3):290–6. 11.
12. Menon S, Colins J, Barnhart KT. Establishing a human chorionic gonadotropin cutoff to guide methotrexate treatment of ectopic pregnancy: a systematic review. Fertil Steril. 2007;87(3):481–
13. 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 center. Human Reproduction. 2004;19(2):278-84.