

Cesarean scar ectopic pregnancy - case series. Diagnosis and treatment at tertiary care hospital

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Abstract

Cesarean Scar Pregnancy is a rare form of ectopic pregnancy with the incidence increasing due to the increased rate of primary cesarean section. It is potentially life-threatening and can cause serious maternal morbidity and mortality if undetected or misdiagnosed. The aim of this case series is to study clinical presentation, diagnosis, and treatment of caesarean scar pregnancy. We studied 10 confirmed cases of cesarean scar pregnancy treated in department of OBGYN at a tertiary care hospital, in western India over a period of 2 years. Maternal age ranged between 25 years to 38 years and gestational age ranged between 6 weeks to 10 weeks. Seven patients presented with symptoms like bleeding per vaginum and/or lower abdominal pain and three patients were asymptomatic. Transvaginal sonography was done for confirmation of diagnosis. In all patients, beta hCG levels were done on the first day. 4 patients were initially treated by medical management but was unsuccessful. Surgical management was done by laparotomy in 9 patients and in 1 patient laparoscopy. Treatment should be individualized depending on severity of symptoms, beta hCG level, patient's condition, and surgeon's experience.

Keywords: Cesarean scar pregnancy, Beta hCG, Ultrasonography

Introduction

Cesarean Scar Pregnancy is a rare form of ectopic pregnancy with the incidence increasing due to the increased rate of primary cesarean section. Incidence of CSP worldwide is 1:2216 of all pregnancies, with a rate of 0.15% in women with a previous cesarean section and a rate of 6.1% of all ectopic pregnancies in women who had at least one cesarean delivery¹. CSP is defined as an ectopic pregnancy in which the gestational sac is implanted into the myometrial tissue of the scar from a previous cesarean section¹. If it is undetected or misdiagnosed, it is potentially life-threatening and can cause serious maternal morbidity from uterine rupture and massive hemorrhage, even maternal death. It can be diagnosed with the help of transvaginal ultrasonography. We have studied ten patients treated to our hospital for CSP between June 2020-April 2022.

Case series

This is a retrospective observational case series done at the department of OBGYN at a tertiary care hospital in western India. 10 confirmed cases of caesarean scar pregnancy were studied between June 2020 to April 2022. Clinical data and findings are presented in below table. A study of clinical presentation, diagnosis,

and treatment modalities was done including age, gravidity, parity, number of previous cs, presenting complaints, serum beta-hCG levels, transvaginal sonographic findings and treatment modality.

Pt's Age (Years)	Gravid a/ Parity	Obstetric History	Gestational Age at Diagnosis (Weeks)	Presenting symptoms	S.BetaHcg level (IU)		Treatment Modality	
					D1	D3	Medical	Surgical
33	G3P2A 0L1	Previous 2 cs, last cs a year ago	7	Bleeding per vaginum and lower abdominal pain	24721	50819	Inj methotrexate IM followed by Inj leucovorin IM given	Laparotomy+obstetric hysterectomy
36	G5P1A 3L1	Prev cs 6 years back	Fetus-1:8 weeks 2 days Fetus-2:6 weeks 5 days (Twins)	Asymptomatic	10000			Laparotomy-Csp removal and suturing
34	G3P2A 0L2	Prev 2 cs, last cs 8 years back	6	Spotting pv +abdominal pain	10000	57798	Inj methotrexate IM followed by Injleucovorin IM	Laparotomy Csp removal and suturing
27	G3P2A 0L2	Prev 2 cs, Last cs 2 years back	6	Bleeding per vaginum	9280	12120	Inj methotrexate IM followed by Inj leucovorin IM	Laparotomy+obstetric hysterectomy
25	G2P1A 0L1	Prev cs 2 years back	7	Abdominal pain	22403			Laparotomy-Csp removal and suturing
30	G3P1A 1L1	1fts 4 years back	8	Asymptomatic	9200			Laparotomy-Csp removal and suturing
36	G4P2A 1L2	Prev 2 cs, last cs 5 years back	6	Asymptomatic	9145			Laparotomy-Cspremoval+suturing
38	G2P1A 0L1	Prev cs,6 years back	7weeks 6 days	Bleeding PV	24312			Laprotomy+csp removal and suturing
35	G4P2A 1L2	Prev 2 cs, Last cs 2 years back	6 weeks 5 days	Bleeding PV	15768			Laprotomy+csp removal and suturing
31	G2P1A 0L1	Prev cs 4 years back	10 weeks 1 day	Abdominal pain	39812			Laparoscopic cspremoval+suturing

[Dose of inj MTX- 1 mg/kg IM, Dose of inj leucovorin-0.1 mg/kg IM]

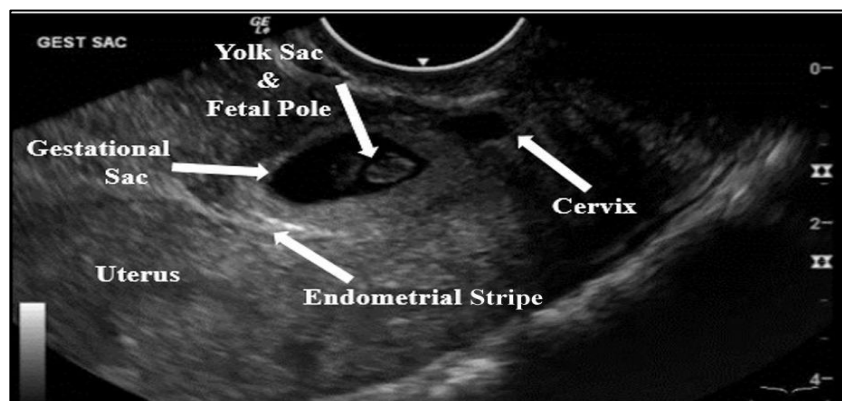
Maternal age ranged between 25 years to 38 years and gestational age ranged between 6 weeks to 10 weeks. Five patients had history of previous 1 c-section and 5 had a history of previous 2 c-sections. Three patients already came with transvaginal sonography reports suggestive of CSP and 7 patients presented with

symptoms like bleeding per vaginum and/or lower abdominal pain. Transvaginal sonography was done for all these patients for confirmation of diagnosis. The most common presentation of patients was bleeding per vaginum followed by lower abdominal pain and spotting per vaginum. Required investigations were done in all patients. SerumbetaHCG levels were done in all patients on day one and it was between 9145IU to 39812 IU. Three patients were initially medically managed by giving inj methotrexate 1 mg/kg im followed by inj leucovorin 0.1 mg/kg im and serum beta hCG level was repeated on day three. Surgical management was done by laparotomy in 9 patients and by laparoscopy in 1 patient. Evacuation of the gestational sac from the previous scar site of cesarean section followed by suturing of the scar site with vicryl 2347 no 1 was done in eight patients. Two patients ended up with hysterectomy. Written and informed consent for obstetric hysterectomy as and when required was taken from all patients and their relatives prior to the surgery. Postoperative period was uneventful in all patients.

Discussion

CSP is challenging since it is very rare with incidence reported within the range of 1:1800 to 1:2216 (0.04% to 0.05%) of all pregnancies². There are many case reports in literature but only a few case series. Incidence of CSP is rising because of increase in number of cesarean deliveries. There are two types of CSP, Endogenous in which progression of the gestational sac to the cervicoisthmicspace or uterine cavity is possible which could result in a viable pregnancy but with a high risk of bleeding at the placental site, and Exogenous type where deep invasion of a scar defect with progression of the gestational sac towards urinary bladder and abdominal cavity occurs which could be complicated with uterine rupture and bleeding early in pregnancy^{3,4}. Most common symptoms of CSP are vaginal bleeding, lower abdominal pain, and spotting per vaginum. In this case series 3 patients were asymptomatic. Diagnosis of CSP was confirmed by transvaginal sonography in all patients. As there is an increasing number of cesarean sections and the availability of ultrasonography for early pregnancy assessment, diagnosing CSP in the early weeks of pregnancy is possible. If CSP is undiagnosed or misdiagnosed as low implanted pregnancy, it may lead to life-threatening complications like massive hemorrhage, uterine rupture, hypovolemic shock and even maternal death. In November 2016 the RCOG published criteria for diagnosing CSP using trans-vaginal ultrasound (TVUS)⁵

- Empty uterine cavity
- Gestational sac or solid mass of trophoblast embedded at site of caesarean scar
- Empty endocervical canal
- Thin or absent layer of myometrium between gestational sac and bladder / anterior uterine wall. Evidence of prominent circulation on Doppler examination



CSP must be differentiated from other conditions like cervicoisthmic pregnancy and different types of miscarriages and cervical pregnancy as their management and outcome differ. It is mentioned in literature that up to 72% cesarean scar pregnancies occur in patients who had two or more cesarean deliveries⁶. In our study, 5 patients had two cesarean deliveries and 5 patients had one cesarean section.

Different management modalities are available based on gestational age, presence of cardiac activity of embryo, evidence of myometrial deficiency, and patient's hemodynamic status. Termination of pregnancy in first trimester is strongly recommended due to its poor outcome. There are two possible ways to manage CSP-medical and operative. Medical management with local/systemic administration of methotrexate can be done in less than 7 weeks of gestational age which requires very close monitoring with TVS and beta

hCG level.⁷In spite of a standard single dose of MTX 50 mg/m² or 1 mg/kg has proven to be useful, it has been shown that more than 50% of patients need a secondary procedure for successful treatment of CSP. The risk of rupture and hemorrhage is high in medical treatment. Surgical management of CSP in the first trimester is safe, effective, having less blood loss with evidence of preservation of future fertility potential and low recurrence rate^{3,7}. It includes excision of the gestational tissue by hysterotomy through laparoscopy/ laparotomy followed by suturing of uterine scar. Hysterectomy can be done in patients with excessive uncontrolled bleeding not managed by suturing. Other treatment options include transcervical resection by hysteroscopy, uterine artery embolization or placement of double balloon catheter. Uterine curettage for CSP is not recommended as there is a risk of excessive bleeding or perforation of the uterus. In this study, three patients were given single dose of inj. Methotrexate of which one had complained of severe bleeding per vaginam and two patients had rising beta hCG titre on third day so laparotomy was done in all the three patients. Two patients underwent obstetric hysterectomy because of torrential bleeding and one patient was successfully managed by laparotomy by excision of trophoblastic tissue and suturing of the uterine scar. Out of other seven patients, laparotomy was done in six and one patient was managed by laparoscopy. In a case series published by Ija Lisovaja, all ten patients were asymptomatic at the time of diagnosis, and medical management was done but nine out of ten patients finally ended up in hysterectomy on 19th day of stay in hospital due to rising beta hcg levels and only in one case excision of scar pregnancy was performed and uterus was preserved.² So treatment should be individualized depending on severity of symptoms, patient's condition and surgeon's experience and expertise.

Conclusion

Though rare, incidence of cesarean scar pregnancy is rising over recent years because of increase in number of cesarean deliveries. Early diagnosis and timely management of such patients are vital to prevent morbidity and mortality and preserve optimal fertility. Every pregnant woman with history of a cesarean delivery should be screened early in the first trimester preferably during 6-8 weeks of pregnancy to rule out this life-threatening complication. Diagnosis can be achieved with transvaginal ultrasound and doppler imaging. Treatment should be individualized. Termination of pregnancy in the first trimester is strongly recommended. Excision of gestational tissue followed by suturing of uterine incision by laparotomy/laparoscopy is performed when the hCG levels do not adequately decline or when the patient becomes symptomatic after medical or expectant management. Hysterectomy can be life saving in torrentially bleeding patients. Nevertheless, more studies are required to prove nonsurgical modalities' efficiency, safety and reproductive outcome.

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