

# Caesarean Scar Ectopic Pregnancy: 11 Case-Series Study in 2 Years at a Tertiary Care Hospital

Ammara Niaz<sup>1</sup>, Mubashra Naz<sup>2</sup>, Sadaf Naeem<sup>3</sup>, Tasnim Tahira<sup>4</sup>, Anees Fatima<sup>5</sup>, Ayesha Khalid<sup>6</sup>

- <sup>1</sup> Assistant Professor, Department of Gynecology & Obstetrics, Faisalabad Medical University, Faisalabad Pakistan  
*Script writing*
- <sup>2</sup> Professor, Department of Gynecology & Obstetrics, Madinah Teaching Hospital, Faisalabad Pakistan  
*Literature review, Final layout*
- <sup>3</sup> Senior Registrar, Department of Gynecology & Obstetrics, Allied Hospital, Faisalabad Pakistan  
*Data collection*
- <sup>4</sup> Professor, Department of Gynecology & Obstetrics, Faisalabad Medical University, Faisalabad Pakistan  
*Proof reading, Concept*
- <sup>5</sup> Associate Professor, Department of Gynecology & Obstetrics, Madinah Teaching Hospital, Faisalabad Pakistan  
*Contribution in writing of discussion*
- <sup>6</sup> Senior Registrar, Department of Gynecology & Obstetrics, Allied Hospital, Faisalabad Pakistan  
*References layout*

## CORRESPONDING AUTHOR

Dr. Ammara Niaz

Assistant Professor, Department of Gynecology & Obstetrics, Faisalabad Medical University, Faisalabad Pakistan  
Email: drammaraniazrehman@gmail.com

Submitted for Publication: 24-07-2023  
Accepted for Publication: 19-03-2024

**How to Cite:** Niaz A, Naz M, Naeem S, Tahira T, Fatima A, Khalid A. Caesarean Scar Ectopic Pregnancy: 11 Case-Series Study in 2 Years at a Tertiary Care Hospital. *APMC* 2024;18(1):22-25. DOI: 10.29054/APMC/2024.1343

## ABSTRACT

**Objective:** The objective of this study was to evaluate the management, clinical features and outcome of caesarean scar pregnancies. **Study Design:** Descriptive case series. **Settings:** Department of Obstetrics & Gynecology, Faisalabad Medical University, Faisalabad Pakistan. **Duration:** Two years from 1<sup>st</sup> June 2019 to 31<sup>st</sup> May 2021. **Methods:** Medical records of the women with diagnosis of CSP were retrieved. The study included cases with gestational ages ranging from 5 weeks to 9 weeks who were referred to us. All the information regarding demographics, age, gestational age, symptoms at presentation, number of Caesarean sections, obstetric and gynecological history, ultrasound images, treatment given to the patients and hospital stay were retrieved from charts of the patients. **Results:** In this study, 11 cases of CSP were treated. One patient had pain in lower abdomen, two of 11 patients had no symptoms, 3 had lower abdominal pain with vaginal bleeding and 5 had vaginal bleeding only. All patients had history of caesarean sections. Gestational age of these patients was from 5 to 9 weeks. Five patients were treated with Methotrexate (MTX), 3 underwent emergency laparotomy and 3 were managed conservatively. **Conclusion:** Early diagnosis and management of patients having caesarean scar ectopic pregnancies can reduce the complications associated with this condition.

**Keywords:** Caesarean scar pregnancy (CSP), Caesarean section (CS), maternal morbidity.

## INTRODUCTION

Caesarean scar pregnancy (CSP) is the rarest type of ectopic pregnancy. It is characterized by abnormal implantation of embryo in myometrium and fibrous tissues of a previous scar in uterus mostly after a caesarean section (CS).<sup>1</sup> It is a serious condition with frequency of 1/1800 to 1/2500 of total pregnancies. This rise is attributed partly to the increase in the occurrence of primary and repeat caesarean sections and also to better awareness and improved transvaginal ultrasound (TVUS) diagnosis.<sup>2</sup>

The existing literature is showing multiple risk factors for CSPs. Women with multiple CS are at higher (72%) risk of scar implantation because of enlarged scar surface area.<sup>2</sup> Other factors such as uterine interventions e.g. hysteroscopy, metroplasty, dilatation and curettage and

myomectomy have also been reported to cause scar pregnancies.<sup>3,4</sup> Almost 40% of patients remain asymptomatic. The most common clinical presentations are painless vaginal bleeding, abdominal discomfort with vaginal bleeding and hemodynamic instability due to rupture with intra-abdominal bleeding.<sup>4</sup> It is evident from the literature that up to 13.6% of CSPs are incorrectly diagnosed as inevitable miscarriages with a low-lying sac and cervical pregnancies. Treatments such as surgical evacuation for incorrectly diagnosed cases can lead to considerable hemorrhage resulting in hysterectomy.<sup>5</sup> In wake of all these severe problems, precise and dependable criteria for diagnosis is required.<sup>6</sup> There is still no unified treatment guideline for CSP, however, there is a consensus that the pregnancy should be terminated as soon as it is confirmed. Generally, the management options include medical management with

methotrexate (MTX) treatment (systemic and / or local), uterine artery embolization, surgical evacuation, Laparoscopic resection and hysteroscopic management. Expectant management is not generally recommended.<sup>7</sup>

The rate of CSP is increasing due to the increase in C-section deliveries. In Pakistan the ratio of births delivered by C-section has increased tremendously from 14% in 2012-13 to 22% in 2017-18. Moreover, the rate of C-section deliveries is higher in private facilities (38%) than in public facilities (25%).<sup>8</sup>

The rationale of this study was that Caesarean scar ectopic pregnancy is serious condition with an increasing incidence. Almost 40% of its patients remain asymptomatic. Up to 13.6% patients are misdiagnosed as missed miscarriages. Late diagnosis / misdiagnosis can lead to serious complication. Whereas, early and accurate diagnosis in first trimester can avoid these complications and help to rescue the fertility.<sup>9,10</sup> This study aimed to diagnose and manage CSP early to minimize life-threatening complications.

## METHODS

This descriptive case series was conducted at the Department of Obstetrics & Gynecology, Faisalabad Medical University & affiliated hospital, Faisalabad Pakistan. The duration of the study was two years from 1<sup>st</sup> June 2019 to 31<sup>st</sup> May 2021.

By using Convenient sampling technique, Women with CSPs who were treated in our hospital were the sample size of the study.

Patients with caesarean scar pregnancy confirmed with trans-vaginal ultrasound examination and gestational age of 5 to 9 weeks were included in the study.

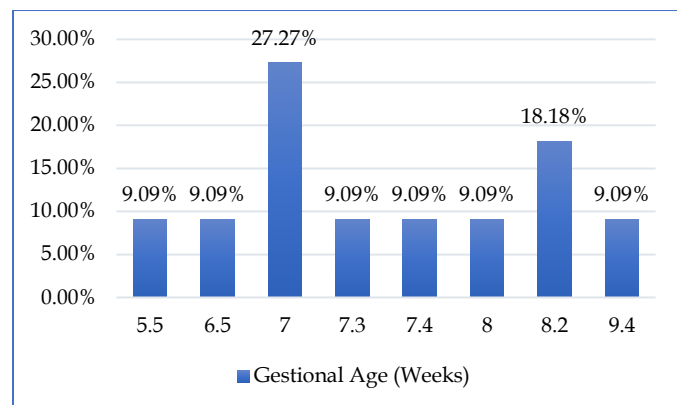
The study was approved by the Institutional Review Committee of Faisalabad Medical University. After approval, medical record of the women with diagnosis of CSP was retrieved. The study included cases with gestational ages of 5 weeks to 9 weeks who were presented and diagnosed in this duration. All the information regarding demographics, age, gestational age, symptoms at presentation, number of c-sections, obstetric and gynecologic history, ultrasounds images, treatment given to the patients, days in hospital were retrieved from charts of the patients.

The data was entered and analyzed using SPSS v.20. Percentage and frequency was calculated for qualitative variables such as parity, Clinical presentation. For quantitative variables like age, no. of previous LSCS, mean  $\pm$ SD was calculated. Effect modifiers like age, parity etc. were stratified to find out the effect on the outcome of the treatments.

## RESULTS

Age of the women was 22 years to 30 years, mean age of  $26 \pm 2.6$  years. Gestational age ranged from 5.4 to 9.4 weeks with mean gestational age of  $7.4 \pm 1.02$ .

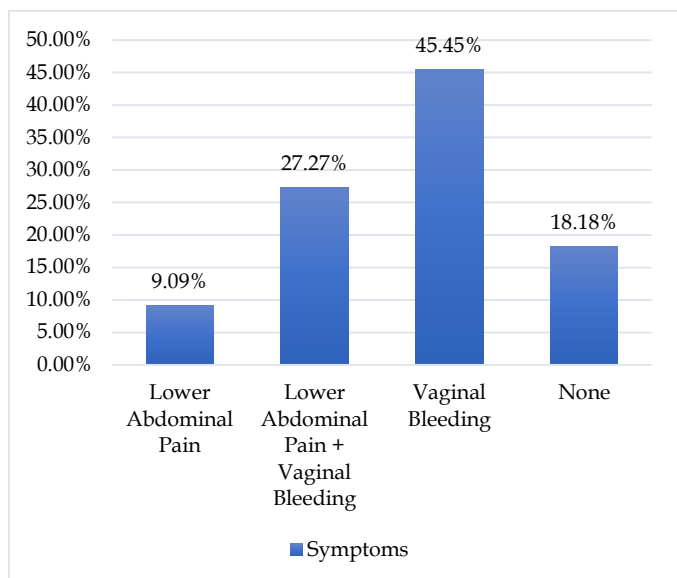
**Figure 1: Graph showing gestational age of the patients**



Gynecological data of the women showed that vaginal bleeding was the most common complaint at the time of diagnosis with 5 (45.5%) women presenting with it, while 3 (27.3%) women presented with vaginal bleeding as well as lower abdominal pain. History of C-sections showed that 4 (36.3%) women previously had 2 c-sections, 3 had 1 and 3 had 3 c-sections previously. On the day of admission, 5 (45%) had beta-human chorionic gonadotrophin (b-hCG) level less than 1500 IU/l. Gynecological data is shown in table 1.

**Table 1: Gynecological data of the patients (n=11)**

Variables		Frequency (Percentage)
Clinical Presentations	Lower abdominal Pain	1 (9.1%)
	Lower abdominal Pain & Vaginal bleeding	3 (27.3%)
	Vaginal bleeding	5 (45.5%)
	None	2 (18.2%)
C-Sections	1	3 (27.3%)
	2	4 (36.4%)
	3	3 (27.3%)
	4	1 (9.1%)
b-hCG IU/l	<1500	6 (54.5%)
	<3000	5 (45.5%)
Parity	2	2 (18.2%)
	3	4 (36.4%)
	4	4 (36.4%)
	5	1 (9.1%)
Total		11 (100.0%)

**Figure 2: Clinical presentations of patients**

Five (45.5%) patients were treated with methotrexate injection. Out of these 2 had a follow up to 2 months while others had follow-up in 3 months when their  $\beta$ HCG value became less than 5mIU/mL and TVS finding became normal. Three of 11 patients underwent emergency laparotomy as they were initially misdiagnosed as missed miscarriage and on evacuation and curettage, they experienced excessive bleeding. Three patients underwent expectant management as their  $\beta$ HCG remained normal and were asymptomatic (Table 2).

**Table 2: Management / treatment of the Patients and hospital stay**

Treatment	Frequency (Percentage)
MTX	5 (45.5%)
Laparotomy	3 (27.3%)
Expectant	3 (27.3%)
Total	11 (100%)

## DISCUSSION

To the best of our knowledge, limited data mostly based on case reports is available on CSP in Pakistan. This is first study from Faisalabad that is reporting 11 cases of CSP in tertiary care settings. Vaginal bleeding (45.45%) and lower abdominal pain (27.27%) were the most common symptoms present in women at the time of diagnosis. The results of our study are in accordance with other studies.<sup>11</sup> The condition often is incorrectly diagnosed as missed abortion, spontaneous abortions in progress or ectopic pregnancy.

Literature shows that up to 72% of CSPs occur in women with 2 or more caesarean deliveries.<sup>12</sup> Results of our study showed all women had history of two or more C-sections. CSP cases are managed with two methods: operative and

conservative.<sup>13</sup> Specific guidelines to manage ectopic pregnancy are still missing.<sup>14</sup>

Expectant management is not generally recommended for the treatment of CSP<sup>7</sup> but in our study 3 of 11 patients underwent expectant management because they were vitally stable with low levels of  $\beta$ HCG. Moreover, they were ready to have follow up. Their  $\beta$ HCG values dropped to normal in 2 months.

In last two decades, considerable increase in Caesarean delivery (CD) rate led to enhance the frequency of complications. These are postpartum hemorrhage, hysterectomy, rupture of uterus, abnormally invasive placenta, ectopic pregnancy and infertility. Implantation of the gestational sac in the previous scar is an unusual and exceptional condition that can arise in a subsequent pregnancy following CD. If left untreated, CSP may lead to severe hemorrhage, uterine rupture and the need for hysterectomy.<sup>15</sup> There has been an exceptional increase in its incidence. First case was reported in 1978. Only 19 cases were reported in literature until 2001, 161 cases until 2007 and more than 1000 cases until 2017.<sup>16</sup> In Pakistan, rapid increase in the incidence of c-section especially at clinics with insufficient facilities is the major cause of the increased rate of CSP. For 16% of total births in during 2014-2018, the decision to deliver by C-section was made before the onset of labour pains.<sup>8</sup> World Health Organization, in its statement regarding the rate, effective use, and indications for C-sections suggested that the rates should not be greater than 10% or lower than 5%, as both extremes are associated with adverse maternal and neonatal outcomes.<sup>17</sup>

## CONCLUSION

Early diagnosis, early care and expertise are important to prevent maternal mortality and morbidity. The most frequent signs of CSP are lower abdominal pain and vaginal bleeding. Early diagnosis is possible in this case with early booking to antenatal clinic with expert TVS. The prevalence of CSP is rising due to a rapid increase in the rate of caesarean section.

## LIMITATIONS

The key limitation of the study is its retrospective design. However, a large number of women with CSP are identified.

## SUGGESTIONS / RECOMMENDATIONS

In Pakistan, there is a need to make some policy guidelines to control the C-section deliveries especially at private clinics.

## CONFLICT OF INTEREST / DISCLOSURE

None.

## ACKNOWLEDGEMENTS

Special thanks to all group members.

## REFERENCES

1. Majangara R, Madziyire MG, Verenga C, Manase M. Cesarean section scar ectopic pregnancy - a management conundrum: a case report. *J Med Case Reports*. 2019;13(1):137.
2. Jurkovic D. Cesarean scar pregnancy and placenta accreta. *Ultrasound Obstet Gynecol*. 2014;43(4):361-362.
3. Gurel S, Sarikaya B, Gurel K, Akata D. Role of sonography in the diagnosis of ectopic pregnancy. *J Clin Ultrasound JCU*. 2007;35(9):509-517.
4. Wang C-B, Tseng C-J. Primary evacuation therapy for Cesarean scar pregnancy: three new cases and review. *Ultrasound Obstet Gynecol Off J Int Soc Ultrasound Obstet Gynecol*. 2006;27(2):222-226.
5. Timor-Tritsch IE, Monteagudo A. Unforeseen consequences of the increasing rate of cesarean deliveries: early placenta accreta and cesarean scar pregnancy. A review. *Am J Obstet Gynecol*. 2012;207(1):14-29.
6. Sel G, Sucu S, Harma M, Harma M. Successful management of cesarean scar pregnancy with vacuum extraction under ultrasound guidance. *Acute Med Surg*. 2018;5(4):358-361.
7. Maheux-Lacroix S, Li F, Bujold E, Nesbitt-Hawes E, Deans R, Abbott J. Cesarean Scar Pregnancies: A Systematic Review of Treatment Options. *J Minim Invasive Gynecol*. 2017;24(6):915-925.
8. Pakistan Bureau of Statistics (2018). National Health Accounts Pakistan 2015-16. Government of Pakistan Statistics Division. Retrieved from [http://www.pbs.gov.pk/sites/default/files//NHA-Pakistan%202015-16%20Report\\_0.pdf](http://www.pbs.gov.pk/sites/default/files//NHA-Pakistan%202015-16%20Report_0.pdf)
9. Rotas MA, Haberman S, Levгур M. Cesarean scar ectopic pregnancies: etiology, diagnosis, and management. *Obstet Gynecol*. 2006;107(6):1373-1381.
10. Patel MA. Scar Ectopic Pregnancy. *J Obstet Gynaecol India*. 2015;65(6):372-375.
11. Lisovaja I. Cesarean scar pregnancy: a 10 case series. *Int J Reprod Contracept Obstet Gynecol*. 2017;5(7):2413-2417.
12. Osborn DA, Williams TR, Craig BM. Cesarean scar pregnancy: sonographic and magnetic resonance imaging findings, complications, and treatment. *J Ultrasound Med Off J Am Inst Ultrasound Med*. 2012;31(9):1449-1456.
13. Gupta P, Huria A, Kaur D, Mehra R. Caesarian Scar Pregnancy - A Diagnostic Dilemma. *JNMA J Nepal Med Assoc*. 2016;54:88-90.
14. Shafqat G, Khandwala K, Iqbal H, Afzal S. Cesarean Scar Pregnancy: An Experience of Three Cases with Review of Literature. *Cureus*. February 2018.
15. Cali G, Timor-Tritsch IE, Palacios-Jaraquemada J, et al. Outcome of Cesarean scar pregnancy managed expectantly: systematic review and meta-analysis. *Ultrasound Obstet Gynecol Off J Int Soc Ultrasound Obstet Gynecol*. 2018;51(2):169-175.
16. Jayaram PM, Okunoye GO, Konje J. Cesarean scar ectopic pregnancy: diagnostic challenges and management options. *Obstet Gynaecol*. 2017;19(1):13-20.
17. WHO | WHO statement on caesarean section rates. WHO. [http://www.who.int/reproductivehealth/publications/maternal\\_perinatal\\_health/cs-statement/en/](http://www.who.int/reproductivehealth/publications/maternal_perinatal_health/cs-statement/en/). Accessed March 11, 2021.