



THE EFFECT OF BIRTH SPACING AND TIMING OF PREVIOUS CAESAREAN SECTION ON THE SCAR INTEGRITY IN CASES OF POST-CAESAREAN PREGNANCY – AN OBSERVATIONAL STUDY

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ABSTRACT:

Background: This retrospective observational study investigates the effect of birth spacing and timing of previous caesarean sections, on uterine scar integrity in post-caesarean pregnancies. Scar dehiscence is asymptomatic in 48% of patients and thus is a serious complication because if not predicted, it can lead to uterine rupture.

Materials and Methods:

The study conducted at the Government General Hospital, Eluru, has analysed 135 women with repeat C-sections using inpatient records and statistical analysis in SPSS version 16.0.

Results:

Uterine scar dehiscence was identified in 47% of cases, with a significant association between short birth spacing (<2 years) and higher dehiscence rates (57.7%) compared to longer intervals (>2 years, 21.1%; $p = 0.0001$). No significant association was found with the number of prior C-sections or whether the prior delivery was elective or emergency. These findings highlight that inadequate birth spacing remains a critical risk factor for uterine scar dehiscence, underscoring the need for proper counselling on optimal birth spacing to reduce maternal morbidity in repeat caesarean sections.

Key words: Caesarean section, birth spacing and uterine scar dehiscence

INTRODUCTION:

Caesarean section is defined as the birth of a fetus via laparotomy and then hysterotomy (Williams Obstetrics). Most common C-section indications are prior caesarean delivery, dystocia, fetal jeopardy and abnormal fetal presentation. 80 to 90% of women with previous caesarean delivery are delivered by repeat elective caesarean delivery in subsequent pregnancies. VBAC incidence has decreased from 28 to 8%. Previous caesarean section is the most important risk factor for both

uterine scar rupture and scar dehiscence. Uterine scar dehiscence was considered only when diagnosed and recorded in the operative report directly by the surgeon.

OBJECTIVES:

1. To know the effect of birth spacing on scar integrity in post-caesarean pregnancy.
2. To know the effect of the timing of the previous caesarean section on the scar integrity in the post-caesarean pregnancy

METHODOLOGY:

Study design: Retrospective Observational Study.

Study setting: Government General Hospital, Eluru.

Study population: 135 cases of antenatal pregnant women with post caesarean pregnancy, who got admitted in MCH block in GGH, ELURU over a period of two months.

Inclusion criteria: All cases with repeat LSCS – Elective and Emergencies

Exclusion criteria:

1. Cases with h/o myomectomy, hysterotomy and h/o incision on uterus other than LSCS.
2. Failed TOLAC (Trial of Labour After Caesarean Section)
3. Major fetal abnormalities
4. Abnormally invasive placenta
5. Patients who did not give consent.

Method of Collection of Data:

In patient data and discharge case sheets from MRD section.

Ethical consideration: This study was approved by Institutional Ethical Committee of Siddhartha Medical college, Vijayawada (Mentor college). Written informed consent was taken from all the participants.

Statistical Analysis: The collected data will be entered and analysed using the Statistical Package for Social Sciences (SPSS) version 16.0, and results will be derived based on objectives. The characteristics of the study participants will be summarised using frequencies and percentages. The Chi-square test is used to make comparisons between categorical variables and outcomes. P-value < 0.05 will be considered as Statistically significant.

RESULTS:

Table-I

Previous LSCS	Intact scar	Dehiscence	Total	P value
Emergency LSCS	51	51	102	
Elective LSCS	20	13	33	
Total	71	64	135	0.29

Key findings :

Out of 135 cases, 102 cases are with previous emergency LSCS and 33 cases are with previous elective LSCS. Out of 102 previous emergency LSCS, 51 cases had intact scar and 51 cases had scar dehiscence. It's p-value is 0.29, which is not significant as +ve P-value is > 0.01.

Table-II

Previous LSCS	Intact scar	Dehiscence	Total	P value
One LSCS	69	58	127	
Two LSCS	02	06	08	
Total	71	64	135	0.15

Key findings :

Out of 135 cases, 127 cases had one previous LSCS and 8 cases had two previous LSCS. Out of 127 cases with one previous LSCS 69 patients had intact scar and 58 patients had scar dehiscence. Out of 8 cases, 2 patients had intact scar and 6 cases had scar dehiscence. It's p value is 0.15 which is not significant.

Table-III

Birth spacing	Intact scar	Scar dehiscence	Total	P value
< 2 years	41	56	97	
>2 years	30	8	38	
Total	71	64	135	0.0001

Key findings :

Out of 135 cases, 97 cases had birth spacing <2yrs and 38 cases had birth spacing >2yrs. 56 cases had scar dehiscence out of 97 cases with birth spacing <2yrs. Out of 38 cases with >2yrs, 8 cases had scar dehiscence. It's p value is 0.0001, which is highly significant value.

Table-IV

H/o previous pregnancy	Intact scar	Scar dehiscence	Total	P value
Previous term pregnancy	70	61	131	
Previous preterm pregnancy	01	03	04	
Total	71	64	135	0.261

Key findings :

Out of 135 cases, 131 cases are with previous term pregnancy and 4 cases are with previous preterm pregnancy. Out of 131 cases 61 had scar dehiscence and 70 cases with intact scar. Out of 4 cases with previous preterm pregnancy, 3 cases had scar dehiscence. Its p value is 0.261. The result is not significant as $p < 0.05$.

Summary of results :

Scar dehiscence was detected in 64 cases out of 135. Out of 33 elective cases, scar dehiscence was seen in 13 cases and out of 102 emergency cases, 51 cases had scar dehiscence. Out of 97 cases having birth spacing <2years, 56 cases have scar dehiscence. Out of 135 cases, 127 cases are with one previous LSCS, and 8 cases are with previous caesarean sections. 58 cases have scar dehiscence in one previous c-section, when compared to 06 cases of twice previous c-sections

DISCUSSION:

Uterine scar dehiscence and Uterine rupture are complications of previous caesarean section. Uterine rupture is defined as complete separation of all layers of the uterine wall, and Uterine dehiscence is defined as the disruption of muscle layers with intact serosa. Incidence of scar dehiscence varies from 0.3% to 19.4%. This discrepancy is due to the inconsistency of the standardised definition of uterine scar dehiscence. Scar dehiscence is influenced by certain factors like parity, gestational age, birth spacing, birth weight and phase of labour at the time of caesarean

delivery, either Elective or Emergency. There are several complications associated with Uterine Rupture/ Dehiscence, such as severe anaemia, increased need for blood transfusions, poor wound healing, prolonged hospital stay and increased morbidity.

Scar dehiscence incidence in India in 2024 is 21.5%(National Family Health Survey). In our study, out of 135 repeat cesarean section cases, 64 cases had scar dehiscence. Bujold et al reported that 10.5% of dehiscence occurred in patients with birth spacing of <24 months compared to 3% after 24 months. In Natasha et al study scar dehiscence was detected in 65% of cases with birth spacing <18 months. In our study, 41.4% of dehiscence occurred in patients with birth spacing of <24 months compared to 5.9% after 24 months. This finding may be related to the time needed for proper scar healing. Unlike Natasha et al studies, who found that higher parity was associated with higher rates of dehiscence, parity in our study has no effect on uterine scar dehiscence. However, in our study, the timing of previous caesarean delivery did not have any profound effect on scar integrity.

CONCLUSION:

Uterine scar dehiscence is common when the birth spacing is <2 years. As birth spacing has profound effect on uterine scar dehiscence, awareness should be created for adequate birth spacing, through media advertisements and by distributing IEC materials. Temporary contraceptive methods usage should be promoted in eligible couple through Anganwadi workers, Asha workers and Volunteers.

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