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Original Research Article

Intra-operative uterine scar condition and fetomaternal outcome in patients of previous lower segment caesarean section (LSCS) with scar tenderness

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ABSTRACT

Background: During past few years, there is increasing trend in trial of labor in cases of previous lower segment caesarian section (LSCS). It needs vigilant approach in identifying signs and symptoms of giving way of previous scar. This study is to see the intra-operative uterine scar condition and feto-maternal outcome in patients of previous LSCS with scar tenderness.
Methods: This is a prospective study done in Safdarjung hospital, New Delhi. It includes 120 patients of previous lower segment caesarian section with scar tenderness operated as emergency cases over a period of one year. It excludes elective repeat LSCS.
Results: During this period repeat emergency LSCS was done in 862 cases and scar tenderness was seen in 120 cases (13.92 %). Out of 120 cases enrolled for the study intra-operative scar was intact in 69 cases (57.5%). Scar was thinned out in 27 cases (22.5%). Scar dehiscence was found in 21 cases (17.5%). Rupture occurred in 3 cases (2.5%) out of which 2 were Fresh still births. NICU admission was done in 11 cases (9.17%). 1 neonatal death occurred. No maternal death was recorded. Average hospital stay was 6 days. Blood transfusion was needed in 23 cases (19.2%).
Conclusions: Scar tenderness is a very important tool for predicting scar integrity. All cases of previous LSCS should have institutional delivery.

Keywords: Lower segment caesarian section (LSCS), Scar tenderness, Trial of labor after caesarian (TOLAC), Vaginal birth after caesarian section (VBAC)

INTRODUCTION

Once there was a dictum that 'once a C-Section, always a C-Section'.[1] This does not hold true these days. In United Kingdom, the primary cesarean rate is around 16%, while the repeat cesarean rate is as high as 67%. 10% of the obstetric population has experienced prior cesarean delivery globally.[2] Indian women are also facing the similar rate (10.6%).[2] By decreasing the caesarian section on maternal request and repeat cesarean delivery, a check on rising caesarean section (CS) rate can be kept.[3] To achieve this, Vaginal Birth after Caesarean Section (VBAC) is considered safer than repeat elective CS in a carefully selected population with improved maternity care and institutional delivery for a previous caesarean section.[4]

The reported success of VBAC varies from 56-80% and is dependent on number of ante-partum and intra-partum factors.[5] However, vaginal birth after CS is not

completely complication free and has the inherent risk of scar rupture, which is a catastrophic event. The low transverse incision has approximately 0.2%–0.5% incidence of uterine rupture with VBAC.[6]

For success of VBAC, scar rupture should be anticipated. Use of obstetric risk assessment before trial of scar, continuous electronic fetal heart rate monitoring and intrauterine pressure monitoring during labor will help in anticipation.[3]

Clinically scar rupture can be suspected in cases of fetal distress or non-reassuring fetal heart rate, maternal tachycardia, severe abdominal pain persisting between contractions, scar tenderness and excessive vaginal bleeding. Late signs include cessation of uterine activity, hematuria, loss of station of the presenting part and maternal shock.[6]

The subject of the delivery of a woman after a previous one cesarean section remains controversial. However, we should keep in mind that patients with successful trial of labor experience fewer complications like blood transfusions, postpartum infections and no increase in perinatal mortality as compared to those with planned repeat caesarean delivery.[1]

The American College of Obstetricians and Gynecologists (ACOG) explains that "at an individual level VBAC is associated with decreased maternal morbidity as well as decreased risk of complications in further pregnancies. At a population level, VBAC also is associated with a decrease in the overall cesarean delivery rate.".[7] The aim of this study was to see the intra-operative uterine scar condition in patients of previous lower segment caesarian section with scar tenderness underwent repeat c- section and feto-maternal outcome.

METHODS

A prospective study was conducted over a period of one year in the Department of Obstetrics and Gynecology, Vardhman Mahavir Medical College and Safdarjung Hospital, New Delhi. All the eligible candidates (previous one cesarean for non-recurrent cause with cephalic presentation and spontaneous labor at term) after detailed assessment and informed written consent for vaginal birth after caesarian section (VBAC) were given trial of labor after caesarian (TOLAC). Labor was monitored by assessing maternal and fetal condition. Maternal parameters observed were general condition, pulse, blood pressure, uterine contractions, scar tenderness, vaginal bleeding and cervical changes. Fetal heart rate monitoring was done by intermittent auscultation every 30 minutes in the first stage and every 15 minutes in the second stage, followed by continuous cardiotocography where required. Scar tenderness was elicited by pressing below and behind the pubic symphysis with ulnar border of right hand in between uterine contractions while engaging the woman in conversation and noting for a visible wince on face. Trial of labor after caesarian (TOLAC) was terminated and patient were taken for emergency caesarian section in cases of scar tenderness, unexplained maternal tachycardia, fresh vaginal bleeding, fetal heart rate abnormalities and non-progress of labor. The patients in who repeat caesarian section was done for scar tenderness have been included in this study. Elective repeat LSCS were excluded from the study.

Intra operative uterine scar condition was evaluated in terms of scar rupture, scar dehiscence and thinned out scar. Scar rupture was defined by giving way of the scar with the fetus in the abdominal cavity. Dehiscence was defined as a defect in the lower segment at the scar site with fetus inside the uterus. Thin scar was defined as a thin intact scar on lower uterine segment with thickness less than 4 mm. The data was analyzed by applying the standard statistical tests.

RESULTS

This study was done over a period of one year, during which LSCS was done for various indications in total of 1314 patients. Among these 1314 sections, repeat emergency section was done in 862 cases (65.60%). The various indications are unexplained maternal tachycardia in 151 (17.52%), fresh vaginal bleeding in 27 (3.13%), fetal heart rate abnormalities in 486 (56.38%) and non-progress of labor in 78 (9.05%) and scar tenderness was seen in 120 cases (13.92 %).

So total of 120 patients were included in the study for evaluation. Around 72% patients belong to the age group of 21-30 years. Age, religion, socioeconomic status and booking status are shown is table 1.

Table 1: Socio demographic data.

Variables	Number of patients	(%)
Age (in years)		
<20	1	0.83
20-30	87	72.50
30-40	32	26.67
>40	0	0
Religion		
Hindu	92	76.67
Muslim	27	22.50
Christian	1	0.83
Socioeconomic status		
Upper middle	7	5.83
Lower middle	31	25.83
Upper lower	49	40.83
Lower	33	27.50
Booking status		
Booked	56	46.67
Un booked	39	32.50
Registered	25	20.83

Out of 120 cases enrolled for the study intra-operative scar was intact in 69 cases (57.5%). Scar was thinned out in 27 cases (22.5%). Scar dehiscence was found in 21 cases (17.5%). Rupture occurred in 3 cases (2.5%). These findings are given in Table 2.

Table 2: Intra-operative uterine scar condition.

Scar condition	Number of patients	%
Intact	69	57.5
Dehiscence	21	17.5
Thinned out	27	22.5
Rupture	3	2.5

Maternal outcome in terms of maternal morbidity was shown in table 3. No maternal death was recorded. Average hospital stay was 6 days. Fetal parameters observed were shown in table 4.

Table 3: Maternal morbidity.

Complications	No. of patients	%
Wound infections	4	3.33
Pulmonary complications	9	7.50
Urinary complications	14	11.67
Endometritis	1	0.83
Blood transfusion	23	19.17

Table 4: Fetal outcome.

Fetal outcome	No. of patients	%
Meconium stained liquor	12	10.00
Apgar < 7 at 5 min	7	5.83
Fresh stillbirths	2	1.67
Neonatal death	1	0.83
NICU admission	14	11.67

It can be said that a trial of labor after caesarean (TOLAC) is safe at a tertiary care center where facilities for fetal and maternal surveillance, emergency caesarean deliveries, neonatal care and exploratory laparotomies if necessary are available.

DISCUSSION

Obstetrician should ensure an appropriate delivery plan for each patient of vaginal birth after caesarian section (VBAC). Planned and supervised institutional deliveries are with fewer complications. There are some absolute contraindications to allowing an attempt at vaginal delivery, such as classical scar, multiple pregnancy, previous ruptured uterus, cephalopelvic disproportion and malpresentation in present pregnancy. Scar tenderness is a sign which can be elicited early and easily. It is more valuable tool in the settings where continuous electronic fetal heart rate monitoring is not available.

Khalil et al done a study in which they divided the women into two groups based on whether scar tenderness was positive or not. In group one, which included 37 (24.5%) women. Rest of the 114 (75.4%) women constituted group two in whom scar tenderness was negative in group one, 8 (21.6%) patients had thinned out lower uterine segment, 9 (24.3%) had scar dehiscence and 2 (5.4%) had uterine scar rupture. They also conclude that scar tenderness had good sensitivity (86.3%) and specificity (86.0%). Although the positive predictive value (51.3%) was low, the negative predictive value was 97.3%.[3]

Rubina et al in a study of 120 women found three cases of scar tenderness of which one had a ruptured uterus at cesarean.[8] In another study by Gaikwad et al, they have recorded operative findings in 78 patients operated for suspected scar tenderness. They observed scar rupture in 3 (3.8), Scar dehiscence in 9 (11.5), thin scar (<4 mm) but intact in 14 (17.9) and normal scar in 52 (66.7).[2]

These findings are consistent with the findings shown in our study.

Bashir et al in their study detailed the complications following repeat caesarian section. They found the endometritis in 2 cases (16.66%), urinary tract infections in 3 (25%), pulmonary infections in 5 (47.66%), wound Infections in 3 (25%) and anemia leading to blood transfusion in 6 (50%).[8] Whereas in our study, blood transfusion was needed in 23 women and urinary complications occurred in 14 women. Puri et al in their study found 3 neonates with an Apgar score <7 at 5min.[1] In our study, two were still births, one neonatal death and 7 neonates were having Apgar score <7 at 5min. After studying the review of literature, many studies have not been conducted on the predictive accuracy of scar tenderness, although trial of labor after cesarean delivery has been extensively studied. To evaluate the significance of each clinical feature in predicting scar complications more studies are needed.

CONCLUSION

In developing countries like India, various religious taboos and social beliefs will not allow the limitation of family size. Therefore, primary caesarean section should be reserved for a sound indication followed by proper counseling for vaginal birth after caesarean section (VBAC). For the success of VBAC detailed evaluation prior to trial of labor, vigilant approach throughout labor, round the clock emergency facilities and a well-equipped set up are necessary. This compels institutional delivery for all previous LSCS cases. To identify giving way of the scar, scar tenderness can be emerged as a useful sensitive method and should be routinely elicited in all cases.

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