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EMERGENCY REPEAT CESAREAN SECTIONS IN WOMEN IN MALALAI AND SHARARA HOSPITALS

Repeat cesarean deliveries are associated with complications of cesarean section (CS) and predisposition to morbidity resulting from placenta previa, morbidly adherent placenta, complicated surgeries, uterine rupture and bladder injury. Successful trial of labor and vaginal birth after cesarean section (VBAC) results in decrease in maternal morbidity. An unsuccessful trial of labor after Cesarean (TOLAC) is defined as failure to achieve a vaginal birth after cesarean section in women undergoing a TOLAC and the delivery ending with emergency cesarean section. In this study we aim to determine the frequency of inter delivery interval and emergency cesarean section attempt at vaginal delivery among women with one previous CS.

The descriptive cross-sectional study was conducted at Malalai and Sharara maternity hospitals in Kabul, for three consecutive months. The collected data were presented as mean, standard deviation (±SD), frequency and percentage.

A total of 204 women with one previous CS out of 180 were eligible for TOLAC according to the hospital protocol and 35 women (19.4%) of the studied women had emergency cesarean, 34.47% women with their inter delivery interval were between 16-19 months most cases of unsuccessful TOLAC 43% were seen among women between 25 to 29 y old with mean age of 26.43 ± 5.6. In our study frequency of repeat emergency cesarean in women with prior CS was found as 19.4%, most cases have been seen in women with short inter delivery interval, most cesarean performed between 37-39 week of gestational age, fetal distress was the most indication of repeat emergency cesareans.

Key words: Cesarean section, emergency, inter delivery interval, trial of labor after cesarean section (TOLAC)

Introduction

Repeat cesarean deliveries are associated with complications of cesarean section (CS) and predisposition to morbidity resulting from placenta previa, morbidly adherent placenta, complicated surgeries, uterine rupture, and bladder injury [1-2].

Trial of labor after cesarean section (TOLAC) is the attempt to give vaginal birth after cesarean section delivery [3].

According to the World Health Organization, countries with a low cesarean section rate of less than 10 percent have the lowest infant mortality rate. Respiratory problems and jaundice in cesarean section babies are more than normal birth babies, which is why respiratory problems in cesarean section babies are more than normal births [4-6].

Repeat cesarean section is one of the most common causes of cesarean section and it has been believed for decades that the uterus has scars due to the possibility of rupture of the uterus as opposed to normal delivery [7-9].

Many years ago, the American College of Obstetricians and Gynecologists began to offer solutions to reduce cesarean section and reach the standard of the World Health Organization by 2010. Among these strategies and suggestions, we can mention vaginal delivery after cesarean section. Vaginal birth after cesarean section can be considered as one of the biggest changes in obstetrics and obstetric care in this century [10].

In a case control study conducted in one of its teaching hospitals in Brazil, the failure rate of TOLAC was 38.3%. In a study conducted by Samantha et al. the emergency CS was reported to be 17% [11]. A study conducted at a medical university in western Kazakhstan in 2010-2013 reported emergencies CS failed TOLAC of 31.1%. In another study conducted by Singh et al. in an Indian hospital the failure rate was reported to be 32.3, with the highest rate of failure due to the presence of myconium and fetal distress [12].

The largest and most recent study included over 25,000 women who delivered between 1995 and 2000. They found that becoming pregnant within 6 months of the previous delivery was associated with a 2.66 increase in odds of uterine rupture, the women who were pregnant within 6 months after their previous cesarean (children spaced less than 15 months apart) had a rupture rate of 2.7% compared to a 0.9% rate for those who waited at least 6 months before conceiving again. The risk factors included inter de-

livery interval less than 18 months. Given that many factors contributing to uterine rupture rate cannot be modified (such as maternal age or birth history) having an inter delivery interval of at least 18 months must be considered [13-14].

However, having an inter delivery interval of less than 18 months should not prevent a mother from considering vaginal birth after cesarean section (VBAC), and the overall risks should be considered in comparison to the risks associated with a repeat cesarean. In most cases obstetricians' scaring about the risk of uterine rupture in women with a previous cesarean section causes women to deliver by repeat cesarean section. A 2006 study by Cahill in the two groups of vaginal delivery after cesarean section and cesarean delivery showed that uterine rupture, bladder injuries and uterine artery injuries were significantly lower in the vaginal delivery group than in the cesarean section. An inter delivery interval shorter than 18 months was associated with a significant increase of uterine rupture whereas one between 18 to 24 months was not significant. Deciding on the type of delivery after cesarean section can affect future pregnancies [15-16].

By doing this research we found documentation of repeat emergency cesarean sections and inter delivery interval important to understand falling VBAC rates and also, we can make a rational decision about the birth plan by extended inter delivery interval and should examine how clinicians and women anticipate, discuss and make decisions about childbirth after a previous cesarean delivery within the context of actual antepartum.

The study aims to determine the frequency of emergency cesarean section in case of failure to deliver vaginally among women with one previous CS, and to examine risk factors.

Materials and Methods

This descriptive cross-sectional study was performed in Malalai maternity hospital and Shahrara teaching hospitals during the period of August 1 – November 1, 2020. Convenience sampling was applied, all pregnant women had previously one cesarean section, and women candidates for normal vaginal delivery (TOLAC patients).

Entry criteria: all pregnant women whose vaginal birth plan failed after cesarean delivery and had another emergency cesarean section, elective cesarean in women with prior CS were included in the study.

Exclusion criteria: patients who did not have a cesarean delivery history, pregnant women who had more than one cesarean section deliveries, and those whose files were incomplete were excluded from the study.

During this period 204 women with prior cesarean delivery were admitted. Out of them 24 women underwent elective CS and 35 emergency CS, women expected TOLAC, 145 of them had successful vaginal delivery.

First, the information was taken from the register book of the examination room and surgery ward, then the desired files from our eligible criteria were collected from the medical record branch, and then the files with an emergency cesarean section due to unsuccessful TOLAC were selected and studied. The special preparation form and use of the SPSS20 software, the information and figures collected were adjusted and analyzed after the data management / cleaning. Because the study is descriptive, the study variables and figures have been expressed by statistical descriptive measurement such as mean, standard deviation (SD), percentage, frequency.

Results

The study had been conducted for three months, totally 204 patients with one previous cesarian delivery were admitted, out of them 24 (12%) women underwent elective CS and 180 women who were candidates for TOLAC, including 35 (17%) who failed to have normal vaginal delivery and had emergency CS and 145 (71%) of them had successful VBAC (Figure 1). Thus, the frequency of repeated cesarean sections was 29%.

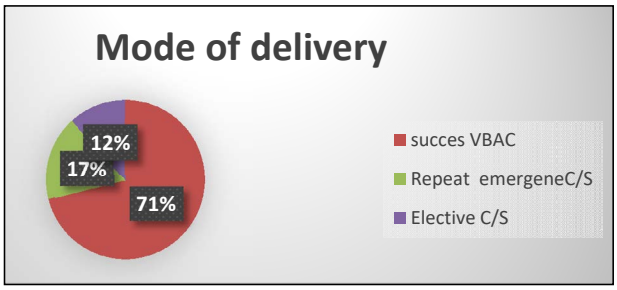

Figure 1 – Above table demonstrated mode of delivery i n women with previous cesarean delivery

Among 180 women who attempted to give birth vaginally after cesarean delivery, 145 (81%) women had successful VBAC and 35 of them (19%) had repeat emergencies cesarean delivery (Figure 2).

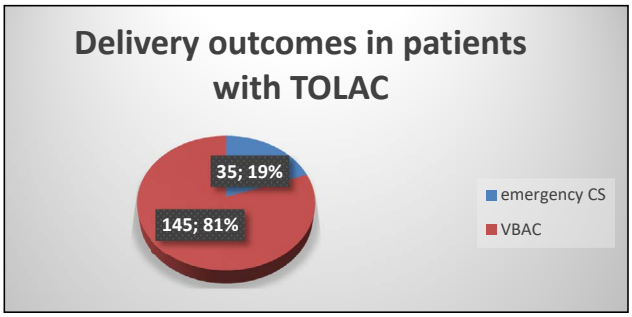

Figure 2 – Delivery outcomes in patients with TOLAC

Further we analyzed number of parity, maternal age, gestational age, inter delivery interval and indications for CS in patients with unsuccessful TOLAC (Tables 1-4).

The number of parity of women with repeat emergencies CS is presented in table 1. It showed that out of 35 women 77.1% of them had 1 to 2 parity and 8.5% of them had 3 to 4 parity, the median of parity was 1.9 ± 1.7 ranged between 1and 7.

Table 1 – Number of parity of women with repeat emergency CS

Parity	Number	Percent	mean ±SD
1-2	27	77,1	1.9±1.7 max/ min (1 – 7)
3-4	3	8,5	
5-7	5	14,2	
total	35	100	

We found that most cases (43%) of unsuccessful TOLAC were seen in women between 25 to 29 years old with mean age of 26.43 ± 5.6, while the other two categories were proportional to the failure rate (table 2).

Table 2 – Maternal age of women with repeat emergency CS

Age	Number	Percent	mean ±SD
20-24	10	28,5	
25-29	15	43,0	26.43 ± 5.6
30-35	10	28,5	
total	35	100	

It was found that gestational age of 3% of women was less than 37 weeks (36w+2day) and in 62,8% of women – between 37 to 39 weeks with mean of 38.9 ±1.3 ranging from 37 to 42 weeks (table 3).

Table 3 – Gestational age (week) of women with repeat emergency CS

Gestational age	Number	Percent	mean ±SD
<37	1	3,0	
37-39	22	62,8	38.9 ±1.3 Mix/ min (37-42)
40-42	12	34,2	
total	35	100	

It was found that in women with repeat emergency CS (table 4) inter delivery intervals were between 12-15 months that is 31.42% and, in most patients, (34.28%) their inter delivery interval were between 16-19 months. The VBAC success rate was 79.0% for patients with an inter delivery interval less than 19 (85.5%) months for patients with an interval greater than or equal to 19 months.

Table 4 – Inter delivery interval of women with repeat emergency CS

Inter delivery interval, months	Number	Percent
12-15	11	31,42
16-19	12	34,28
20-23	8	22,85
>24	4	11,42
total	35	100

Table 5 shows that 37% of women were subjected to emergency cesarean due to fetal distress, 25% – due to failure of progress in labour, 23% – cephalopelvic disproportion and 8.5% – due to threatened uterine rupture or tenderness of uterine scar.

Table 5 – Indication to emergency CS

Indication	Number	Percent
Fetal distress	13	37,1
Failure of labour progress	9	25,7
Cephalopelvic disproportion	8	23,0
Threaten rupture of uterus	3	8,5
Abruption of placenta	2	5,7
total	35	100

Discussion

In our study emergency cesarean rate of 19% is consistent with overall VBAC failure rates reported irrespective of birth order [4, 6]. Failure rates in our group are close to but slightly higher than reported in a study from Samantha S Mooney, in Australia with 395 women admitted with the TOLAC plan 17% [3].

In a study conducted by Saima Aziz in a Pakistani hospital with 122 TOLAC-eligible women, the repeat emergency cesarean rate was 27.9% and the successful VBAC rate was 72.1% [2]. There is some difference in our studies which may have been due to differences in health facilities services, antenatal care or some eligible criteria for emergency cesarian or failure rate of TOLAC.

A Study conducted by Zhonghua at a hospital in Western China (2005) demonstrated the prevalence of repeat emergency cesarian to be 27.8% and the success rate was 72.2% [1]. This study is similar with the Saima study in Pakistan but our study showed such difference in part. The possible reasons are the differences in the selection of eligible vaginal births after cesarean section, indications to previous cesarean sections, anatomical differences between women and their ages and applying different guidelines in this regard.

In our study most (65,7%) women who underwent repeat emergency cesarian had inter delivery period less than 20 months (34.28% cases between 16-19 months and 31.42% – between 12-15 months).

The finding by Huang WH, Nakashima, revealed that unsuccess rate of TOLAC or emergency repeat cesarean was 21% for patients with an inter delivery interval less than 19 months but 14.5% with patients with an interval delivery interval more than or equal to 19 months [15]. Their interpretation is likely similar to each other because short inter delivery interval was negative predictor and decreased rate of success TOLAC but their percentage is different due to access in child spacing services, women education and awareness, number of pregnancies, refusing or accepting TOLAC by a woman.

In our study the mean age of women was 26.43±5.4 years and in 43% of cases the age ranged between 25-29 years. In a study conducted by Nighat Shahin et al. 28.4% reported a failure rate of TOLAC, but maternal mean age was found as 27.1± 3.3 [5]. The prevalence of vaginal birth failure showed differences in our study but mean age of women in failed of TOLAC group reported similar findings.

The study, conducted in a Pakistan hospital by Saima Aziz Siddiqui, reported a mean maternal age of 26.68 ± 4.0 years, and also the result of this study showed highest TOLAC failure rate of 68.9% between the ages of 20-29 years and 5.7% between the ages of 35-39 years [2]. These studies were likely similar to each other because both studies have been conducted in societies with almost the same culture, customs and traditions.

In addition, in a study conducted in a Chinese hospital, the mean age of women was 34±0.9 years and the gestational age mean was 39.6 ±1.3 in TOLAC women who did not succeed [1, 4]. The mentioned study is not statistically similar to our study because the difference is in the culture and age of marriage, pregnancy, child spacing, and health facilities services.

Saima Aziz concluded that VBAC is likely to be unsuccessful at ≥40 gestational weeks (26.47%) with mean gestational age of 38.5±1.28 [2]. We compared it with the highest rate of vaginal birth failure 63% at 37-39 weeks and 38.94±1.3 mean age of gestation in the present reported study.

Samantha et al. reports that in the study conducted in Australia, the highest rate of unsuccessful TOLAC and emergency cesarean sections in 39 weeks pregnancy ranged between 40 and37 weeks , it is likely similar [3].

In addition, the study conducted by Sakiyeva et al. at medical university in Kazakhstan, number of women admitted in labor with gestational >40 weeks was significantly high in unsuccessful VBAC group, this is twice higher for TOLAC failure [9].

Coassolo *et al.* reported 31.3% of VBAC failure at 40 gestational weeks or beyond against 22% in <40 gestational weeks [7, 9]. The findings of these studies are different to our study, due to health facilities services, antenatal care, maternal body anatomic characteristic.

Similarly, Smith et al. in their study on TOLAC, in women at or beyond 40, reported increasing adjusted odds from 40 weeks up to 42 weeks. Another study of 4,086 first-time laboring mothers showed increased risk of cesarean beyond 39 weeks gestation [9].

In our study, 77% of women with unsuccessful TOLAC showed parity being 1-2 with an average 0f 1.9 ±1.07.

Cahill et al, reported in two groups in 2006, that uterine rupture in the prior cesarean delivery group (0.6%) was statistically significant [8]. Risk of uterine rupture was associated with an inter delivery interval ranging between 18 and 24 months [16]. But in our study, no uterine rupture was found.

In our study, the cause of TOLAC failure was 37.1% due to fetal distress, 25.7 percent due to fail of progress in labour, 23 % due to cephalopelvic disproportion and 8.5% threatened uterine rupture and scar tenderness.

According to Lydon et al the repeat emergency cesarean section was indicated in case of failure to progress as the most common indication (60.1%). Fetal indications were 24.4% fetal asphyxia, and 8% cephalopelvic disproportion [10].

The study, conducted in a Brazilian hospital between 2010 and 2011 with 260 eligible women, found that 40.5 % were due to fail of progress, 26.1 % – fetal distress, 16.7 % – CPD and 6.7 % – thick meconium as the reason of failed TOLAC [11].

Singh N, Tripathi, evaluated failure of TOLAC in a hospital in northern India, it was found that 48% of fetal distress, 6% of cephalopelvic disproportion and 11% tenderness of scar in women caused TOLAC failure, with performance of urgent cesarean section [8, 12].

Saima Aziz had earlier concluded in their study that 67% of cesarean sections were performed due to failure of progress [5]. But in the study conducted by Lydon MBr, 27% of failure of progress, 48% fetal distress and 0.8% due to uterine dehiscence were indication for emergency caesarian [10]. These studies reported different statistics to our study.

High body mass index, no previous spontaneous delivery, and fetal distress as a cesarean indication correlated negatively with a successful vaginal birth after cesarean [17]. Past obstetric history, such as stillbirth, history of trial of labor after primary cesarean section, and prior vaginal birth, were significant predictors for successful vaginal birth after cesarean section [18].

It should be noted that in Afghanistan, no previous study has been conducted to provide figures and evidence on repeat emergency CS. By launching this study, we were able to obtain usable figures and evidence and pave the way for further analytical research. Our study is based upon regular medical records and data from two maternity hospitals.

Conclusion

Frequency of repeat emergency cesarean was found in women with prior CS as 19.4%, short inter delivery interval was found to cause an increased rate of repeat cesarean, fetal distress was the most indication of repeat emergencies cesarean. Further study is needed to identify what clinicians anticipate and how they make decisions about childbirth after a previous cesarean delivery within the context of actual antepartum care. Appropriate selection of patients for trial of labor after caesarian section must reduce failure of TOLAC.

Decrease the associated morbidity by reducing repeat emergency cesarean especially in low resource settings.

Provide different methods of contraception for women with prior CS.

Awareness and counseling about the child spacing and inter delivery interval as a factor that affects mode of delivery in women with prior cesarean delivery.

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