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VAGINAL BIRTH AFTER CAESAREAN SECTION;
FACTORS PREDICTING SUCCESS

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ABSTRACT... Background: Cesarean section is the commonest obstetrical procedure, associated with increase in maternal morbidity, the cesarean section rate is steadily on the rise in our country which can give rise to a number of complications. **Objective:** To determine the factors associated with successful vaginal delivery after previous cesarean section. **Study Design:** Cross sectional study. **Period:** May 2009 to October 2009. **Setting:** Liaquat university hospital, Hyderabad. **Material and Methods:** a total of 96 women which fulfilled the selection criteria were included in the study. **Results:** The women included in the study had a mean age of+ SD(range),29.94+4.41successful vaginal birth was observed in 57(59.5%) women and 39(40.6%) had an emergency repeat cesarean delivery. The factors favoring successful vaginal delivery were history of previous vaginal delivery and previous cesarean due to fetal distress or breech presentation, and patients having cesarean due to non progress of labor and no prior vaginal delivery were less likely to have a successful vaginal birth after having previous cesarean delivery. **Conclusions:** vaginal birth after caesarean section can be recommended in patients having prior vaginal delivery and previous caesarean due to fetal distress and breech presentation.

Key words: Cesarean Section, VBAC, Prior vaginal delivery.

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INTRODUCTION

Caesarean section is the most common obstetrical procedure. Over the years Caesarean section rate is on the rise all over the world and this trend is closely being followed in our country[1], although it is considered a relatively safe procedure but is still associated with increased maternal mortality and morbidity as compared to vaginal delivery[2].

The major issue with repeated caesarean deliveries is the increased chances of blood transfusion, hemorrhage, uterine rupture[2] and placental complications[3]. This is more relevant in our part of the world where the family size is large and un availability of proper health care facilities make it a major health hazard with more and more women will present with previous scar will encounter these problems in subsequent pregnancies, also the cost of caring for these women will be substantially high affecting our already crippled economy.

Many interventions have been suggested to overcome this issue, such as decrease in the primary caesarean rate, offering trial of vaginal delivery after previous caesarean section to suitable women. Although there is no doubt that the trial of labor is relatively safe procedure, it is not risk free and should not be taken casually[4]. The greatest risk of adverse events is for the women who undergo trial of labor and end up in emergency caesarean section rather than a planned caesarean delivery[5], necessitating the need for proper patient selection prior to attempting vaginal birth after caesarean section.

PATIENTS AND METHODS

This cross sectional study was conducted at Obstetrics and Gynecology unit-II, Liaquat university hospital, Hyderabad. From May 2009 to October 2009. A total of 96 women having previous one Caesarean delivery were included in the study having a term singleton pregnancy, clinically adequate pelvic dimensions and spontaneous onset of labor. Women having more than one prior Caesarean delivery, classical uterine incision ,and severe medical and obstetrical complications(Diabetes, Hypertension, Multiple pregnancy, Intra uterine growth restriction,

severe abruption) were excluded from the study. Written informed consent was taken, detailed history, thorough clinical examination and relevant investigations were performed, patients were closely monitored for progress of labor, maternal and fetal condition and scar integrity, all the relevant information was recorded on a pre designed proforma.

Patient's age, parity, presence of previous vaginal delivery and indication of previous Caesarean section were taken as variables. Mean standard deviation was calculated for variables like age. Frequency and percentages were calculated for variables like previous vaginal delivery and success or failure of attempted vaginal birth after Caesarean section. Confounding variables were controlled by stratification by age and booking status of the patient.

RESULTS

Total 96 women were included in this study with mean age +/-SD(range), 29.94+/-4.41(20-40 years). Out of these women, successful vaginal birth after Caesarean section was observed in 57(59.4%) women and 39(40.6%) women had an emergency Caesarean section.(Fig-1).

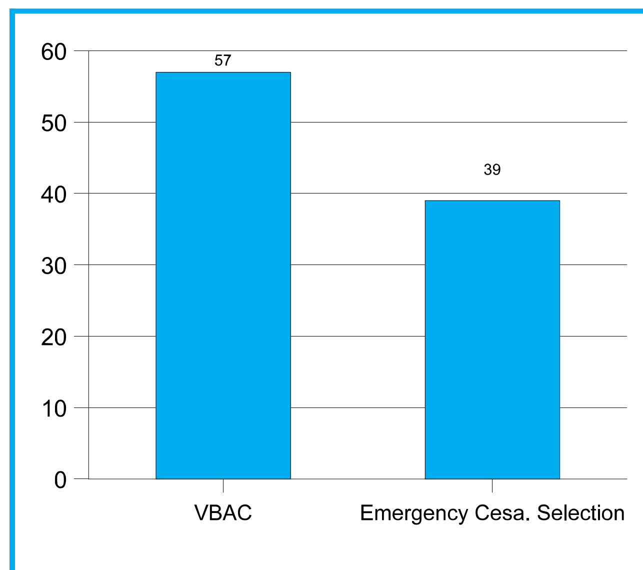

Fig-1. Mode of delivery (n=96)

Out of 96 women, 59(61.45%) had previous vaginal delivery, out of them, 43(72.9%) had a successful vaginal birth after caesarean and 16(27.1%) had an emergency caesarean section.(Fig-2).

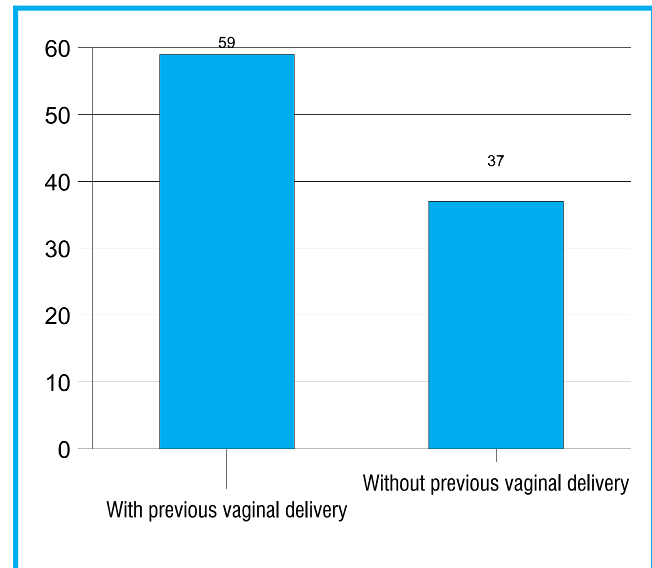

Fig-2. Previous vaginal delivery (n=96)

Among all women, indications of previous caesarean section, 30(31.3%) women had a caesarean section due to non progress of labor, 21(21.9%) fetal distress and breech presentation respectively, 13(13.5%) Placenta praevia, 5(5.2%) Transverse lie, 4(4.2%) obstructed labor and 2(2.1%) Cephalopelvic disproportion.(Table No.I).

Indication of previous cesarean	
Non progress of labour	30 (31.3%)
Fetal distress	21 (21.9%)
Breech presentation	21 (21.9%)
Placenta praevia	13 (13.5%)
Transverse Lie	5 (5.2%)
Obstructed labour	4 (4.2%)
Cephalo pelvic disproportion	2 (2.1%)

Table-I. Indication of previous cesarean section (n=96)

Indication of previous caesarean section, 30(31.3%) women had a prior caesarean section due to non progress of labor, out of 57 patients, 11(19.3%) delivered vaginally while out of 39 women 19(48.7%) were delivered by a repeat caesarean section.21(21.9%) women had prior because of fetal distress. Out of 57 women 14(24.6%) delivered vaginally and 7(17.9%) women delivered by emergency caesarean section.(Table No.II).

Indication of previous cesarean section	VABC (n=57)	Emergency caesarean (n=39)	Total
CPD	1 (1.8%)	1 (2.6%)	2 (2.1%)
Non progress of labour	11 (19.3%)	19 (48.7%)	30 (31.3%)
Fetal distress	14 (24.6%)	7 (17.9%)	21 (21.9%)
Breech presentation	16 (28.1%)	5 (12.8%)	21 (21.9%)
Placenta praevia	9 (15.8%)	4 (10.3%)	13 (13.5%)
Transverse Lie	4 (7.0%)	1 (2.6%)	5 (5.2%)
Obstructed labour	2 (3.5%)	2 (5.1%)	4 (4.2%)

Table-II. Cross tabulation of prior indications of cases an section with mode of delivery (n=96)

Emergency caesarean section was performed in 39(40.62%) women, out of them, 23(24.0%) were because of non progress of labor, 6(6.3%) fetal distress and 10(10.4%) had caesarean section due to scar tenderness(Fig-3).

There was no case of uterine rupture, scar dehiscence in this study.

There were 5 (5.2%) babies admitted in NICU for respiratory problems in women having a repeat emergency caesarean section, however there was no case of perinatal death in this study.

	Vaginal delivery (n=96)		Total
	With previous (n=59)	Without previous (n=37)	
Mode of delivery			
VABC	43 (72.9%)	14 (37.8%)	57 (59.4%)
Emergency Caesarean Selection	16 (27.1%)	23 (62.2%)	39 (40.6%)

Table-III. Cross tabulation of mode of delivery and previous vaginal delivery

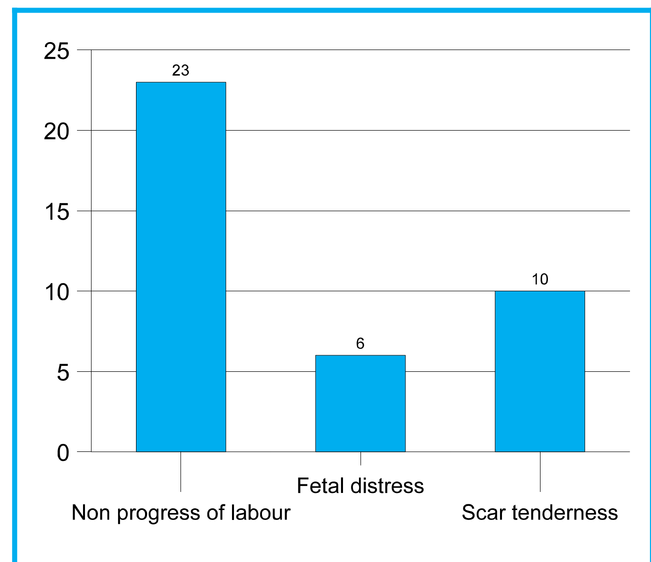

Fig-3. Indication of emergency caesarean section (n=39)

DISCUSSION

Vaginal birth after caesarean section has been considered an important step to lower the exceptionally high caesarean section rate all over the world. The Caesarean section rate in said unit during 2009 was 45% which is quite high, mainly because it is a tertiary care hospital receiving patients which are in critical condition often necessitating an operative delivery.

In this study 96 women having previous lower

segment caesarean section were given trial of vaginal birth, the success rate of vaginal birth after caesarean section was 59.4%, which was lower than the rates reported from studies conducted in Europe and US which were 75%[6] and 61.4%[7] respectively. The reported success rates study done in Karachi was 62%[8], however a recent study done in Nawabshah[9] reported a success rate of 41.93% which is much lower than this study. As evident from highly variable success rates from above mentioned studies a key to success is proper patient selection.

There are few factors that have some influence on this matter and have the potential to predict the success of attempted vaginal birth after caesarean section.

Women having previous history of vaginal delivery have more chances of successful birth after caesarean section. In this study 59(61.45%) women had history of one vaginal delivery, among these women 72.9% delivered vaginally, this finding was consistent with a study done by Gyamfi et al[10], this was also reported in a study done at Peshawar[11]. Although a study done by Hendler et al[12] suggested prior vaginal delivery a risk factor for scar rupture/ dehiscence, this was not consistent with our study in which there was no case of scar separation in women having prior vaginal delivery.

Indications of previous Caesarean has some influence in the success of trial of labor.

In this study the indications were recorded from history and antenatal records, 30 patients had previous caesarean section due to non progress of labor out of which 19.3% had a successful vaginal birth and 48.7% had an emergency repeat caesarean delivery, this was in contrast when previous caesarean section was done due to fetal distress and breech presentation where vaginal birth was successful in 24.6% and 28.1% women and emergency caesarean delivery was done in 17% and 12% women respectively, these findings were consistent with findings of study done by Shipp et al[13].

Many previous studies have pointed towards the influence of inter delivery interval[14] and fetal birth weight[15] on the success of vaginal birth after caesarean section, however these factors were not associated with successful trial of labor in this study.

In this study 39 out of 96 women (40.6%) had an emergency caesarean section; the major indications were non progress of labor, fetal distress and scar tenderness.

As reported in different studies, the risk of uterine rupture[16] is a known complication of trial of labor forcing obstetricians to choose an elective repeat caesarean section as a safer alternative, in this study there was no case of scar rupture/dehiscence.

There were 5 babies admitted in NICU, for respiratory problems, however there was no case of perinatal death , born to women included in this study, either delivered vaginally or by repeat caesarean section.

CONCLUSIONS

Offering trial of vaginal birth to women having previous caesarean delivery can play an important role in lowering the alarmingly increased caesarean section rate, patient selection is the key to a successful trial of labor.

Patients having a previous vaginal delivery have a higher chance of achieving a successful vaginal birth after caesarean and should be considered a strong candidate for it. Women having prior caesarean section due to failure to progress have more chances to have a repeat caesarean delivery, but women having previous caesarean due to fetal distress and breech presentation have a higher chances for achieving vaginal birth in subsequent pregnancy.

There was no case of uterine rupture/scar dehiscence or perinatal mortality, in this study , therefore it can be considered a safe option in properly selected women.

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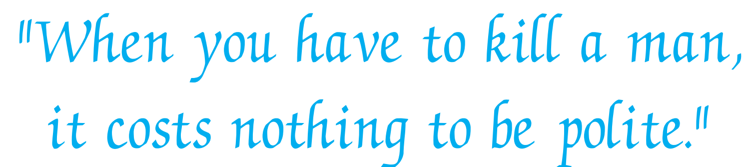

Sir Winston Churchill (1874-1965)