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ORIGINAL ARTICLE

Outcome of a Post Caesarean Pregnancy in a Tertiary Center of a Developing Country

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ABSTRACT

Background: An expectant attitude and individualization with respect to the management of pregnancy and labour in patients who had one caesarean section is not only justifiable, but represents sound and conservative obstetrical practice.

Aims:

1. To study the success rate of vaginal birth after caesarean delivery
2. To know the commonest indication for elective and emergency caesarean section

Methods:A total of 219 cases with a history of previous caesarean section beyond 28 weeks of gestation were included in the study. The collected data was analyzed by chi-square test.

Results: The incidence of post caesarean pregnancy cases were 219(8.76%). Out of these, 113 (51.6%) were selected for trial of labour and 106(48.4%) underwent elective repeat caesarean section. Of the 113 women who were allowed for a trial of labour, 73(64.6%) delivered vaginally and 40(35.4%) delivered by emergency repeat caesarean section. Thus, the success rate of VBAC was 64.6%. So a total of 146(66.7%) women underwent repeat caesarean section and 73(33.3%) delivered vaginally. Cephalopelvic disproportion was the most common indication for elective repeat caesarean section and foetal distress for emergency caesarean section.

Conclusion: VBAC should be considered in cases of previous one caesarean delivery for non recurrent indications.

Key Message: Substantial reduction in the caesarean rate can be achieved safely and efficiently by encouraging trial of labour in women with a single previous caesarean delivery.

Key Words: Vaginal birth after caesarean section, repeat caesarean section, trial of labour, scar dehiscence, maternal morbidity.

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Introduction

For many decades, a scarred uterus was believed to contraindicate labour, out of fear of uterine rupture. In 1916, Craigin pronounced "Once a caesarean always a caesarean". The year 1978 was a milestone in the history of prior caesarean delivery. Merill and Gibbs [1] reported that subsequent vaginal delivery was safely attempted in 83% of their patients with prior caesarean deliveries. This report served to rekindle interest in vaginal birth after prior caesarean (VBAC). The realization of ever increasing caesarean rates and that a carefully monitored attempt at vaginal delivery in previous caesarean delivery cases is indeed safe has propagated this concept greatly.

There is wide variation in the VBAC rates pronounced by hospitals and physicians. The

present study was undertaken to re-ascertain these facts with the hope that more women will be encouraged to avoid an unnecessary repeat caesarean section by opting for vaginal delivery.

VBAC offers distinct advantages over repeat caesarean section, since the operative morbidity and mortality are completely eliminated, the hospital stay is much reduced and the expenses involved are much less. The rate of caesarean section needs to be reduced and this can be achieved to a small extent by avoiding a primary caesarean section done without explicit indications and more importantly, by resorting to a trial of vaginal delivery after previous caesarean section, which is safe for the foetus[2].

Materials and Methods

This descriptive study was conducted from 1st January 2007 to 31st January 2008. All patients with a history of previous caesarean section beyond 28 weeks were included. Complete history including indication of previous caesarean section, the details of the present pregnancy, foetal size, amount of liquor, scar tenderness, pelvic adequacy and any other disorders were recorded.

The patients were followed up from admission to discharge from the hospital. The mode of delivery, morbidity (maternal and neonatal) and mortality were noted. Patients with a history of previous caesarean section who were not given the trial of labour underwent elective repeat caesarean section (ERCS). The ERCS group also included those patients who were not allowed the trial of labour (TOL) and had repeat caesarean section, although the caesarean section was done on an emergency basis. Patients who had a failed trial of labour underwent emergency caesarean section. These were included in the emergency section group. This study was approved by the institutional ethical committee. The collected data was analyzed by chi-square test.

Results

There were a total of 2498 deliveries during the study period.

out of which 219 women had a previous caesarean section, which constitutes 8.76% of the patients. Of the 219 women with a previous caesarean section, 113(51.6%) were selected for the trial of labour and 106(48.4%) underwent elective repeat caesarean section (p=0.636, not significant).

Of the 113 women who were allowed a trial of labour, 73(64.6%) delivered vaginally and 40(35.4%) delivered by repeat caesarean section. Thus, the success rate of vaginal birth after caesarean section delivery was 64.6% (p=0.002, highly significant). 73(33.3%) women delivered vaginally and 146(66.7%) underwent repeat caesarean section (p=0.000, highly significant) out of the 219 cases with previous caesarean section.

The study shows that 4(5.4%) delivered by vacuum application out of the 73(33.3%) vaginal deliveries. The indication for vacuum application was foetal distress in three cases and the failure of maternal bearing down efforts in one case.

Cephalopelvic disproportion (CPD) was the most important indication for elective repeat caesarean section accounting for 49% of elective repeat caesarean section, [Table/Fig 1] [Table 1, x^2=96.755,p=0.000] , whereas foetal distress (37.5%) was the most common indication in the emergency caesarean section group [Table/Fig 2] [Table 2, x^2=23.7, p=0.01].

(Table/Fig 1) Indications for Elective repeat caesarean section

Indication	Number	Percentage
CPD	52	49.0
Suspected scar rupture	6	5.6
Previous 2 LSCS	6	5.6
foetal distress	9	8.4
Malpresentation (Breech+Transverse lie)	7	6.6
Others†	26	24.5
Total	106	

755
P=0.000(Highly significant)

†GDM, Cord prolapse, maternal request, twins placenta previa, unstable lie, IUGR, PROM with unfavorable cervix, weak scar, severe pre eclampsia, bicornuate uterus.

(Table/Fig 2) Indication for emergency repeat caesarean section

Indication	Number	Percentage
Fetal distress	15	37.5
CPD	8	20
Failure to progress	6	15
Failed induction	3	7.5
Scar dehiscence	5	12.5
Persistent LOP	1	2.5
Cervical dystocia	2	5
Total	40	

χ^2=23.7
P=0.01(Highly significant)

Of those 12 women whose primary caesarean section was done for CPD, 75% delivered vaginally, whereas 70.5% and 64% of women who underwent primary caesarean section for foetal distress and malpresentation respectively, delivered vaginally [Table/Fig 3] [Table 3, χ^2=7.457, p=0.488 not significant].

(Table/Fig 3) Indication for primary caesarean section and outcome of trial of labour

Indication for primary caesarean section	VBAC No. (%)	Emergency caesarean Section No. (%)	Total
Fetal distress	24 (70.5%)	10 (29.4%)	34
Failure to progress	10 (62.5%)	6 (37.5%)	16
CPD	9 (75%)	3 (25%)	12
Malpresentation (Breech+Transverse Lie)	16 (64%)	9 (36%)	25
IUGR	3 (60%)	2 (40%)	5
Failed induction	2 (33.3%)	4 (66.6%)	6
Twins	1 (25%)	3 (75%)	4
PIH	3 (60%)	2 (40%)	1
Unknown	5 (83.3%)	1 (16.7%)	6
Total	73	40	113

X^2=7.457
P=0.488 (Not significant)

73% of the women with previous caesarean section, who also had a prior vaginal delivery, delivered vaginally, as compared to 62% of the women who did not undergo prior vaginal delivery. This difference was statistically not significant. Out of the 82 women who were in spontaneous labour, 67% delivered vaginally where as out of the 20 who were induced with oxytocin, 45% delivered vaginally. This is not statistically significant.

Women who underwent emergency caesarean section had more intra operative complications like bladder injury, extension, haematoma etc. than those who had elective repeat caesarean section. This was statistically significant (p=0.041). 3(2.65%) cases of scar dehiscence were found in 113 patients who were allowed the trial of labour. There were no cases of uterine rupture. Though emergency caesarean section was associated with a 20% maternal morbidity as compared to 9.5% with vaginal delivery and 10.3% with elective repeat caesarean section, this is not a statistically significant difference.

In the majority of the cases where repeat caesarean section was performed, the babies weighed more than 3 kg, whereas in the vaginal delivery cases, the babies weighed less than 3 kg. This was statistically significant (p=0.01).

Emergency caesarean section was associated with 20% perinatal morbidity as compared to 16.4% for vaginal delivery and 1.8% for elective repeat caesarean section. This was statistically significant (p=0.000). There were no perinatal deaths in this study.

Women who had a successful vaginal delivery had a significantly lesser duration of hospital stay as compared to those who had a caesarean section (p=0.0005 highly significant).

Discussion

There has been a steady rise in cases with previous caesarean section over the past few decades. Miller et.al.[3] reported a post caesarean pregnancy rate of 8.1% in 1983 and 14.1% in 1992. Our study showed a post caesarean pregnancy rate of 8.7%. Published literature shows that there has been 70 to 80% success in attempts at VBAC [2],[3],[4],[5],[6],[7]. We had a 64.6% success in those who had trial of labour. Aisien et.al.[8] reported a 48.1% incidence of vaginal delivery in previous caesarean section cases, whereas Chabra et.al reported an incidence of 32.4% [9]. Our study reported a 33.3% incidence of vaginal delivery in previous caesarean section cases.

Miller et.al. reported a 2.3% incidence of women with multiple caesarean section [3], whereas our study showed the incidence to be

5.6%. Singh et.al reported a 92.8% success rate in vaginal delivery with oxytocin induction [10], whereas our study reported a lower success rate of 58%. The incidence of instrumental delivery in our study was 5.4% as compared to 12.6% and 10.7% reported by Singh et.al [7] and Shah et. al [10], respectively.

Miller et. al. had reported vaginal delivery in 52% of those with CPD, 84% in those with breech presentation and 54% in those with foetal distress as indication of previous caesarean section [3]. Our respective figures were 75%, 66.6% and 70.5% in the 3 cases.

In the present study, intraoperative complications like haematoma, bladder injury etc. were found in 57.5% of the cases of the emergency caesarean group as compared to 38.6% of the elective repeat caesarean section group. This was statistically significant (p=0.041). Scar dehiscence was found in 3(2.65%) cases during emergency repeat caesarean section. In all the three cases, oxytocin was not used. There were no cases of scar rupture in our study. Singh et. al. reported a scar dehiscence rate of 1.67% [10] .Carolyn et.al in their study of women with previous caesarean section, reported uterine rupture rate of 2.3% in those induced with oxytocin or PGE2 gel as compared to 0.7% among women with spontaneous labour [11]. In patients receiving oxytocin augmentation, the rate of uterine rupture was 1.0% as compared to 0.4% in the non- augmented, spontaneously labouring patients. Locateli et.al reported a uterine rupture rate of 0.3% in women with previous caesarean section as compared to 0.03% in the intact uterus group [12]. They concluded that induction of labour is not associated with significantly higher rates of uterine rupture among women with previous low transverse caesarean section as compared to women with intact uterus, provided that a consistent protocol with strict intervention criteria is adopted.

In our study, the incidence of febrile morbidity in the emergency caesarean section group was 10%, while that in the elective repeat caesarean section was 1.8%. In another study, the incidences were 5.3% and 6.4% for the respective groups [13]. In our study, the incidence of wound infection in the emergency caesarean section group was 5%. There were no cases of wound infection in the elective repeat caesarean section group. McMohan et al [13] reported an incidence of 2.2% in the elective repeat caesarean section group and 1.3% in the emergency caesarean group. In our study, 3.7% of the patients from the elective repeat caesarean section group, 2.7% from the vaginal delivery group and none from the emergency caesarean group required blood transfusion. In the study by McMohan et al [13], 1.1% and 1.3% patients required blood transfusion in the emergency caesarean and elective repeat caesarean section groups, respectively.

Aisien et.al reported one maternal mortality case as a result of uterine rupture and post partum haemorrhage which gave a case fatality rate of 0.3% [8]. There was no maternal mortality in our study. Overall, there was no statistically significant difference in the maternal morbidity in the various groups.

The average length of stay was 4 days in the patients who delivered vaginally as compared to 7 days in those who had elective and emergency caesarean section. This was comparable with other studies.

There was no neonatal mortality in our study. When other measures of neonatal outcome were examined in the study, a higher incidence of birth asphyxia was recorded after failed trial of labour than after vaginal delivery. Emergency caesarean section was associated with higher perinatal morbidity than vaginal delivery and ERCS. This was comparable to the study by Brenda et.al [14].The present study shows that neonatal outcome was not adversely affected by VBAC.

Among women with one previous caesarean section and one previous vaginal delivery, those whose most recent delivery was vaginal, had a lower rate of caesarean delivery and shorter duration of labour than those whose most recent delivery was caesarean [15]. Our study did not find such a correlation.

To conclude, an expectant attitude and individualization with respect to the management of pregnancy and labour in patients who had one caesarean section is not only justifiable, but represents sound and conservative obstetrical practice. Operative interference will be made in time if complications like foetal or maternal distress or threatened rupture etc. comes into the picture. All women undergoing a trial of labour should be carefully monitored during labour. Substantial reduction in the caesarean rate can be achieved safely and efficiently by encouraging the trial of labour in women with a single previous caesarean delivery.

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