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Outcomes of Planned VBAC and When VBACs Fail

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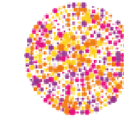

INTRODUCTION

A trial of vaginal birth after one caesarean section (VBAC) is supported by guidelines[1]. Outcomes should be regularly audited.

METHODS

A single institution retrospective study was performed on VBAC-attempt outcomes in woman with 1 prior caesarean section (CS) between 1st July 2017 and 30th June 2020.

Local databases (Obstetrix and eMaternity) identified eligible cases. Singleton pregnancies in women with 1 prior CS were included. Exclusions were placenta previa/accreta, multiple pregnancies and major fetal anomalies. Review of individual medical records confirmed VBAC intention.

SPSS software program was used for statistical analysis with significance set to p-value < 0.05.

REFERENCES

1 RANZCOG. Birth after Caesarean Section. College Statement. 2019

2 van der Merwe AM, Thompson JM, Ekeroma AJ. Factors affecting vaginal birth after caesarean section at Middlemore Hospital, Auckland, New Zealand, N Z Med J. 2013;126(1383):49-57.

RESULTS

Table 1: Predictors of successful vaginal birth in planned VBAC attempt

Risk Factor	Risk Factor Present	Risk Factor Absent	RR (95% CI)	p-value*
Gestational age† (weeks)	38.3 ± 3.8	39.5 ± 1.7	--	**< 0.001**
Maternal age† (years)	32.4 ± 4.6	32.0 ± 4.3	--	0.293
BMI at booking†	25.5 ± 5.2	26.4 ± 5.5	--	**0.047**
Private patient	76% (41/54)	72% (444/617)	1.06 (0.90 – 1.24)	0.533
Prior vaginal birth ≥ 1	91% (201/222)	63% (284/449)	**1.43 (1.32 – 1.55)**	**< 0.001**
Diabetes on insulin	66% (31/47)	73% (454/624)	0.91 (0.73 – 1.12)	0.315
Hypertensive disorder	14% (2/14)	74% (483/657)	**0.19 (0.05 – 0.70)**	**< 0.001****
Australian born	79% (170/214)	69% (315/457)	**1.15 (1.05 – 1.26)**	**0.005**
Smoking	79% (23/29)	72% (462/642)	1.10 (0.91 – 1.34)	0.387
Spontaneous labour onset	85% (375/440)	48% (110/231)	**1.79 (1.56 – 2.06)**	**< 0.001**
Oxytocin use	63% (110/175)	76% (375/496)	**0.83 (0.73 – 0.94)**	**0.001**
Induction	38	11	--	--
Augmentation	72	54	--	--
Cervical ripening	49% (23/47)	74% (462/624)	**0.66 (0.49 – 0.89)**	**< 0.001**

† Mean ± standard deviation
* Independent T-test for continuous variables, chi-squared test for categorical variable
** Fisher's exact test due to small sample size

Of 16497 women birthing, 2212 (13%) had 1 prior caesarean section (CS). 70% underwent elective CS, including those brought forward for early labour, while 671 women (30%) had a clearly documented VBAC intention. Of the VBAC attempts, 485 (72%) had a successful VBAC and 186 (28%) had an emergency caesarean section.

Successful VBAC was more likely to occur in women with a prior vaginal birth, spontaneous onset of labour and being Australian-born, while there were no differences based on maternal age, smoking, diabetes on insulin, or financial status (Table 1). No maternal deaths or hysterectomies occurred. 5% of successful VBACs were associated with blood loss ≥ 1500 mL, compared to 1% for emergency caesarean births (p=0.025).

There were no intrapartum or neonatal deaths, but two antenatal stillbirths occurred while awaiting VBAC (39+6, 40+3 weeks). Complete uterine rupture occurred in 4 cases (0.6%), requiring treatment for hypoxic ischaemic encephalopathy in two infants. Both had normal neurological development at follow-up.

The most common reason for CS in failed VBAC attempt was abnormal cardiotocograph (CTG) (Figure 1). Of VBAC-failure CS, 51 (27%) occurred within 1 hour of admission; commonest reasons were maternal choice 51%, abnormal CTG 29% and unfavourable cervix 12%. Reasons for emergency CS after 1 hour were first-stage failure-to-progress 58% and abnormal CTG 25%.

DISCUSSION

VBAC success rate of 72% is consistent with reported rate in similar centres.[2] Uterine rupture rate of 0.6% falls within the predicted 5-7 per 1000 VBAC attempts described in the literature.[1] While VBAC attempts directly avoided 485 caesareans, two antenatal stillbirths and two cases of rupture-related birth asphyxia occurred.

While overall, abnormal CTG was the commonest reason for VBAC-failure CS, more than 1 in 4 failures occurred within 1 hour of admission, with half due to maternal choice. This information aids the planning of VBAC-labour care.

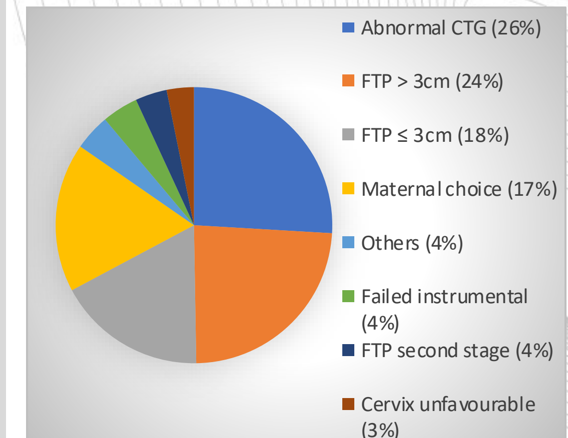

Figure 1: Reason for Emergency Caesarean in Planned VBAC Attempt, n = 186

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