Vaginal birth after Caesarean section: a practical evidence-based approach

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Abstract

Around 10% of the obstetric population have experienced prior Caesarean delivery. This article provides a practical evidence-based approach to the antenatal and intrapartum management of such women. A gestation-specific strategy is suggested. Women with an uncomplicated pregnancy and single previous lower segment Caesarean delivery may be managed in shared community care following counselling by a consultant midwife. It is important to provide complete informed consent detailing the risks and benefits for the woman that are individualised to her circumstances. It is estimated that planned vaginal birth after Caesarean exposes the woman to an additional 0.25% risk (or 1 in 400) for experiencing an adverse perinatal outcome (antepartum stillbirth, delivery-related perinatal death or hypoxic ischaemic encephalopathy) compared with opting for elective repeat Caesarean section (ERCS). It is likely that this risk is significantly reduced for women who opt for ERCS at the start of the 39th week; however, direct evidence to support this is lacking.

Keywords Caesarean section; Caesarean section, repeat; placenta praevia; pregnancy outcome; uterine rupture; vaginal birth after Caesarean

Introduction

This article is based on, and updates, the evidence presented in the Royal College of Obstetricians and Gynaecologists (RCOG) Green-top Guideline 'Birth after previous Caesarean birth' (RCOG, February 2007). The definitions of terms used are detailed in Table 1.

Limitations of data

Presently, there are no published randomised controlled trials (RCTs) comparing planned vaginal birth after Caesarean section (VBAC) against planned elective repeat Caesarean section (ERCS), although an RCT has recently begun recruitment. Evidence for these interventions is obtained mainly from retrospective non-randomised studies making their conclusions less reliable. However, studies produced by the National Institute of Child Health and Human Development (NICHD) have overcome many of the shortcomings of previous studies through its analysis of a large multicentre prospective cohort of around 18,000 planned VBACs and 16,000 ERCSs with standardised inclusion criteria and outcomes.

Definitions used in article

Planned vaginal birth after Caesarean (VBAC)	Planned VBAC refers to any woman who has experienced a prior Caesarean birth who plans to deliver vaginally rather than by elective repeat Caesarean section (ERCS)
Successful and unsuccessful planned VBAC	A vaginal delivery (spontaneous or assisted) in a woman undergoing planned VBAC indicates a successful VBAC. Delivery by emergency Caesarean section during the labour indicates an unsuccessful VBAC
Uterine rupture	Disruption of the uterine muscle extending to and involving the uterine serosa or disruption of the uterine muscle with extension to the bladder or broad ligament
Uterine dehiscence	Disruption of the uterine muscle with intact uterine serosa
Term perinatal mortality	Combined number of stillbirths (antepartum and intrapartum) and neonatal deaths (death of a live born infant from birth to age 28 days) per 10,000 live births and stillbirths at or beyond 37 weeks gestation. Term perinatal mortality rates exclude deaths due to foetal malformation unless otherwise stated
Term delivery-related perinatal death	Combined number of intrapartum stillbirths and neonatal deaths per 10,000 live births and stillbirths at or beyond 37 weeks gestation. Delivery-related perinatal mortality rates exclude antepartum stillbirths and deaths due to foetal malformation unless otherwise stated
Neonatal respiratory morbidity	Combined rate of transient tachypnoea of the newborn (TTN) and respiratory distress syndrome (RDS)

Table 1

Prevalence of women with previous Caesarean birth

The overall Caesarean delivery rate in England for 2006–2007 was 24.3%; the majority were emergency (14.7%) rather than elective (9.5%) Caesarean births. Hence, around 10% of the obstetric population has experienced prior Caesarean delivery.

A national audit, conducted in England and Wales in 2000–2001, reported that the primary Caesarean section rate

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(rate for women who have not had a previous Caesarean section, regardless of parity) was 16.7%, whereas, the repeat Caesarean section rate (rate for women who have had at least one previous Caesarean delivery) was 67.2%.

Therefore, to reduce the overall Caesarean delivery rate, strategies are required that prevent the primary Caesarean delivery, improve uptake of VBAC and improve planned VBAC success. It has been estimated that increased uptake of planned VBAC could decrease the overall Caesarean delivery rate by around 5%. Recent data suggest that VBAC may not be as safe as originally thought. This coupled with the safety of ERCS at 39 weeks gestation, reduced hospital recovery time of ERCS (one-quarter spent 4 days or more recovering in hospital in 2006–2007, compared with just under one-third in 2005–2006) and current preference for lower parity, may encourage women with previous Caesarean birth to opt for ERCS rather than VBAC.

Management

Pregnant women who have previously undergone Caesarean delivery are considered high-risk pregnancies. Hence, their antenatal care should be consultant obstetrician-led and their intrapartum care be conducted in a suitably resourced obstetrician-led hospital labour ward.

- Antenatal care aims to determine the mode of delivery (either planned VBAC or ERCS) for such women and optimise their health in order to achieve best outcomes for mother and foetus.
- Intrapartum care varies for VBAC and ERCS modes of delivery and is individualised to the particular clinical circumstances of the mother and her pregnancy to ensure best outcomes for mother and foetus.

Overview of antenatal care

A suggested antenatal management plan, from initial booking of the pregnancy to delivery, is depicted in Figure 1. Essential elements of the plan include:

12–16 weeks	Provision of written patient information on delivery options (VBAC and ERCS) early on in the pregnancy
16–28 weeks	Consultant obstetrician or consultant midwife (in units where one is available)-led antenatal counselling appointment for women with uncomplicated singleton pregnancies and single previous lower segment Caesarean delivery. Documented counselling of risks and benefits of VBAC vs ERCS. A review of the previous Caesarean delivery, with access to the woman's previous obstetric medical record
32 weeks	Consultant obstetrician-led assessment of women with previous Caesarean delivery who are identified to have a low-lying placenta at 20-week and 32-week obstetric ultrasound. The aim is to provide adequate time for investigation and management of possible placenta accreta
36 weeks	Consultant obstetrician-led assessment to determine mode of delivery for women who: opted for ERCS; are undecided on mode of delivery; or have complicating obstetric and medical disorders (e.g. two previous Caesarean deliveries, multiple pregnancy etc.)
39 weeks	Perform ERCS. If ERCS is required prior to 39 weeks, consideration should be given to administering prophylactic antenatal corticosteroids
41 weeks	Consultant-led review for women who had opted for planned VBAC but have not gone into spontaneous labour. Options considered and documented are: expectant management, membrane sweep and induction of labour or ERCS.

Consultant midwife and consultant obstetrician review

Multiparous women with single previous lower segment Caesarean delivery, with or without a history of vaginal delivery,

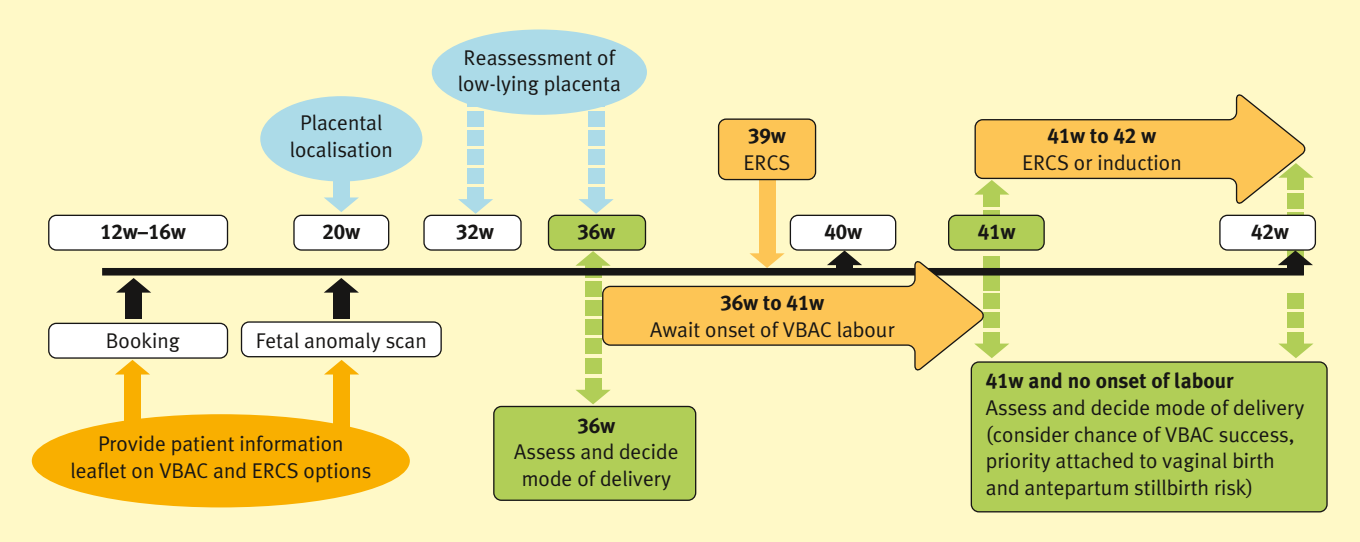

Figure 1 Plan of care for singleton uncomplicated pregnancy with previous Caesarean delivery. VBAC, vaginal birth after Caesarean; ERCS, elective repeat Caesarean section.