Clinical Practice Guideline Vaginal Birth After Caesarean (VBAC)
Peninsula Care Goal Safe

Purpose

Women are afforded the right to make an informed decision regarding their mode of birth following a previous caesarean section. A woman has the choice between an elective repeat caesarean section or vaginal birth. Each mode has its own inherent risks and benefits to both the mother and baby. Each woman's risk profile is different and individual factors are taken into account during informed counselling. The purpose of this CPG is to ensure women are given evidence-based information in order to make a safe and woman-centred decision regarding their mode of birth following previous caesarean section.

Definitions

ARM	Artificial rupture of membranes
CTG	Cardiotocograph
ERCS	Elective repeat caesarean section
HIE	Hypoxic ischaemic encephalopathy. Neurological changes in the few days after birth caused by a lack of oxygenation to the brain
LUSCS	Lower uterine segment caesarean section
TOL	Trial of Labour
Uterine rupture	A disruption of the uterine muscle extending to and involving the uterine serosa or disruption of the uterine muscle with extension into bladder or broad ligament.
Uterine scar dehiscence	A disruption of the uterine muscle with intact uterine serosa.
VBAC	Vaginal birth after caesarean section

Primary Caesarean Section

Discussion of future mode of birth is ideally introduced in the post-partum period following a woman's primary caesarean section. Debrief and documentation of the birth experience should include suitability for labour in their subsequent pregnancy. The surgeon performing a woman's primary caesarean section should make a note in her operative record of her suitability for future labour and vaginal birth. Optimisation of maternal characteristics such as obesity and the inter-pregnancy interval should also be discussed.

Information and decision making

Women who have had a previous caesarean section should have the opportunity to make informed decisions about their care and treatment, in partnership with the clinicians providing their care.

Good communication between clinicians and women is essential. Treatment, care and information provided should: take into account women's individual needs and preferences be supported by evidence-based, written information tailored to the needs of the individual woman be culturally appropriate

be accessible to women, their partners, support people and families and take into accountany specific needs such as physical or cognitive disabilities or limitations to their ability to understand spoken or written English.

The following information is available:

Vaginal Birth After Caesarean Section (RANZCOG)

Birth Options After Caesarean (RCOG)

Antenatal Counselling

All women with a prior lower uterine segment caesarean section (LUSCS) should have the birth options of vaginal and elective caesarean discussed. This discussion should be held early in the course of their antenatal care.

Attempts should be made to acquire the operative record/s to ascertain the indication for, surgical findings, outcome and post-operative course of previous caesarean section/s to aid counselling.

Provide women with information and advice on:
contraindications to and precautions for VBAC
factors that affect the likelihood of successful VBAC
benefits associated with modes of birth
risks of uterine rupture
other maternal, fetal and newborn complications

The decided mode of birth should be documented in the Birth Outcome Summary (BOS) prior to 36 weeks' gestation. A decision regarding the planned mode of birth in the event of spontaneous labour prior to a planned elective caesarean, should also be discussed and documented in the woman's BOS.

Discuss a plan if spontaneous labour does not occur by 40 weeks. This may include induction (see counselling below) or an elective caesarean at 41 weeks or a date agreed between the woman and the obstetrician.

Individual preferences, previous labour factors (if applicable) and risk factors must be taken into account and discussed with the woman.
The following calculator is a useful tool that calculates an individual woman's predicted chance of success of vaginal birth, as a percentage, following one previous caesarean section.

https://mfmunetwork.bsc.gwu.edu/PublicBSC/MFMU/VGBirthCalc/vagbirth.html

Counselling should include the rationale and recommendations regarding intravenous access and continuous CTG monitoring when in active labour. Women may make an informed decision to decline this. They should have the rationale for these interventions, as well as the potential risks of delayed recognition and management of complications such as haemorrhage or uterine rupture, explained and documented. Please refer to the **Mode of Birth After Caesarean: Counselling Proforma** which should be shown and discussed with all women following a previous LUSCS.

Favouring Success	Reducing Success
• **Previous vaginal birth** • **Previous successful VBAC** • **Spontaneous onset of labour <41 weeks** • **Uncomplicated pregnancy course** • **Reduction of BMI between CS and attempted VBAC** • **Maternal age <30yrs** • **BMI <30** • **Prior indication not related to labour dystocia** • **Cervical dilatation >4cm on admission**	• Previous CS for labour dystocia • Induction of labour • Co-existing placental, fetal or maternal compromise/co-morbidities • BMI≥30 • Fetal macrosomia ≥4000g • Advanced maternal age • Short stature • Prolonged pregnancy beyond 41 weeks

Prerequisites for birth option of VBAC

Women should be reassured that support for labour following a previous caesarean will take place in a suitably staffed and equipped birthing suite, with continuous intrapartum care and monitoring and available resources for prompt emergency caesarean section and neonatal resuscitation should a complication such as uterine rupture occur.

Contraindications

- placenta praevia and/or accreta
- vasa praevia
- compound presentations
- twin pregnancy where the presenting twin is breech
- previous classical uterine incision
- previous myomectomy or hysterotomy including extended J or T incisions at caesarean
- maternal decline of labour and potential vaginal birth
- three or more previous caesareans

It is noted that, even in the presence of apparent contraindications, such as three previous caesareans, a case by case discussion needs to occur and that women have a right to decline a caesarean. In situations of a woman requesting VBAC in the presence of a contraindication, a consultant review and a second senior opinion is advised. Careful documentation around the discussion, the benefits and risks is essential.

Cautions but not absolute contraindications

- less than 18 months interbirth interval (time from CS to estimated birth date)
- single layer closure at previous caesarean
- two previous caesareans (see below)
- twin pregnancy (see below)
- suspected fetal macrosomia

Indications

- absence of contraindications (see above)
- informed consent
- documented discussion of the maternal and fetal risks

Benefits and Risks

The following tables outline the benefits and risks of VBAC and elective repeat caesarean section.

Vaginal Birth after Caesarean: Maternal Benefits and Risks

Benefits	Risks
• Less maternal morbidity for index pregnancy and future pregnancies • Avoidance of major abdominal surgery • Earlier mobilisation and discharge from hospital • Maternal satisfaction in achieving vaginal birth as desired • Lower maternal mortality (4:100 000)	• Risk of uterine rupture is increased if the interbirth interval is less than 24 months. • Increased morbidity of emergency caesarean section compared to elective repeat caesarean section if unsuccessful in achieving vaginal birth • Uterine rupture 5-7:1000 • Pelvic floor trauma • Hysterectomy in the event of uterine rupture (0.5 – 2 per 1000)

Vaginal Birth after Caesarean: Fetal/Neonatal Benefits and Risks

Benefits	Risks
• Higher rates of initiation of breast feeding • Reduction in risk of neonatal respiratory morbidity 2-3% • Less fractured skin-to-skin time compared with caesarean section	• Increased perinatal loss compared with ERCS at 39 weeks Stillbirth after 39 weeks gestation (due to longer gestation; 1:1000) Intrapartum or neonatal death (0.4:1000) • HIE risk - related to labour, and birth (0.8:1000)

Elective repeat Caesarean at 39 weeks: Maternal Benefits and Risks

Benefits	Risks
• Reduced maternal risks associated with emergency caesarean section. • Avoidance of trauma to the pelvic floor. • Convenience of planned birth time.	• Surgical morbidity and complications both with index pregnancy and further pregnancies including placenta praevia • Higher maternal mortality (13:100 000)

Elective repeat Caesarean at 39 weeks: Fetal Benefits and Risks

Benefits	Risks
• Avoid late stillbirth (1:1000 after 39 weeks) due to being pregnant for an additional 2 weeks • Reduced perinatal mortality and morbidity (HIE, trauma) related to labour, delivery and scar rupture. (0.1:1000)	• Increased risk of neonatal respiratory morbidity – low incidence ≥ 39 weeks. 4-6% • Lower rates of initiating breast feeding

Discussion of the surgical risks of elective repeat LUSCS (ERCS) must also be included when counselling women regarding their birth options following a previous caesarean section. The rare risk of placental adhesive disorders must also be discussed, especially if the woman is planning a large family as this risk increases the greater the number of caesarean births.

Complications by Intended Mode of Birth

(Maternity eHandbook)

	VBAC	ELUSCS
Maternal complications		
Blood transfusion	2 per 100 / 2.0%	1 per 100 / 1.0%
Maternal mortality	4 per 100,000 / 0.004%	13 per 100,000 / 0.013%
Serious complications in future pregnancies	N/A	Increased likelihood of placenta praevia and morbidly adherent placenta
Endometritis	No significant difference in risk	
Fetal and Newborn Complications		
Antepartum stillbirth whilst awaiting spontaneous labour beyond 39+0 weeks	10 per 10,000 / 0.1%	N/A
Delivery-related perinatal mortality	0.4:1000	0.1:1000
Transient respiratory morbidity	2-3 per 100 / 2.0-3.0%	4-6 per 100 / 4.0-6.0%
Hypoxic ischaemic encephalopathy (HIE)	8 per 10,000 / 0.08%	<1 per 10,000 / <0.01%

Induction of Labour following previous LUSCS

Spontaneous onset of labour is preferable to induction of labour for women wishing for a vaginal birth following a previous caesarean section. However, induction of labour can be

offered. Women should be advised of the increased risk in maternal and fetal morbidity with induction versus spontaneous labour, albeit the absolute risk being low.

Induction is safely achieved with cervical ripening with the use of a Cook's or Foley catheter. Cervical ripening with prostaglandin gel (Prostin) is not advised.

Augmentation or induction of labour with oxytocin increases the risk of uterine rupture.

Augmentation with oxytocin in a woman in spontaneous labour is not recommended as it confers a 10 fold increase in uterine rupture (0.19% V 1.9%) (Dekker, 2010). If oxytocin is used in this setting careful counselling about the benefits and additional risks should be discussed and documented.

The use of oxytocin following artificial rupture of the membranes (ARM) must be supported by the on call obstetrician. It is advisable to co-ordinate induction of labour on a day in which the obstetric consultant on call is accepting of the use of oxytocin.

Labour management

- The Consultant on call should be informed of a woman labouring with a previous history of caesarean section
- Large bore IV access is advised
- FBE/G&H should be obtained on insertion of IV cannula
- Artificial rupture of membranes is advised to minimise duration of active labour.
- Continuous fetal monitoring is advised from the onset of uterine contractions and for the duration of labour.
- Progress of labour should be closely monitored and delay in progress in the first and/or second stage of labour should be escalated to senior obstetric staff. Assessment of progress is advised 4 hourly in the first stage of labour and 2 hourly from 7cm dilatation.
- The use of oxytocin to augment labour is at the discretion of the consultant on call (see above).
- Abnormalities in maternal and/or fetal monitoring should be escalated to the ANUM and senior obstetric staff.
- Epidural anaesthesia is not contraindicated.

Clinical Symptoms and Signs of Uterine Rupture

The risk of uterine rupture is 5-7 per 1000 trials of labour following caesarean section. Prompt diagnosis followed by expeditious laparotomy and resuscitation is essential to reduce the associated morbidity and mortality of both the mother and neonate.

The clinical symptoms and signs that should alert to uterine rupture are:
Maternal tachycardia, hypotension or shock
Continuous abdominal/scar tenderness/pain
Vaginal bleeding
Haematuria

Abnormal CTG
Abnormal progress
Sudden depletion of uterine contractions
Loss of station of the presenting part on vaginal examination
Chest pain / shoulder tip pain

It is appropriate to have a lower threshold for performing a caesarean section in the presence of an abnormal CTG. A fetal scalp sample may give a false reassurance and should be used with caution and discussion with the consultant.

The incidence of uterine rupture is greater for women who are morbidly obese (BMI ≥40); with an incidence of 2.1% versus 0.9% (p = 0.003) for women with a BMI <40.

The incidence of uterine rupture is higher with induction or augmentation of labour.

Uterine Scar Rupture Related Complications

(per 1000 women attempting vaginal birth)

(summary of three series)

Complication	Risk per 1000 attempted VBAC
Uterine rupture	5-7 per 1000
Perinatal death	0.4 – 0.7 per 1000
Maternal death	0.02 per 1000
Major maternal morbidity Hysterectomy Genitourinary injury Blood transfusion	Approx. 3 per 1000 0.5 – 2 per 1000 0.8 per 1000 1.8 per 1000
Major perinatal morbidity Fetal acidosis (cord pH <7.0) HIE	Approx. 1 per 1000 1.5 per 1000 0.4 per 1000

Twin Pregnancy

A cautious approach is advocated in twin pregnancies who are considering planned VBAC. There is a paucity of evidence regarding the safety and efficacy of planned VBAC in a twin pregnancy.

The largest study (Ford et al, 2006) reported a successful VBAC rate of 45% of 1850 twin pregnancies undergoing planned VBAC and a scar rupture rate of 0.9%. This study did not provide any neonatal outcome data.

Vaginal Birth Following Two Previous Caesarean Sections

Studies comparing outcomes of planned VBAC for patients who have had two or more Caesarean sections generally have reported significantly lower success rates for achieving

VBAC, higher rates of uterine rupture or scar dehiscence, and a greater incidence of major maternal morbidity when compared to patients with only one previous Caesarean section. A meta-analysis (Tahseen & Griffiths, 2010) reported a lower success rate for VBAC (71% vs 77%,p<0.001) and higher rupture rate (1.6% vs 0.7%, p<0.001) when the

outcomes of planned VBAC after two previous caesarean sections were compared to those patients with one previous caesarean section. The meta-analysis reported a similar maternal morbidity for the patients undergoing VBAC after two previous caesarean sections compared with those undergoing a third ERCS

RCOG state that a woman with two previous uncomplicated caesarean sections in an uncomplicated pregnancy at term, “who has been fully informed by consultant Obstetrician may be considered suitable for planned VBAC”.

Postpartum Care

Offer the woman the opportunity to debrief with clinicians involved in her intrapartum care
Offer referral to social work, pastoral or spiritual care as indicated
Provide information about planning for the next birth
Ensure that the woman, her GP and VMO receive a complete discharge summary

Key Points for Shared Care GPs

- Women who have had a previous caesarean section should have their plans and expectations discussed with the obstetric team early in their pregnancy.
- Women who have had a previous caesarean section are in group B for their antenatal model of care and may be suitable for shared care with their GP or midwife.
- They should be referred early in their pregnancy for an obstetric planning visit at 14-16 weeks.
- A clear plan will be made after discussion with the woman and this will be documented in the Victorian Maternity Record (VMR).
- Appointments will be made for a review at 32 and 36 weeks.

Key Aligned Documents

Peninsula Health Policy – Hand Hygiene and Aseptic Technique
Clinical Practice Guideline - Fetal Surveillance
Clinical Practice Guideline - Classification of Urgency for C/S
Clinical Practice Guideline - Induction of Labour
Clinical Practice Guideline - Normal Labour (Care during & following)
Clinical Practice Guideline - Third Stage of Labour – Management
Clinical Practice Guideline - Post Partum Haemorrhage
Infection Control Clinical Practice Guideline - Blood and Body Substance Exposure Prevention and Management of Exposure

References

1) Better Safer Care Victoria Maternity eHandbook. Referenced September 2019

2) The Royal Australian and New Zealand College of Obstetricians and Gynaecologists. College Statement C-Obs 38: Birth after Caesarean Section 2019.

3) Hibbard JU, Gilbert S, Landon MB, Hauth JC, Leveno KJ, Spong CY, et al. Trial of labour or repeat cesarean delivery in women with morbid obesity and previous cesarean delivery. Obstet Gynecol 2006; 108 (1): 125-33.

4) Landon MB, Leindecker S, Spong CY, Hauth JC, Bloom S, Varner MW, et al. The MFMU Cesarean Registry: factors affecting the success of trial of labor after previous cesarean delivery, Am J ObstetGynecol. 2005;193(3 Pt 2):1016-23.

5) Smith GC, White IR, Pell JP, Dobbie R. Predicting cesarean section and uterine rupture among women attempting vaginal birth after prior cesarean section, PLoS Med. 2005;2(9):e252

6) Bujold E, Hammoud AO, Hendler I, Berman S, Blackwell SC, Duperron L, et al. Trial of labor in patients with a previous cesarean section: does maternal age influence the outcome?, Am J Obstet Gynecol. 2004;190(4):1113-8.

7) Coassolo KM, Stamilio DM, Pare E, Peipert JF, Stevens E, Nelson DB, et al. Safety and efficacy of vaginal birth after cesarean attempts at or beyond 40 weeks of gestation, Obstet Gynecol. 2005;106(4):700-6.

8) Appleton B, Targett C, Rasmussen M, Readman E, Sale F, Permezel M. Vaginal birth after caesarean section: an Australian multicentre study. VBAC Study Group, Aust N Z J Obstet Gynaecol. 2000; 40 (1): 87-91.

9) Landon MB, Hauth JC, Leveno KJ, Spong CY, Leindecker S, Varner MW, et al. Maternal and perinatal outcomes associated with a trial of labor after prior cesarean delivery, N Engl J Med. 2004;351(25):2581-9.

10) Chauhan SP, Martin JN, Jr., Henrichs CE, Morrison JC, Magann EF. Maternal and perinatal

11) complications with uterine rupture in 142,075 patients who attempted vaginal birth after caesarean delivery: A review of the literature, Am J Obstet Gynecol. 2003;189(2):408-17.

12) Dekker GA, Chan A, Luke CG, Priest K, Riley M, Halliday J, et al. Risk of uterine rupture in

13) Australian women attempting vaginal birth after one prior caesarean section: a retrospective

14) population-based cohort study, BJOG. 2010;117(11):1358-65.

15) Guise JM, Eden K, Emeis C, Denman MA, Marshall N, Fu RR, et al. Vaginal birth after cesarean: new insights, Evid Rep Technol Assess (Full Rep). 2010(191):1-397.

16) Royal College of Obstetricians and Gynaecologists. Green Top Guideline No 45. Birth after Previous Caesarean Birth 2015.

17) Tahseen S, Griffiths M. Vaginal birth after two caesarean sections (VBAC-2)-a systematic review with meta-analysis of success rate and adverse outcomes of VBAC-2 versus VBAC-1 and repeat (third) caesarean sections, BJOG. 2010;117(1):5-19.

18) Ford AA, Bateman BT, Simpson LL. Vaginal birth after cesarean delivery in twin gestations: a large, nationwide sample of deliveries, Am J Obstet Gynecol. 2006;195(4):1138-42.

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