VBAC - VAGINAL BIRTH AFTER ONE PREVIOUS LOW SEGMENT CESAREAN SECTION

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Acknowledgements

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Preamble

Guidelines outline recommendations, informed by both the best available evidence and by midwifery philosophy, to guide midwives in specific practice situations and to support their process of informed decision-making with clients. The midwifery philosophy recognizes the client as the primary decision maker in all aspects of her care and respects the autonomy of the client (1).

The best evidence is helpful in assisting thoughtful management decisions and may be balanced by experiential knowledge and clinical judgment. It is not intended to demand unquestioning adherence to its doctrine as even the best evidence may be vulnerable to critique and interpretation.

The purpose of practice guidelines is to enhance clinical assessment and decision-making in a way that supports practitioners to offer a high standard of care. This is supported within a model of well-informed, shared decision-making with clients in order to achieve optimal clinical outcomes.

Background

The College of Midwives of British Columbia (CMBC) supports registered midwives to provide autonomous primary care for women planning a vaginal birth after one previous lower segment cesarean section (C/S) (2), and to provide care to women with more than one previous lower segment C/S with obstetrical consultation. Current evidence supports women in planning vaginal birth after cesarean section (VBAC) despite a small but increased risk of uterine rupture, a complication with potentially serious consequences for both mother and fetus/neonate (3, 4, 5).

Factors influencing VBAC success

The rate of successful VBAC is quoted by the SOGC to be 50-85% (6). A recent American meta-analysis demonstrated an overall VBAC success rate of 74% (4). Factors associated with increased likelihood of VBAC success include (4, 6):

a) previous vaginal birth or VBAC (4, 5);
b) smaller fetus (4);
c) non-recurring reason for previous C/S (4);

d) spontaneous onset of labour (4);
e) favourable cervix (including greater cervical dilation and effacement 75-100%) at admission or time of rupture of membranes (4);
f) previous labour before the primary C/S (7).

Factors influencing uterine rupture

The factors which are thought to increase the risk of uterine rupture include (4, 6):

a) single vs. double layer closure (8);
b) short interval from previous C/S (<18-24 months) (5);
c) more than one previous C/S (4, 5);
d) induction of labour (9, 4);
e) oxytocin augmentation (5).

Incidence and Complications of Uterine Rupture

Maternal and fetal or newborn complications can arise in pregnancies affected by a scarred uterus, regardless of route of birth. The incidence of uterine rupture for all women with a prior cesarean delivery is 0.3%, regardless of mode of delivery (4). The risk of rupture increases with a trial of labour (TOL); a recent meta-analysis reported a pooled rate of 0.47%, versus 0.026% for an Elective Repeat Cesarean Section (ERCS) (4).

Perinatal outcomes: Related to the slightly higher risk of uterine rupture associated with planned VBAC, there is an increased risk of perinatal death of 1.3/1000 with a TOL versus 0.5/1000 for ERCS (4). In the context of confirmed uterine rupture, the perinatal death rate was found to be 6.2% across all gestational ages, although the rate decreased to 0-2.8% when including only studies with term deliveries (4). There is insufficient evidence to conclude whether there are variances in neonatal brain injury, neonatal trauma or respiratory distress by mode of birth (4). The majority of the evidence supports that there are no significant differences in neonatal sepsis, Apgar scores, or NICU admissions (4).

Maternal outcomes: Maternal mortality is very rare, but increased with ERCS (13.4/100 000) versus TOL (3.8/100 000) based on studies at all gestational ages (4). There were no maternal deaths related to uterine rupture in the literature (4). The risk of hysterectomy following uterine rupture was found to range from 14-33% (4).

To put the rate of uterine rupture with planned VBAC into perspective, the probability of requiring an emergency C/S for other acute conditions (i.e. cord prolapse or antepartum hemorrhage) for any woman giving birth is approximately 2.7%, which is significantly higher than the risk of requiring a C/S due to rupture with planned VBAC (10).

SIGNS AND SYMPTOMS OF UTERINE RUPTURE

Midwives must be aware of the signs and symptoms that may indicate partial or complete uterine rupture in labour (2):

- Sudden abnormal fetal heart pattern (i.e. loss of variability, bradycardia, tachycardia or decelerations)
- Unusual abdominal/uterine pain
- Cessation of contractions or incoordinate uterine activity
- Unexplained vaginal bleeding
- Hematuria
- A sudden onset of maternal tachycardia, hypotension or syncope
- Excessive fetal movement
- Fetal parts may be easily palpated through the abdominal wall
- Presenting part may be higher than previously palpated

SIGNS THAT MAY PRECEDE UTERINE RUPTURE:

- Inadequate progress (of cervical dilation or descent) despite good contractions
- Incoordinate uterine activity
- Maternal restlessness and anxiety
- Lower abdominal pain or suprapubic tenderness persisting between contractions

Contraindications

The SOGC (6) lists the following as contraindications to VBAC:

(a) Previous classical or inverted "T" uterine scar;
(b) Previous hysterotomy or myomectomy entering the uterine cavity;
(c) Previous uterine rupture;
(d) Presence of a contraindication to labour, such as placenta previa or malpresentation;
(e) The woman declines TOL and requests ERCS.

Antenatal preparation

In preparation for an attempted VBAC, the midwife should:

(a) Have a thorough informed choice discussion regarding VBAC (see section following) and document this discussion; review and discuss any concerns related to the previous C/S;
(b) Obtain a copy of the previous OR report to ensure there is nothing in the history which precludes the client from planning a VBAC;
(c) Document the type of incision (if available) from the previous surgery on Antenatal I or II; for example: "Operative Report reviewed, LSCS with double layer closure, no post-operative concerns";
(d) As per the CMBC's Indications for Discussion, Consultation and Transfer of Care (11), discuss the client's plan for a VBAC with another midwife and document this discussion in the antenatal records. An OB consult may also be appropriate. The Best Birth clinic is an option for further antenatal discussion between a client and Obstetrician around the decision to plan a VBAC or ERCS;
(e) Anesthesia consult should be done as per Anaesthesia guidelines for antenatal consult (13).

An informed choice discussion regarding VBAC should include:

(a) the risks and benefits of a TOL after previous C/S versus ERCS;
(b) the signs and symptoms of uterine rupture;
(c) a review of hospital policies regarding VBAC labour management;
(d) a review of the community standards for VBAC;
(e) information about the obstetrician led Best Birth clinic at BCWH where women planning VBAC receive standardized counseling regarding risks and benefits of TOL versus ERCS.

VBAC IN HOSPITAL

Labour management includes:

(a) Regular assessment of labour progress and maternal health, with particular awareness of the signs of impending or actual uterine rupture;
(b) Regular assessment of fetal health. The SOGC - BCPHP Fetal Health Surveillance guideline states that VBAC is an indication for continuous fetal monitoring as the most reliable first sign of uterine rupture is an abnormal fetal heart tracing (14). The CMBC's Fetal Health Surveillance guideline states that while intermittent auscultation is appropriate, more frequent monitoring may be considered depending on the midwife's assessment of the length, strength and frequency of contractions (2). The SOGC – BCPHP states that there should be a discussion with the woman about her wishes, concerns and questions regarding the benefits, limitations and risks of IA and EFM use in labour (14);
(c) Reasonable progress in effacement, dilation and descent every 2-4 hours in active labour.

BC Women's Hospital (BCW)

The BCW Acute Perinatal Program VBAC Guideline indicates that (15):

(a) a woman attempting VBAC should be admitted in active labour, not before;
(b) an obstetrician should be notified when the woman is admitted in labour;
(c) further consultation is at the discretion of the care provider;
(d) women attempting VBAC may not be admitted to SRMC;

(e) fetal health should be assessed by EFM;
(f) on admission, start a saline lock if IV access is predicted to be difficult;
(d) epidural is a reasonable choice for analgesia.

Providence Health Care, St. Paul's Hospital (SPH)

The SPH protocol (16) indicates that:

(a) the midwife requests an obstetrical consultation upon admission
(b) epidural analgesia is an option for women planning a VBAC
(c) a saline lock or IV start is indicated along with a CBC and type and screen
(d) EFM is indicated

VBAC AT HOME

The CMBC has a VBAC policy in place, the Guideline for Vaginal Birth after one Previous Low Segment Caesarean Section, for registered midwives when women are planning a home birth after previous cesarean section (2).

The guideline states that the following conditions make women unsuitable candidates for VBAC at home (2):

- History of C/S at or before 26 weeks;
- History of single layer closure;
- History of uterine infection or impaired uterine scar healing;
- Inter-pregnancy interval of less than 24 months;
- Ballotable head in active labour;
- Prolonged active phase of labour.

When planning a VBAC out of hospital, travel time to a hospital with C/S capabilities must be considered in light of the short period of time in which a C/S must be initiated when there is a uterine rupture (2). Women should consider distance to hospital and also road and weather conditions when planning a VBAC at home.

The midwife must initiate transport arrangements from home if:

- There are concerns about maternal or fetal well-being;
- The first stage of labour is prolonged;
- There is minimal progress in the first hour of active second stage pushing or within two hours of full dilation.

Signs or symptoms of impending or actual uterine rupture in a VBAC are indications for immediate transport to a hospital with C/S capabilities if in an out of hospital setting (2) and transfer of care to a physician. If uterine rupture is suspected at home, the midwife initiating transport should ask the hospital to prepare for an emergency C/S.

Labour management includes:

(a) Regular assessment of labour progress and maternal health, with particular awareness of the signs of impending uterine rupture (2);
(b) Fetal surveillance according to the CMBC VBAC & Fetal Health Surveillance guidelines as continuous fetal monitoring is not available (2, 12);
(c) Reasonable progress in effacement, dilation and descent every 2-4 hours in active labour (2);
(d) Close observation of blood loss in the hour immediately following delivery of the placenta (2).

Induction and Augmentation of Labour

The evidence suggests that the overall rate of VBAC following induction of labour with oxytocin or prostaglandins is 63%, or 54% with Foley catheter induction (4). The risk of uterine rupture increases with labour induction to 1.5% for women delivering at term or 1.0% for women delivering at any gestational age, and this risk rises to 3.2% when induction is used at a gestational age of greater than 40 weeks (4). However, when compared to TOL births that begin spontaneously, there is no further risk of uterine rupture until 40 weeks gestation at which point the risk of rupture increases to 1.8% following an induction of labour (4). The SOGC states that the following are acceptable methods of labour induction or augmentation for women planning a VBAC (6):

(a) Oxytocin induction or augmentation;
(b) Foley catheter induction.

Prostaglandins are associated with a higher risk of uterine rupture (2-2.45%) (3, 4); generally, they are no longer used as an induction agent. Misoprostol is contraindicated (6, 8).

Oxytocin augmentation
A large US meta-analysis examined the role of oxytocin used solely for augmentation in labour and determined a pooled success rate of 68% (4). In a study examining use of both oxytocin augmentation and/or Artificial Rupture of Membranes, a success rate of 74% was reported (17). The adjusted odds-ratio of uterine rupture was reported to be 2.41 (5).

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