The Saskatchewan College of Midwives (SCM) supports registered midwives in providing primary care for women planning a vaginal birth after one previous documented low-segment cesarean section (VBAC).[1] Care shall be provided in accordance with SCM Professional Practice Policy.

The rate of successful VBAC in Canada is between 50-85% (SOGC, 2005). In the 2009/2010 BC Perinatal Database Registry, BC midwives had a VBAC success rate of 80%[2].

Risk of Uterine Rupture

Current evidence supports women in choosing vaginal birth after cesarean section, despite a somewhat increased risk of uterine rupture, a complication with potentially serious consequences for mother and newborn.

Previous cesarean section is a factor in most (87% (Zwart JJ et al. BJOG 2009:116:1069) all reported cases of uterine rupture. Previous vaginal birth is a strong predictor and previous labour before a primary cesarean delivery is a weak predictor of a decreased risk of uterine rupture in a subsequent trial of labour (Marshak et al, 2000, Algert et al, 2008). Varying rates of uterine dehiscence[3] and rupture[4] in the presence of a previous cesarean section scar are reported in the literature.

One difficulty in looking at the literature is that the rate of rupture for VBACs with induced or augmented labour is often higher than for spontaneous labour, but these rates may be combined and reported as an overall rate. Whether the previous cesarean incision had a locked or unlocked single layer closure or double layer closure, another factor thought to affect the rate of rupture, is also not always addressed. Another difficulty is that the rate of catastrophic rupture, where the life of mother and infant are in serious jeopardy, is more difficult to determine as this event is often included with the more common and much less worrisome dehiscence. Overall VBAC research remains of limited value in predicting risk of symptomatic uterine rupture.

The general consensus on the rate of uterine rupture in spontaneous labour with one lower segment incision is 0.4%, and in augmented labour is 0.9%. The overall rate of uterine rupture reported in the peer reviewed VBAC literature is 0.7%. The rate for women with 2 or more cesarean scars increases to 0.9% (Landon, 2006). Overall rates of uterine rupture for VBAC have been reported as low as 0.2% to as high as 0.7% depending on which factors in a woman's health history were included in studies (Nahum, 2012).

[1] The SCM Policy *Mandatory Discussion, Consultation and Transfer of Care* indicates that a physician consultation is required for a client with a history of more than one lower segment caesarean section.

[2] BC Perinatal Database Registry Annual Report March 31, 2010.

[3] Scar dehiscence is the breakdown and reopening of the old cesarean scar. Most dehiscences involve minor tearing around the scar, are asymptomatic and heal well. Many go undetected.

[4] A true uterine rupture in a VBAC is a scar dehiscence that is large enough to need surgical repair. It is almost always symptomatic, with the most common first indicator being fetal distress. Maternal shock from blood loss is also possible.

The midwife should inform a client wishing to have a VBAC in either a hospital or out-of-hospital setting, of the risk of uterine rupture. The informed choice process for considering VBAC, including choice of birth place, or elective repeat cesarean delivery should be evidence-based, should minimize bias and include the preferences of pregnant women. A copy of this guideline or an alternate written client handout should be offered. Midwives should always request and review operative reports of previous cesarean sections as well as records of previous obstetric history.

Clients with a classical or T-incision scar as a result of a previous caesarean section, are at a higher risk for uterine rupture, therefore are not suitable candidates for midwifery care for the purpose of VBAC.

Considerations for Choice of Birth Place

If trial of labour after caesarean section is to be done at a location that is not a hospital where there is caesarean section capability, despite the increase of risk, it should be done with the least likelihood of scar disruption and the greatest likelihood of achieving vaginal birth. This requires careful selection and advice while respecting the client's preference.

Many women with a history of previous cesarean section with no contraindications to VBAC will be comfortable having a subsequent vaginal birth in hospital with midwifery care. Hospital birth in a facility with cesarean section capability will certainly offer the most timely access to emergency cesarean section in the event of uterine rupture. However, some VBAC women will come to midwives requesting home birth. Clients with the following conditions may be candidates for vaginal birth in hospital, but should be advised that they are NOT suitable candidates for an out-of-hospital birth:

- History of cesarean section at or before 26 weeks
- History of single layer closure (Bujold et al, 2010, Zelop, 2012)[5]
- History of infection or impaired uterine scar healing
- Inter-delivery interval of 18-24 months or less (Bujold et al, 2010)[6]
- Ballotable head in active labour in current pregnancy
- Prolonged active phase of labour in current pregnancy
- A woman whose indication for a prior caesarean section was failure of descent in the second stage of birth.
- Women who have not ever had a vaginal delivery
- Where midwife does not have access to operative reports of the previous caesarean section and obstetrical history.

[5] Locked single layer closure may be associated with greater risk of uterine rupture than an unlocked single layer closure or a double layer closure. However the evidence is limited and further research is required. A two layer uterine closure is recommended for all women considering a future trial of labour after a previous cesarean delivery.

[6] VBAC candidates with inter-delivery interval of 18-24 months should be advised that they may be at increased risk of uterine rupture however the evidence on this time frame remains unclear.

Time and Distance – An additional risk

Despite the relatively small risk, true uterine rupture is a major obstetrical complication with potentially grave or lethal consequences for both mother and newborn. Being able to access a cesarean section quickly is very important. There is evidence that suggests that if birth cannot occur between 10 to 37 minutes after a true uterine rupture then fetal death or serious permanent injury is a likely outcome (Nahum, 2012). When planning a VBAC out-of-hospital, the time it will take to travel to a hospital with cesarean section capabilities must be considered in the light of this small window of time in which one must initiate a cesarean when there is a uterine rupture. Distance to a hospital with cesarean section capability and road and weather conditions are all factors that need to be considered by any woman thinking about planning a VBAC either in an out-of-hospital setting or in a hospital without cesarean section capabilities.

Midwives should discuss these additional risks with their clients and advise them about their local hospital's ability to respond to emergency situations.

Client Informed Choice Discussions

Antenatal client informed choice discussions and teaching should include:

a) concerns related to previous cesarean section;
b) possibility of repeat cesarean section;
c) signs and symptoms of uterine rupture;
d) reasons to consult or transport to hospital during labour;
e) distance to a hospital with cesarean section capabilities;
f) community standards for vaginal birth after cesarean section[7].

Documentation of the discussion between the midwife and client of the risks and benefits of VBAC should be made on the antenatal record.

Labour Management

Labour management for VBAC should include:

a) regular assessment of labour progress and maternal health, with particular awareness of the signs of impending uterine rupture;
b) regular assessment of fetal health according to the employer's policies and guidelines for Fetal Health Surveillance in Labour, with particular awareness of the signs of impending uterine rupture;
c) reasonable progress in effacement, dilation and descent every 2-4 hours in active labour;
d) if labour is occurring out-of-hospital, initiation of transport to hospital if
   - there are concerns about maternal or fetal well-being, including any signs which could indicate impending or actual uterine rupture,
   - the first stage of labour is prolonged, or
   - there is minimal progress in the first hour of active second stage pushing or within two hours of full dilation; and
e) close observation of blood loss in the hour immediately following delivery of the placenta.

[7] As informed by such documents as SOGC guidelines.

Signs that may occur with Impending Uterine Rupture

- Inadequate progress (of cervical dilation or descent) despite good contractions
- Incoordinate uterine activity
- Restlessness and anxiety
- Lower abdominal pain or suprapubic tenderness between contractions
- Hematuria
- Bandl's ring
- Abnormal fetal monitoring

Signs that may occur with Complete or Partial Rupture

Midwives must be aware of the signs and symptoms that may indicate uterine rupture in labour. (Rupture of the uterus prior to labour is a rare event and usually involves a classical scar rather than a low-segment scar.)

- Sudden abnormal fetal monitoring - tachycardia, bradycardia or decelerations (prolonged, late or recurrent variable decelerations are often the first signs of uterine rupture)
- Unusual abdominal/uterine pain
- Cessation of contractions or incoordinate uterine activity
- Unexplained vaginal bleeding
- A sudden onset of maternal tachycardia and hypotension
- Excessive fetal movement
- Fetal parts may be easily palpated through the abdominal wall
- Presenting part may be higher than previously palpated
- Signs or symptoms of shock

Signs or symptoms of impending or actual uterine rupture in a VBAC client are indications for immediate transport to hospital and physician consultation. Transfer of care will be required unless rupture is ruled out on consultation. If uterine rupture is suspected, the midwife initiating transport or seeking consultation should ask the hospital to prepare for an emergency cesarean section.

Incomplete rupture may also cause postpartum hemorrhage following vaginal birth. If blood loss and/or signs of shock are unexplained in the immediate postpartum, or the mother fails to respond to treatment, the possibility of rupture should be considered.

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