

GUIDELINE FOR VAGINAL BIRTH AFTER ONE PREVIOUS LOW SEGMENT CAESAREAN SECTION

The College of Midwives of British Columbia supports registered midwives in providing primary care for women planning a vaginal birth after one previous low-segment caesarean section (VBAC).¹

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

Previous caesarean section is a factor in somewhat less than half of all reported cases of uterine rupture. Varying rates of uterine dehiscence² and rupture³ in the presence of a previous caesarean section scar are reported in the literature. Uterine ruptures, reports of which often include asymptomatic dehiscences that are of no clinical significance, occur in 0.4 – 3.3 % (1 in 250 to 1 in 30) of all VBAC trials. This rate is similar to the rate of ruptures reported for elective repeat caesarean sections (0.5 – 2%). 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 are usually combined and reported as an overall rate. 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. Whether the previous caesarean incision had a single or double layer closure, another factor thought to affect the rate of rupture, is also not always addressed.

The reported rate of true catastrophic uterine rupture in the VBAC literature ranges from 0.09 to 0.8% (1 in 900 to 1 in 125 births) with a meta-analysis of the literature between 1989 and 1999 putting the rate of symptomatic rupture at 0.4% or 1 in 250. The midwife should inform her client wishing to have a VBAC in either a hospital or out-of hospital setting, of the risk of uterine rupture. A copy of this guideline or an alternate written client handout should be offered.

Considerations for Choice of Birth Place

Many women with a history of previous caesarean 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 caesarean section capability will likely offer the most timely access to emergency caesarean section in the event of uterine rupture. However, some VBAC women will come to midwives requesting home birth.

¹ The College's *Indications for Discussion, Consultation and Transfer of Care* ask the midwife to discuss a VBAC client's plan of care with another midwifery colleague.

² Scar dehiscence is the breakdown and reopening of the old caesarean scar. Most dehiscences involve minor tearing around the scar, are asymptomatic and heal well. Many go undetected.

³ 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.

Clients with the following conditions may be candidates for vaginal birth in hospital, but should be advised that they are NOT suitable candidates for a home birth:

- ❖ History of caesarean section at or before 26 weeks
- ❖ History of single layer closure
- ❖ History of infection or impaired uterine scar healing
- ❖ Inter-pregnancy interval of less than 24 months
- ❖ Ballotable head in active labour in current pregnancy
- ❖ Prolonged active phase of labour in current pregnancy

Midwives should always request and review operative reports of previous caesarean sections as well as records of previous obstetric history.

Time and Distance – An additional risk

Despite the relatively small risk, true uterine rupture is a major obstetrical complication with potentially grave consequences for both mother and newborn. Being able to access a caesarean section quickly is very important. There is evidence that suggests that if birth cannot occur between 12 to 18 minutes after a true uterine rupture then fetal death or serious permanent injury is a likely outcome. When planning a VBAC at home, the time it will take to travel to a hospital with caesarean section capabilities must be considered in the light of this small window of time in which one must initiate a caesarean when there is a uterine rupture. Distance to a hospital with caesarean 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 caesarean section;
- b) possibility of repeat caesarean section;
- c) signs and symptoms of uterine rupture;
- d) reasons to consult or transport to hospital during labour;
- e) distance to a hospital with caesarean section capabilities;
- f) community standards for vaginal birth after caesarean section.

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 College's *Guidelines for Fetal Health Surveillance in Labour*. While intermittent auscultation is appropriate, more frequent monitoring may be considered, based on the midwife's assessment of the length, strength and frequency of contractions;
- 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 arrangements 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.
- e) close observation of blood loss in the hour immediately following delivery of the placenta.

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

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 fetal distress (tachycardia or decelerations)
- ❖ 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 caesarean section.

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

References

Allardice, J.G., (1992) Has the uterus ruptured during VBAC? *Journal SOGC* 65 – 82

American College of Obstetricians and Gynecologist, (October 1998), Vaginal birth after previous caesarean delivery, *ACOG Practice Bulletin No. 2*

Appleton, B., Targett, C., Rasmussen, M., Readman, E., Sale, F., and Permezel, M., (Feb 2000) Vaginal birth after caesarean section: an Australian multicentre study. VBAC Study Group, 40(1) *Aust N Obstet Gynecol*, 933-6.

Bennett, V.R., Brown, L.K., Eds., (1999) *Myles Textbook for Midwives*, Churchill Livingstone

BC Reproductive Care Program (May 1994), Vaginal Birth After Caesarean Section (VBAC), *Guidelines for Perinatal Care*.

Bujold, E., Bujold, C., Hamilton, E.F., Harel, F., Gauthier, R.J., (2002) The impact of single-layer or double-layer closure on uterine rupture, *Am J Obstet Gynecol*, 186:1326-30.

College of Midwives of Manitoba, (2003), Guidelines for Vaginal Birth After One Previous Low Segment Caesarean Section.

Cowan, R.K., Kinch, R.A., Ellis, B., Anderson, R. (1994) Trial of labor following caesarean delivery, *Obstet Gynecol*; 83: 933-6.

Cunningham, F., Macdonald, P., Leveno, K., Gant, N.F., and Gilstrap, L., Eds. (1993) *Williams Obstetrics*, 19th ed, Prentice-Hall International Inc.

Enkin M., Keirse M, Neilson J., Crowther C., Duley L., Hodnett E., & Hofmeyr J., 3rd Ed (2000) *A Guide to Effective Care on Pregnancy and Childbirth*. Oxford University Press: Oxford UK

Flamm, B.L., Newman, L.A., Thomas, S.J., Fallon, D., Yosida, M.M., (1990) Vaginal birth after caesarean delivery: results of a 5-year multicenter collaborative study. *Obstet Gynecol*; 76: 750-754.

Gabbe, S.G., et al, Eds., (1996), *Obstetrics: Normal and Problem Pregnancies*, 3rd ed.

Helewa, M., (1999), rupture of the pregnant uterus: the evidence from this decade on risk factors, predictability and prognosis, 21(9) *Journal SOGC*, 864-73.

Lydon-Rochelle, M., Holt, V.L., Easterling, T.r., Martin, D.P., (2001) Risk of uterine rupture during labour among women with a prior caesarean delivery, *N Engl J Med*, 345:3-8.

Marshak, J.D., Cooperman, B.S., Fried, W.B. and Shi, Q.. (2000), Prognostic indicators for successful vaginal birth after caesarean delivery, 94 4(2) *Obstet Gynecol*, S38.

McMahon, M.J., Luther, E.R., Bowes, W.A.Jr., Olshan, A.F., (1996), Comparison of a trial of labor with an elective second caesarean section. *N Eng J Med*; 335:689-695.

Mozurkewich, E.L., Hutton, E.K., (2000), Elective repeat caesarean delivery versus trial of labour: a meta-analysis of the literature from 1989 to 1999, *Am J Obstet Gynecol* 183; 1187-97.

Obara, H., Minakami, H., Koike, T., Takamizawa, S., Matsubara, S., Sato, I. (1998) Vaginal birth after caesarean delivery: results in 310 pregnancies. *Obstet Gynecol*; 24(2):129-134.

Sachs, B.P., Kobelin, C., Castro, M.A., Frigoletto, F. (1999) The risks of lowering the caesarean-delivery rate. *N Eng J Med*; 340(1): 54-57.

Schipp, T., Zelop, C.M. Repke, J.T., Cohen, A., and Lieberman, E., (2001) Interdelivery interval and risk of symptomatic uterine rupture, 97(2) *Obstet Gynecol*, 175 -7.

Shimonovitz, S., Botosneano, A., Hochner-Celnikier, D., (July 2000), Successful first vaginal birth after caesarean section: a predictor of reduced risk for uterine rupture in subsequent deliveries. 2(7) *Isr Med Assoc J*, 526-8.

Society of Obstetricians and Gynecologist of Canada (SOGC), (1995) *Clinical Practice Guidelines for Obstetrics*, No. 19, December.

Society of Obstetricians and Gynecologist of Canada (SOGC), (1997) *Vaginal Birth After Previous Caesarean Birth*, SOGC Policy Statement No. 68, December.

Socal, M.L., Peaceman, A.M., (May 1999) Vaginal Birth after caesarean: an appraisal of fetal risk, 93(5Pt.1) *Obstet Gynecol*, 674 – 9.

Star, Shannon, Sammons, Lommel and Gutierrez, (1990), *Ambulatory Obstetrics: Protocols for Nurse Practitioners/Nurse-Midwives*, 2nd ed., University of California Regents.

Sternberg. C., McNiven, P., (Spring 2003), Midwifery Care for Women Planning Vaginal Birth After Caesarean Section: A survey of Ontario Midwifery Practices, *Canadian Journal of Midwifery Research and Practice*, Vol. 2. No. 1, 10 – 14, Canadian Association of Midwives (CAM)

Varney, H., et al, (1997), *Varney's Midwifery*, Jones and Bartlett Publisher Inc.

Wilson, K., (Spring 2003), Commentary: Vaginal Birth After Caesarean Section and the Issue of Home Birth, *Canadian Journal of Midwifery Research and Practice*, Vol. 2. No. 1, 7 - 9, CAM