Attempting vaginal birth after a previous caesarean section

How should we counsel women and their families?

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From my time as a registrar in the early 1990s, I remember a morbidity and mortality meeting where we discovered that the caesarean section rate for our hospital had reached 25 per cent during the preceding month.

At this, the Professor stood up and announced that he was truly shocked by the figure. After a moment, though, he added that he couldn't decide whether he was shocked because the proportion was too high, or because it was too low.

These days, many people still profess shock that almost one baby in three is delivered by caesarean section: 'There is widespread public and professional concern about the increasing proportion of births by caesarean section.'[1] But should this rise really have the power to surprise? Powerful demographic forces are reshaping our communities. It is now becoming clear that these irresistible changes are likely to influence birth for years to come.

In the first place, obesity is being described as an epidemic and is a well-known independent risk factor for caesarean birth.[2,3] Secondly, the age at first birth continues to rise across the developed world. There is now evidence that increasing age appears to affect uterine function in labour, making older women more prone to dystocias necessitating operative delivery.[4] Thus, as the proportion of women in older age groups labouring for the first time increases, so must the rate of caesarean section increase.

Thirdly, and I think most sadly, obstetricians are abandoning complex vaginal births (such as breech deliveries, forceps rotations and many twin births) and resorting to caesarean delivery in these circumstances. A great deal of the summer 2009 edition of *O&G Magazine* was devoted to this topic.

Fortunately, there is no suggestion that rates of neonatal morbidity or mortality are increasing in hospital-based birth. Indeed, this is a very safe time to be born. Similarly, rates of maternal morbidity and mortality are low too. The confidence we should be able to inspire in women and their families – that they and their babies are very safe in modern Australia and New Zealand – should build a lot of goodwill toward obstetricians. In theory, anyway.

Accepting that the rate of primary caesarean section is increasing and knowing that the majority of women will have more than one baby, it is inevitable that obstetricians will have to work out how to deliver the next baby. Should a woman attempt vaginal birth after her previous caesarean section (VBAC)? This will obviously involve a negotiation with the woman, her partner and possibly their family.

Attempts to work through the voluminous literature about VBAC are challenging. The Royal College of Obstetricians and Gynaecologists (RCOG) *Green-top Guideline* is boldly pro-VBAC, yet it concedes that: '…new evidence is emerging that VBAC may not be as safe as originally thought'.[1] Other publications that address women's perceptions about VBAC commonly include statements such as:

> 'Informed choice is the key to effective women-centred care. Women must have access to non-biased, evidence-based information in order to engage in a collaborative partnership of equals with midwives and obstetricians.'[5]

As we might expect, the *Cochrane* review, 'Planned elective repeat caesarean section versus planned vaginal birth for women with a previous caesarean birth', puts it like this:

> 'Planned elective repeat caesarean section and planned vaginal birth after caesarean section for women with a prior caesarean section are both associated with benefits and harms. Evidence for these care practices is drawn from non-randomised studies, associated with potential bias. Any results and conclusions must therefore be interpreted with caution.'[6]

Caution should be the watchword when contemplating a vaginal delivery after a previous caesarean delivery. I would like to approach the issue of counselling around the decision for VBAC from the perspective of patient autonomy. 'Patient autonomy' is simply the right of our patients to make their own decisions about treatment. Doctors (and others) may educate the patient about important relevant issues, but ultimately, the patient must decide. It is a nonsense to promote a 'collaborative partnership of equals with midwives and obstetricians'[5] if the woman is then hectored into accepting a trial of VBAC against her wishes.

The principle of patient autonomy is different from that of evidence-based medicine (EBM). Sackett and colleagues describe EBM as: '… the conscientious, explicit and judicious use of current best evidence in making decisions about the care of individual patients.'[7] The expectation of EBM is that the doctor assimilates the available 'evidence' and formulates a plan for the patient's management. As we now know, the evidence base informing VBAC is somewhat patchy and prone to bias.

With respect to interventions such as caesarean section, patient autonomy is intimately bound with the principles that underpin 'informed consent'. These issues have been eruditely reviewed by Patrick and colleagues in a recent issue of the *Mayo Clinic Proceedings* and I would like to summarise their review here.[8] Whenever there is a choice between medical treatments (in this

case, trying for a vaginal birth or just having an elective caesarean section), the doctor responsible for the patient's care must discuss the potential benefits and risks of each treatment. This discussion needs to be presented in such a way that the patient can understand it. Serious risks, such as death for example, or permanent incapacity resulting from the treatment, must be discussed even if the probability of them occurring is low. Patrick and colleagues stress that, '...the magnitude of the risks and their frequency should receive special emphasis...and the probability of a good outcome with the proposed strategy'.[8]

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Such principles are also promoted by RANZCOG in College Statement *C-Gen 2: Guidelines for Consent and the Provision of Information Regarding Proposed Treatment*.[15] Using these principles as a template, the information that women and their partners should receive to assist in their decision-making becomes obvious. Comparing an attempt at vaginal birth with a planned elective caesarean section, they must be given information about the likely success rate of each treatment option and the likelihood of serious adverse outcomes (death of the baby being the most important) or permanent impairments (hysterectomy, long-term injury to the mother or baby). All of this must be presented in a way that is easily comprehensible.

How, exactly, should we define 'success' in a trial of VBAC? Obviously, an elective caesarean section is almost guaranteed to lead to delivery of the baby. The best available data from Australia in 2006 suggest that attempted VBAC results in vaginal birth in 53 per cent of attempts.[9] As well, those data also reveal that only 35 per cent of women attempt a VBAC. These figures differ markedly from those in the RCOG *Green-top Guideline*, where rates of vaginal delivery greater than 70 per cent are described.[1] To put things in perspective for Australian women, then, it should be stated that slightly more than one third of women attempt vaginal birth after a caesarean section and slightly more than half of those attempts result in a vaginal delivery. However, this overall metric obviously does not take into account the varied circumstances of each individual woman.

'Successful' and 'failed' are pejorative terms. Women and their families may well feel that setting out to try for a vaginal birth, but undergoing emergency caesarean section with the delivery of a healthy baby, is indeed successful. Others may resent a perception of being forced to try at all. If we adopt a definition of 'success' that the mother and baby are healthy and the family are satisfied, no matter what happens, then it ought to be possible to make almost every delivery after a previous caesarean section 'successful'.

Trying to pick who is likely to achieve a vaginal birth is not easy to do. Special circumstances, such as preterm birth, multiple pregnancy and two or more previous caesarean sections, are beyond the scope of this article. Intrapartum management protocols are a different matter entirely, deserving of a full article. The overwhelmingly most common setting is a woman and her family in an uncomplicated term pregnancy, contemplating a plan for their next birth. This situation confronts almost all obstetricians all the time.

Large studies suggest that, for women who have no previous vaginal births before their caesarean section and in whom the caesarean was performed for a dystocia, the chance of vaginal delivery is considerably less than 50 per cent.[10,11,12,13] Other negative predictors include a birthweight of 4kg or more, increased maternal age, maternal overweight and obesity, and short stature. Thus, women who should be told that if they have no past vaginal birth and their previous caesarean was for 'obstructed labour,' the chances of a successful VBAC are less than even.

What are the risks to mother and baby of the two approaches? The risk of neonatal death in VBAC is 12.9/10,000, compared to only 1.1/10,000 in repeat elective caesarean section. Similarly, the risk of hypoxic-ischaemic encephalopathy (HIE) is 8/10,000 in VBAC but essentially zero in planned caesarean section.[10,11,12,13] Women should be told that, although the numbers are small, the risk of the baby dying or having HIE is about ten times higher after VBAC than with planned repeat caesarean section.

Much of the important morbidity to mother and baby flows from uterine rupture. Smith and colleagues found that the group of women at risk of unsuccessful VBAC (no previous vaginal birth, large baby, short woman, being the main common adverse predictors) are also the group at highest risk of uterine rupture and its catastrophic sequelae.[13] In fact, this group faced a risk of almost one in one hundred of uterine rupture. Uterine rupture is bad. A recent large study from Scandinavia reported the odds ratio for neonatal death in uterine rupture at more than 65.[14]

There are a small number of circumstances when VBAC is clearly contraindicated. Classical caesarean section or complex uterine injury at the time of the first caesarean section are examples of this.[1] Obviously, it is important to be familiar with the circumstances and conduct of the previous surgery before proffering an opinion. There are other considerations too – attempted VBAC slightly increases the requirement for blood transfusion (by one per cent), but also slightly reduces the risk of respiratory morbidity (from two to three per cent to three to four per cent) depending on the gestation.[1]

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Where does this information leave us? The principles of patient autonomy and informed consent mean that women and their families should be informed that their individual risks vary, depending on age, stature, reason for the previous caesarean delivery, size of the baby and whether they have had a vaginal birth prior. This allows risks to be presented in a more bespoke way. Women who are young, have had a vaginal delivery prior to their caesarean section and have a baby predicted to be less than 4kg, would have the highest chance of a safe, successful vaginal delivery.

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The remainder of women, especially those who have not had a vaginal birth and those whose primary caesarean section involved obstruction, may face a less than even chance of having the baby vaginally, and also have the greatest risk of uterine rupture and its ugly consequences.

An important issue that often remains ignored in discussions of VBAC is the issue of access to emergency resources if the attempted VBAC goes awry. Uterine rupture can place enormous demands on the clinician, operating theatres, anaesthetists, paediatricians and all those involved in managing catastrophic complications. If the woman plans for an attempt at VBAC, those responsible for her care must have confidence that the resources necessary for management of a catastrophic complication are readily available. This should surely be brought to the attention of women making decisions about both mode of birth and place of birth.

There is no 'one size fits all' solution to counselling around VBAC. Women and their families need to be aware of the probability of achieving a safe vaginal birth in their individual circumstances and what the risks of a VBAC are for themselves and their babies when things go wrong. Principles of patient autonomy should then lead us to respect the decision and support the plan.

References

1. RCOG. Birth after previous caesarean birth. *Green-top Guideline No 45*. February, 2007. [accessible at www.rcog.org.au]
2. Yakin J, Toner RW, Goldfarb N. Obesity management interventions: a review of the evidence. *Popul Health Manag*. 2009; 12: 305-16.
3. Wax JR. Risks and management of obesity in pregnancy: current controversies. *Curr Opin Obstet Gynecol*. 2009; 21: 117-23
4. Smith GC, Cordeaux Y, White IR, *et al*. The effect of delaying childbirth on primary caesarean section rates. *PLoS Med*. 2008; 5: e144.
5. Meddings F, Phipps FM, Haith-Cooper M, Haigh J. Vaginal birth after caesarean section (VBAC): exploring women's perceptions. *J Clin Nurs*. 2007; 16: 160-7.
6. Dodd JM, Crowther CA, Huertas E, Guide JM, Horey D. Planned elective repeat caesarean section versus planned vaginal birth for women with a previous caesarean birth. *Cochrane Database Systematic Rev*. 2004; 4: CD004224.
7. Sackett DL, Rosenberg WMC, Gray JAM, *et al*. Evidence based medicine: what it is and what it isn't. *Lancet* 1996; 312: 71-2.
8. Patrick TJ, Carson GV, Allen MC, Paterick TE. Medical informed consent: general considerations for physicians. *Mayo Clin Proc*. 2008; 83: 313-9.
9. Homer CS, Johnston R, Foureur MJ. Birth after caesarean section: changes over a nine-year period in one Australian state. *Midwifery* 2009; September 19 [Epub ahead of print].
10. Smith GC, Pell JP, Cameron AD, Dobbie R. Risk of perinatal death associated with labor after previous caesarean delivery in uncomplicated term pregnancies. *JAMA* 2002; 287: 2684-90.
11. Landon MB, Hauth JC, Leveno KJ, *et al*. Maternal and perinatal outcomes associated with a trial of labour after prior caesarean delivery. *N Engl J Med*. 2004; 351: 2581-9.
12. Cahill AG, Stamilio DM, Odibo AO, *et al*. Is vaginal birth after caesarean or elective repeat caesarean safer in women with a prior vaginal delivery? *Am J Obstet Gynecol*. 2006; 195: 1143-7.
13. 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: e252.
14. Kaczmarczyk M, Sparen P, Terry P, Cnattingius S. Risk factors for uterine rupture and neonatal consequences of uterine rupture: a population-based study of successive pregnancies in Sweden. *BJOG* 2007; 114: 1208-14.
15. RANZCOG Statement. *C-Gen 2: Guidelines for Consent and the Provision of Information Regarding Proposed Treatment*. Access at: www.ranzcog.edu.au/publications/statements/C-gen2.pdf .

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