

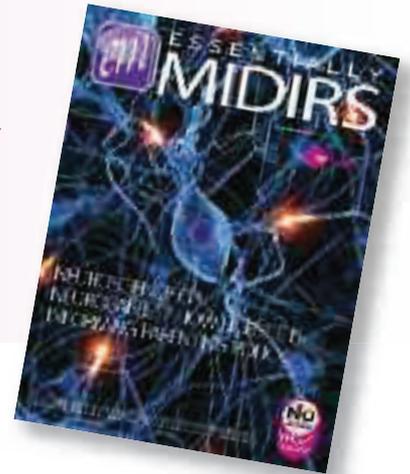
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Editorial comment on issues addressed in this month's Essentially MIDIRS...

July/August 2012 • Volume 3 • Number 7



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Comment by
Sara Wickham Editor

Deep vein thinking

On p12 of this edition of *Essentially MIDIRS*, we feature the abstract of a study looking at the natural history of pelvic vein thrombosis on magnetic resonance venography (MRV). I can understand that this topic may not immediately strike all readers as among the most exciting that we have ever featured, but we are not the first journal who has chosen to draw attention to the findings. This small but significant study was also the 'Editors' Choice' in the journal in which it appeared and, when one looks at the implications of its findings, it is not hard to understand why.

In their introduction, Khalil *et al* note the fact that '...venous thromboembolism (VTE) constitutes the leading cause of direct maternal mortality in the developed world' (2012:356.e1). While the latest CMACE report (Lewis 2011) showed that sepsis is currently the leading cause of death in the UK, VTE nonetheless

remains a major issue in maternity care which warrants continued attention and focus (Wickham 2011). Khalil *et al* (2012) believe we particularly need to focus on determining who is at risk from VTE, which seems eminently sensible. They indicate that current guidance on offering prophylaxis to women at greater risk of VTE is '...based on expert clinical opinion as no large experimental trials have been conducted in this setting' (Khalil *et al* 2012:356.e1) and cite a pilot study they previously conducted (Rodger *et al* 2006) as being an important element in their story. This earlier study was designed to evaluate the effectiveness of prophylactic low-molecular-weight-heparin in women who were at moderate to high risk of VTE after caesarean section. Rodger *et al* (2006) randomised the women into groups who had heparin or no heparin, and all women underwent MRV to see whether they had evidence of VTE.

'No participant had a positive compression leg ultrasound for DVT. The MRV result was interpreted as definite thrombosis for 46% (95% CI 21%-73%) of participants; all were asymptomatic. The clots were predominantly in the iliac veins, with the exception of 1 in the common femoral. They were all less than 1 cm and only one was occlusive' (Rodger *et al* 2006:437).

These results were surprising; nearly half the women appeared to have pelvic vein thromboses (at least by current diagnostic standards) and many more had anomalies. This was far higher than expected, yet the vast majority of the women had no symptoms of DVT. At the time, Rodger *et al* (2006) noted that more research was needed in order to determine the clinical significance of this finding, as: 'Pelvic vein thrombosis may be a common, and possibly normal, finding after C-section. Indeed, the high incidence of DVT detected by pelvic MRI may not be unique to this

patient population and may be seen in lower-risk populations' (Rodger *et al* 2006:437). However, as is often the case, no research studies had ever taken a population of healthy new mothers and asked to take a look at their pelvic veins. So although the anomaly rate in Rodger *et al's* (2006) research seemed high, nobody knew whether it really was or not because nobody had considered what was normal after birth.

Enter Khalil *et al* (2012), who followed up this rather curious result by attempting to do just that. Two thirds of the low-risk women in Khalil *et al's* study who gave birth vaginally also had a high prevalence of anomalies but none went on to experience symptomatic VTE, suggesting that these anomalies may be a normal postnatal occurrence.

Please let me add a word of caution at this point about the interpretation of these findings and my commentary upon them. Although it would appear that asymptomatic pelvic vein thrombosis detected by MRV in the postnatal period may be normal in many women, this does not negate the fact that VTE is life-threatening and we need effective ways of diagnosing and treating it. It is likely that, until we become more knowledgeable about this area, more women will receive prophylaxis than need it, but at present there is no way around this and none of this should be taken as a call to complacency. Rather than being a call to inaction, my fascination with this finding is because of what it implies for our knowledge of post-birth physiology:

'[This has] provided us with a window into a physiologic process that previously has been described poorly. We know that changes in circulation to the uterus are part of the process of involution. In the postpartum period, blood flow to the uterus declines from 15% of cardiac output to <1% of cardiac output. Because venous bleeding from uterine veins can contribute to bleeding from the placental bed, perhaps we can infer that thrombosis of pelvic veins is part of the physiological process to interrupt blood flow at the placental site and facilitate involution' (James 2012:276).

James *et al* (2011) and Smrtka *et al* (2011) have also recently shown a drop in clotting levels in the 24 hours after birth, which James (2012) argues may be related to this phenomenon, and medically-focused researchers and clinicians are almost certainly going to focus on what this means for the prophylactic treatment of postnatal women. That is as it should be. As guardians of the normal, midwives and others who seek to understand and preserve the normal physiologic journey of birth may like to join me in being awed at the wonder of birth physiology, pondering what these findings imply, and



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contemplating what else we need to consider. Wouldn't it be interesting to see if there were differences in women whose placentas birthed physiologically? Wouldn't it be great if we could encourage more research that looks at what is normal in this and other areas? Wouldn't it be interesting to theorise about why pelvic vein clots are normal for so many women yet become severely problematic and potentially life-threatening for others? As is so often the case, I have run out of pages before I have run out of questions, but perhaps that will leave space for others to contemplate these findings and create questions of their own.

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