

We might have moved on from the old notion that a woman's uterus is able to wander around her body and wreak havoc at random, but the uterus in general - and the cervix in particular - are still deemed rather unpredictable and potentially naughty parts of a woman's body. For most of pregnancy, good cervical etiquette dictates that it should remain long, thick and closed. Indeed, Western medicine defines the cervix as incompetent and quickly offers intervention if it looks like it will open too soon. Yet, as soon as that arbitrary point called 'established labour' has been reached, expectations change and the cervix is expected to thin, shorten and open according to the schedule of the partogram. If it then falls short of these requirements, it is deemed to have failed to progress and other kinds of intervention are proposed.

The last decade has seen the growth of a new method of assessing the state and behaviour of the cervix in pregnancy; the transvaginal ultrasound (TVU). The increasing popularity of this intervention seems to be based on the combination of a few studies showing that the transvaginal route is a more accurate way of measuring the cervix than digital examination (Jackson et al 1992, To et al 2000) and other studies showing a correlation between shorter cervixes (generally defined as less than 15mm in length) and premature labour (Heath et al 1998a, 1998b, Rozenberg et al 2002). Bearing in mind the enormous risks attached to preterm labour and birth, this might not, on the surface, seem too problematic. But I believe there are a number of questions and issues which should be considered before such an invasive treatment becomes routine.

### Routine Cervical Screening by TVU

Some of the most oft-cited studies which have been set up to explore questions around measuring cervical length by TVU and then offering interventions to women who are deemed to have short cervixes are those conducted by a group of British researchers. Heath et al (1998a) measured the cervixes of 2567 women at 23 weeks gestation and found that 1.7 per cent of women had a cervix less than 15mm long. In their abstract, the authors state that, "...this group contained 86%, 58% and 20% of pregnancies that delivered spontaneously at  $\leq 28$ ,  $\leq 32$  and  $\leq 36$  weeks, respectively" (312) and conclude that, "measurement of cervical length provides

accurate prediction of risk for early preterm delivery" (312).

After they had measured all these women's cervixes, Heath et al (1998b) then identified 43 women whose cervixes were less than 15mm long. These women were then randomised into two groups: 21 women were "managed expectantly" (312), while 22 women underwent cervical cerclage (Heath et al 1998b). In this study, around half of the women whose cervixes were less than 15mm but who didn't have a Shirodkar suture went into labour before 32 weeks, while none of the women in the cerclage group went into labour before this point. All but one of the babies born to women in this study survived; the baby who did not survive was born to a woman who did not have cervical cerclage. As a consequence of studies like this one, the notion has grown that routine cervical length measurement (CLM) by TVU, coupled with treatment (which may include cerclage) for those women who have short cervixes, might be advisable on a routine basis in order to reduce the incidence of preterm labour and birth.

### The Other Side of the Story

However, not everybody agrees with the idea that routine CLM by TVU is either useful or acceptable as a routine intervention, and one of the main reasons for this concerns the question of how good CLM is as a screening test. In Heath et al's (1998a) study, although 86 per cent of the women who gave birth before 28 weeks had been found to have a cervix less than 15mm on TVU, 14 per cent of the women who gave birth before 28 weeks had a cervix which was defined as of 'normal' length on TVU, and some of the women who had a short cervix did not go into premature labour. Hoesli et al (2003) looked at a number of studies reviewing the use of CLM as a screening test, and concluded that, while CLM may be useful as a screening test for women who are already at risk of premature labour, they would not recommend it for all women.

One of Hoesli et al's (2003) concerns is that, when it comes to using CLM as a population screening test, the sensitivity (or true positive rate, which, in this instance, shows how accurately CLM identifies the women at risk of preterm labour) and specificity (or true negative rate, which shows how accurately CLM can identify the

women who are not at risk of preterm labour) are not within acceptable limits. CLM has low sensitivity as a screening test when used on the population of women as a whole, partly because preterm labour occurs in only a small percentage of women. As demonstrated by Heath et al's (1998a) results, CLM will only identify a proportion of the women who are at risk of preterm labour.

It might be possible to increase the sensitivity - and therefore correctly identify more women who are at risk of preterm labour - by increasing the cut-off point at which women are deemed to be at risk. In this instance, this might mean that we increase the definition of a short cervix from 15mm to, say, 18mm or 20mm, but the effect of this is only to decrease the specificity. This would result in a higher false positive rate, where more women will be told they have a problem when they do not, with all of the anxiety and unnecessary intervention that this brings (Rozenberg et al 2002). Because sensitivity and specificity are mathematically inter-related, higher accuracy on one almost always means lower accuracy on the other. Where CLM is offered as a screening test to all women, the cut-off point chosen locally will either mean that a number of women who are at risk of preterm labour will not be correctly identified, or that a number of women who are not at risk will be told that they are.

### The Bigger Picture

Hoesli et al (2003) also point out that screening is only useful when effective preventative therapy is available, and argue that the debates regarding tocolysis and cervical cerclage are not yet concluded. Certainly the Heath et al (1998b) study, which included only 43 women, may not be large or rigorous enough on which to base decisions about offering the rather significant intervention of cervical cerclage. Some midwives believe that many cases of preterm labour can be prevented by improving women's nutrition, or by reducing stress, or by exploring women's lifestyle choices with them. It seems pretty clear from the literature that cervical "incompetence" is only one factor in preterm labour, and that many, many questions exist around this area.

More questions are raised when we consider how pregnant women feel about having to remove their clothing and having a probe inserted into their vagina, about the stress that this test - and

any possible conclusions and recommendations which arise from it - might create, and about what this intervention might represent from postmodernist and feminist perspectives.

Although a couple of recent studies have shown that transperineal ultrasound is just as effective at measuring cervical length as TVU (e.g. Ozdemir et al 2005), we are still left with the fact that any kind of routine cervical assessment will have to be applied to several hundred women in order to identify one woman with a shorter-than-average cervix, and risk exacerbating the belief that technology is deemed to supersede the wisdom of women's own bodies, knowledge and experience. Again, I would argue that lots of issues need further exploration before we can draw any real conclusions in this area.

### References

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