midirs

Focus

Assessing progress through labour using midwifery wisdom

Kathryn Gutteridge

Many years ago, whilst working with an experienced and well respected community midwife, I observed some of the key qualities that she possessed, which I would go on to develop in my own career. She never hurried about her daily tasks, but gave every woman in her care her full attention, and was competent in everything she did. I watched her work and admired the way she gave advice about coping with the ailments of pregnancy, but it was while I observed her with labouring women in their own homes that I was to learn so much. Early in my time with her she gave me a pair of wooden knitting needles. She said many years ago her midwife mentor had given some to her, and that she was now passing them on to me. You see, the knitting needles were a metaphor that, at the time, I didn't quite understand. I learned later on that if, during a woman's labour, my hands were busy with the knitting needles I was more inclined to 'be' with the woman and less inclined to 'do'. When I was privileged enough to take up my role as a community midwife I appreciated the value of 'knitting hands', and that by not interfering with the process of labour, we could allow nature to unfold.

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Labour has become the domain of hospital medical culture, and we have very little space and time within our current maternity service to watch and wait. This creates an alien environment for birth to unfold naturally. Labour is a primal event, and the woman's body often knows what it is doing even if she herself is unsure. And yet, the conflict between women's bodies and obstetrics is demonstrated daily on labour wards through the arbitrary rule that labour cannot be considered established until a woman's cervix has reached 4cm dilated, accompanied by the presence of regular strong contractions — this rule negates the

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woman's bodily experience and personal knowledge (Redshaw & Heikkila 2010). The course of labour is timed and measured by the clock, and we determine progress by the number of centimetres a woman's cervix is opening per hour, rather than by observing other physiological processes. This practice of working is at odds with midwifery and womankind.

How can midwives best develop the skills they need to support women through their birth journeys? I believe that by calmly and carefully observing the natural course of labour in environments that support women to be uninhibited, and by integrating these observations with specific midwifery knowledge, midwives can become highly skilled practitioners.

Sensitive midwifery

When a woman feels she is in labour, she will usually experience a mixture of emotions; joy that at last her baby will arrive, fearful anticipation of the pain of her contractions, anxiety about how she will cope, and perhaps a realisation of her own strength and power as her body is about to give birth. The 'sensitive midwife' will know all the different ways of labouring women, and will be unobtrusive and quiet in both body and language, supporting women psychologically and physically. She will know that in the early stages of labour the woman will probably have a need to be busy and mobile, completing her tasks for the preparation of birth. Women may have little expectation of midwives, generally assuming we are competent practitioners who are there to safeguard them and their babies (Green *et al* 1990). However, the one thing I believe all women seek is kindness and compassion.

A sensitive midwife could watch out for, and observe, the physical signs and physiological processes discussed below to assess the progress of labour, without the need for technology or time-based limits. Little attention has been paid to these subtle changes in women, as a way of knowing how labour is progressing.

Natural characteristics of labour

Skin changes and body temperature

Women in early labour or in the build up to labour, will often appear flushed, particularly across the face and cheeks. This phenomenon is often noted by family members, and experienced mothers will say that it is a sign of labour. Physiologically, a flushed appearance is due to vasodilation of capillaries (the smallest blood vessels in the body), and is influenced by oxytocin and progesterone production. As labour progresses the woman's skin continues to flush and vasodilate as her core body temperature increases and cooling is improved through the skin. Vasodilation occurs naturally — when respiration increases so do CO_2 levels in the blood, which increase relaxation of the smooth muscle within the vessel walls, resulting in enhanced blood flow. This process is further improved during labour as regulation of the smooth muscle is influenced by progesterone, which causes the lumen of the vessels to relax and become resistant to increasing pressure of the circulation. During pregnancy the woman's heart and pulse rate will have increased to 10-15 beats above the usual rate to ensure that blood flow to the placenta is optimised.

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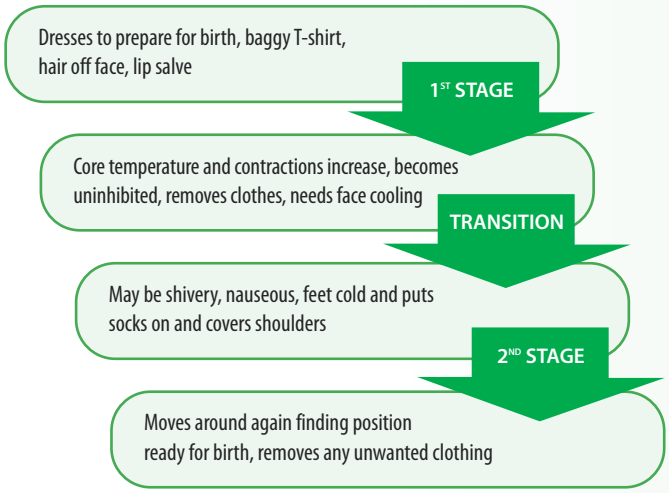
The woman will probably find clothing cumbersome, show signs of perspiration on her face and will want to undress as her labour progresses. The urgency to cool down and lose heat through her skin increases as she gets nearer to birthing her baby. This has been witnessed by many midwives in practice, but because of labour ward culture many women are often clothed in a gown and may feel inhibited about removing it. After birth the woman will very often experience shivering and visible tremors as her body reacts to the immense energy expended. She needs to be warmed quickly, to encourage her placenta to separate and be birthed, as loss of heat and excessive cooling can delay separation of the placenta.

Fig 1. Body temperature changes: what women may need during labour



During the second stage of labour, midwives may observe skin changes such as 'the purple line', a discolouration that deepens and darkens as labour progresses, reaching from the woman's anal margin up to the cleft of her buttocks (Hobbs 2007). Shepherd *et al* (2010) found a positive correlation between the presence of the purple line and dilation in 89% of cases, made more obvious when a woman is in the 'all-fours' position. Midwives since have become fascinated with identifying this charismatic marker of labour progress. Hobbs describes it thus: *'increases in intrapelvic pressure causing congestion of veins around the sacrum, with the lack of subcutaneous tissue over the sacrum, results in this line of red-purple discoloration'* (2007:27).

Breathing

The first stage of labour is usually characterised by changes in the woman's breathing, which may even change to *'exaggerated panic'* during a contraction (Burvill 2002). Early on in labour, while her contractions are perhaps irregular, the woman may be talking, or even laughing, during and between each of her contractions, whilst continuing with everyday tasks. As early labour progresses the woman may then display a deeper 'sighing' pattern of breathing, which commences at the start of each contraction. She might find talking through the contractions more difficult and has to focus on her breath throughout. As she approaches transition she may become entirely focused on her breathing: usually, she will not talk during a contraction, her breathing will be deep and she may cry out at the peak of the contraction. When transition has passed she usually has a renewed sense of energy and her breathing will take on a new and energetic pattern — more expiratory than inspiratory. She will be focused on breathing deeply and at the end of the contraction more guttural sounds will be heard, along with some involuntary sounds of pushing.

Some experienced midwives will be able to identify a woman's stage of labour entirely by the way that she is breathing. As a community midwife on call for home births, I became accustomed to speaking to women during labour, and I knew that I would be getting out of bed soon if the woman was unable to hold a conversation with me during a contraction, as this would mean she was probably established in her labour. This skill is based entirely on caring for women in normal labour over many years and has never failed me.

Of course, how women breathe through labour varies, and not all of the above patterns will be observed in every labouring and birthing woman.

Smell

We know that during pregnancy women's olfactory systems are stimulated and they are usually more sensitive to smells. Hippocrates used his sense of smell to detect sickness amongst his patients (Chishti 1988), and indeed many early physicians used sniffing as a diagnostic tool. During labour the woman's olfactory system is further enhanced as her breathing deepens and her awareness is heightened due to the stimulation of higher order senses such as the limbic system and hypothalamus. Wilson & du Lac (2011) found in their neuroscience work connections between many species of mammals who emit a different scent or odour during labour, which is different from any other scent during their lifespan.

Midwives also use their sense of smell and assert that the 'smell' of the woman in labour is a diagnostic tool (Wickham *et al* 2004). Whilst midwives do not overtly 'sniff' women, they do use their sense of smell to assist practice, and this is evident when a placenta is found to have the unpleasant odour indicative of chorioamnionitis, an infection within the uterus.

Labour is a useful time to sharpen our sense of smell. In an observational paper, Wickham *et al* (2004) described a powerful odour smelt by sensitive midwives when women are advancing in labour. The smell that midwives refer to is not that of amniotic fluid or body odour. It is described as a feminine smell, not unpleasant, but rather a heady, musty scent, that is usually apparent just before the birth and is more noticeable in a calm, serene environment where the natural accumulation of oxytocin and endorphins has occurred. Wickham *et al* (2004) noted that midwives were accurately identifying the approach of the second stage of labour purely by their sense of smell.

Movement

In early labour, women generally carry on walking and moving around intuitively, in ways that encourage labour to unfold. In fact many women state that they are more comfortable upright and walking around as their bodies adapt to labour.

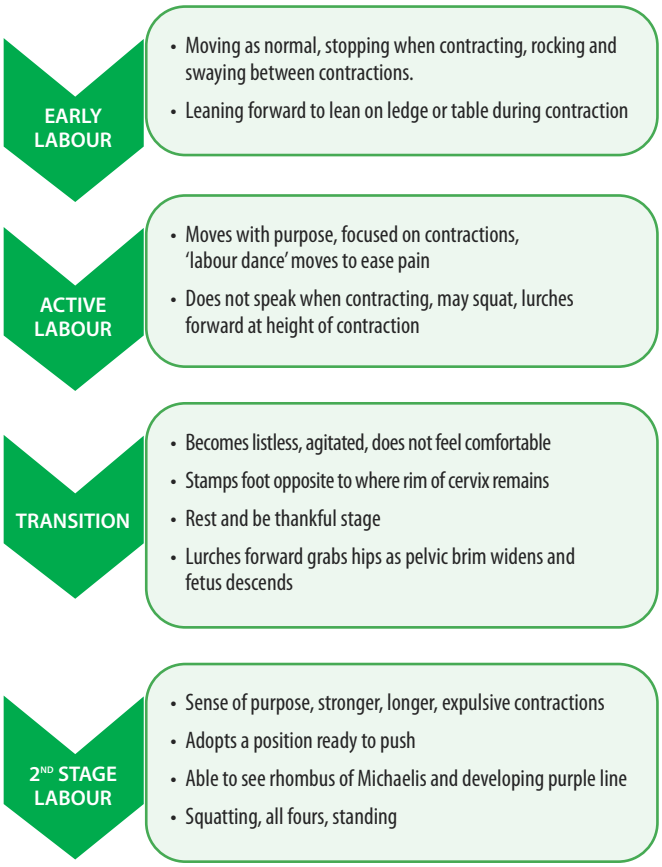
As labour establishes, and as her contractions gather strength, the woman will usually stop moving during a contraction and will often lean forward to support herself on a table or work surface in her home. This forward facing movement is instinctive and helps to accommodate the uterus as it works

from the fundal region, tightening and squeezing the fetus further into the birth canal. The woman may arch her back between contractions to stretch out her spine and release pressure on her sacroiliac region.

If the baby is in an awkward position (usually termed a malposition), midwives and women alike might think that the woman is in advanced labour, or that there might be a problem. An example of this is fetal occipito-posterior (OP) position. Jean Sutton, a well respected New Zealand midwife, describes how some women might characteristically behave during labour with a posteriorly positioned baby (Sutton 2000). If a midwife were to observe a woman in her natural environment during contractions, she would see that they are typically short and sharp in duration, beginning and ending in the lower sacral region, with the woman generally more comfortable in an upright position. The woman may be irritable, and depending upon whether the fetus was deflected towards her right or left flank, she would probably lift her corresponding leg, even stamping her foot in tune with her contractions.

Observing women and knowing how they might look and behave during an OP labour is crucial, if midwives are to be able to help women through the long and arduous phase of establishing labour and have normal birth outcomes.

Fig 2. Women's movements during labour



Transition

As the rhythm of labour progresses, the woman's behaviour will often change. Women who had previously been moving around may become listless and want to rest between contractions. As contractions continue, a woman may express a sense of defeat or of being overwhelmed, often stating: *'how much longer', 'I can't do this anymore',* or *'I want an epidural now'.* Entering the transition phase under the influence of high levels of oxytocin and endorphins, she may become more uninhibited and perhaps tearful. She may look to the observer to be in her own world or even in a trance-like state. She may ask for medication or to have an end to this, she may also show signs of shivering, tremor, hiccoughs and nausea as her body prepares for the expulsive contractions that are due to follow. As the stage of transition passes the woman will usually stand and move around again to change position, often reaching forwards to support herself (Lemay 2005). The end of transition is often followed by a 'rest and be thankful' inactive stage of the uterus, where the fetus has descended into the birth canal but not yet rotated upon the pelvic floor (Kitzinger 2002).

I remember this stage as the most challenging for me as a midwife, and early in my career, I often felt as overwhelmed and as helpless as the woman. Once, a woman asked me to hold her in the standing position, she put her head on my right shoulder, and putting our arms around each other we swayed. We stayed like this in a 'hug embrace' for some time. Then the woman became alert, smiled, and stated that she felt ready to push, as her baby's head emerged very quickly. What I didn't know or understand at the time was the process of the 'fetal ejection reflex', whereby the woman is facing the next phase of her labour and will soon see her baby. Whilst observing the behaviour of mice in labour, Newton *et al* (1966) first described the 'fetal ejection reflex', which occurs only when the environment for birth is optimised. By arching her back and throwing her arms into the air, a woman can increase the space within the pelvic structure as her baby's head manoeuvres into the birth canal. During that particular labour, as I held the woman whilst she followed her own instincts, we stumbled across an ancient midwifery supportive movement not usually observed in modern obstetrics due to the rising use of epidurals and bed births.

Touching

'Midwifery touch' is common in pregnancy, for example when the midwife palpates the woman's abdomen. Touch during labour takes on a different dimension, as contractions occur frequently and the woman is experiencing great pain. Touch can be a valuable tool in any challenging, or distressing, situation. However, in our western society the cultural norm is not comfortable with 'touch' or feeling close to others unless we are in an intimate relationship. If we, as midwives, know that caring for women involves a sensitive and intuitive approach, then touch can be both soothing and problematic. For example, a midwife often needs to establish a relationship with the woman where none existed before. Women who have suffered harm in

their lifetime, or experienced violence, may find touch intrusive or even abusive (Gutteridge 2001). Therefore a midwife needs to be aware of the cognitive cues from the woman and respond appropriately to her behaviour.

If a woman is experiencing low sacroiliac pain she will often ask for someone to apply counter pressure during the contraction to relieve discomfort. Many midwives use massage and healing touch techniques during a woman's labour (Kitzinger 2000). As demonstrated in the labour I mentioned earlier, where I was asked by a woman to 'hug' her, the woman was seeking human comfort for her distress during transition. When in despair we often seek healing and reassurance from being held or touched.

In her anthropological studies Kitzinger (2002) described many practices of manipulating the fundus during labour, from massage, to binding, and using straps to rock the woman as she laboured. Midwives have become less accustomed to touching the woman's uterus during labour as midwives in labour wards attach monitors around women's abdomens, thereby avoiding the usual hands on approach to assess the strength, tone and frequency of a woman's contractions. The presence of machines and technology tends to lead to mechanistic or disengaged touch rather than the use of supportive and healing touch techniques.

Pain perception

Women usually describe the first stage of labour as the most difficult, in terms of comfort, but this is a generalised statement that mostly reflects women in labour ward settings (Corli *et al* 1986). In a study of the perception of pain by labouring women and their attending midwives (Baker *et al* 2001), it was revealed that women found cervical dilation from 2-4cm in hospital more difficult to cope with, but midwives were not able to fully distinguish the extent of that pain by observation alone. There is an assumption that women cope with early labour pain more easily, however, it was obvious from the Baker *et al* study that the alien environment of a hospital, being left unattended, and more often than not lying on a bed, made the women's labour more difficult to cope with. In nearly all of the findings from the midwives' assessment of pain in comparison to the woman's perception of pain, the midwife underestimated the degree of pain and discomfort, and furthermore was unable to offer support or advice (Baker *et al* 2001). Midwives use many non-verbal cues to assess women's degree of comfort and pain during labour — facial grimaces, vocal expressions and eye contact are but a few. But perceptions of pain are subjective, and as such are an unreliable indicator of labour progress.

Changes in contractions

Labour is almost always identified in obstetric and midwifery textbooks in terms of 'stages'. However, many experienced midwives recognise that labour cannot easily be divided into discrete 'stages' in practice (Winter & Cameron 2006). They tend to use changes in contractions as one of a number of guides to a woman's progress during labour. By the time the woman's

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cervix is fully, or almost fully open, the woman's contractions are at their strongest and occurring every 2-3 minutes, lasting for 90 seconds, with only a few minutes rest between each one. Progressing through labour, and at the height of each strong contraction, the woman's uterus can be observed to tilt forward and slightly towards the left side of her abdomen.

As the woman nears full dilation there appears to be a lull in uterine activity, which lasts between 10-30 minutes. This allows the fetal head to descend through her fully dilated cervix and rotate past the ischial spines. A bright bloody loss is seen at the vulva as full dilatation occurs and the Ferguson reflex is activated, giving the woman a strong urge to bear down. The contractions will be powerful and expulsive as the second stage advances.

If the woman is on 'all fours' at this stage, a midwife might see the development of the rhombus of Michaelis (Sutton 2003). The rhombus of Michaelis is a kite shaped area reaching from the woman's lower lumbar region to her lower sacrum. It changes in dimension and shape when the ileal wings extend outward to accommodate the fetus on its passage down the birth canal. Kitzinger (2000) noted that Jamaican midwives called this phase the 'back opening' phase of labour, in which the woman often unconsciously raises her arms to steady herself as the pelvis widens and opens for the birth of her baby. The woman may well support her iliea on both sides by holding her hips and may cry out with discomfort, the rhombus of Michaelis is then visible and seen as a rounding of her lower back. As this happens she may look at the midwife with intensity, fixing her eyes entirely on the midwife as if her life depends upon it.

Conclusion

The surge of interest in, and commitment to, birth centres in the UK may be one positive way of reclaiming undisturbed birth and allowing students, midwives and women to once again know the beauty of a woman's body doing what only she can do best. The encouraging outcomes of the NPEU Birthplace Study (Birthplace in England Collaborative Group 2011), the Serenity Birth Centre (Gutteridge 2011) and other birth centre reports, would suggest that there is something integral about the birth environment, about midwives being with women and understanding how labour is best supported. There is little quantitative research that can demonstrate the wisdom of birth but there is much anecdotal evidence, storytelling and women's talk, which can pass on the tricks and magic seen in a birthing room.

If I were to give three pointers to midwives wishing to be with women in a sensitive, supportive manner, I would suggest they:

- Be gentle and kind at every opportunity through pregnancy, birth and afterwards
- Be with women, not coaching, not doing, just offering calm support and intuitive help
- Ensure the environment is nurturing by being present throughout a woman's labour, or when she needs you, offering therapeutic touch if the woman wants this.

For a midwife to understand how a woman's labour is progressing she must 'be' with the woman. If the woman allows it, being close to her, feeling her abdomen and listening in to the baby's heart with a Pinard stethoscope will suggest how relaxed she is between contractions, the power of the uterine activity, the position of the fetus and also her body temperature. Only then will a midwife appreciate how a woman is moving through labour and how she is coping with the process. The three pointers above, and the physical signs discussed earlier in this article will not guarantee anything during labour, but they will help you to assist the woman in her journey through birth, and she will remember you for the kind and compassionate person that you hope to be and, whatever the outcome, will result in a good memory of her birth.

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