

Pain and epidural use in normal childbirth

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Abstract

With epidural rates doubling in the UK over the past 20 years, the impact on normal labour and birth is profound. Changes have also occurred in wider birthing milieu, such as the rise of a risk discourse, the diminishing of a 'rites of passage' meaning to birth, the growth of obstetric anaesthetic services and the advent of informed choice in maternity care policy. This paper discusses these issues and argues that inadequate service provision and an impoverished approach to labour pain rather than women's preferences are contributing to the rise in epidurals. An elective epidural service in relation to low-risk women is challenged and a call made for an urgent debate on how maternity services and ultimately society should respond to these profound changes.

Key words: Epidural, Zepherina Veitch memorial lecture, normal birth, risk, pain, evidence-based midwifery

Introduction

This paper discusses rising epidural rates in low-risk labour in the UK, proffering some reasons for this trend. The side-effects of epidurals are detailed and, from this, the suggestion is made that epidural use is incompatible with normal labour. It then argues that inadequate service provision is the main contributor to the rise. Contrasting pain paradigms are then outlined, based on Leap's (2000) and later Leap and Anderson's (2008) seminal research and writing. Their approach of 'working is pain' is critically examined to see if it offers a way forward for the current debate around labour pain.

An epidural epidemic?

Epidural rates have doubled in the UK from 17% in 1989 to 33% in 2007/08 (BirthChoiceUK, 2009). Though the reasons for this have never been investigated, it is likely that some of the following play a part in this change:

- Elective epidural provision is now almost universally available in consultant maternity hospitals in the UK. A survey in 2006 found only four out of 196 consultant maternity units did not provide this option (Jones et al, 2008). Obstetric anaesthetists now have their own association and their numbers have grown substantially over the past 20 years (Wee et al, 2002)
- Epidural provision has been available in some UK maternity units for nearly 30 years and hence, crosses two generations of childbearing women. Anecdotally, midwives say the mothers of the childbearing women now more commonly recommend epidurals to their daughters than they did a generation ago
- Celebrity birth stories and media portrayals of childbirth often include epidurals (*Daily Mail*, 2004)
- Over recent decades, there has been a loss of 'rites of passage' meaning to childbirth, so that pain and stress are viewed negatively (Leap and Anderson, 2008)
- A technorationalist society considers pain as either preventable or treatable (Lauritzen and Sachs, 2001)
- The pain relief paradigm is dominant in maternity services (Leap and Anderson, 2008)
- The movement to institutional birth (93% hospital verses 7% home and birth centres) reinforces medical solutions to clinical symptoms, such as pain (Walsh, 2007)

- Fragmented models of care and loss of continuity contributes to greater use of pharmacological agents in labour (Hodnett et al, 2007)
- Informed choice as an ethical imperative influences practitioners' responses to maternal requests for pain relief in labour (Walsh, 2007)
- The risk discourse predisposes to childbirth intervention including the use of pain-relieving agents (Walsh, 2007).

Several of these factors work in tandem. 'Technorationalist society' (Lauritzen and Sachs, 2001) is shorthand for a society that equates all scientific advances with progress. In relation to pain, technology and drugs have either prevented pain from emerging or treated it effectively when it does. It is counter-cultural in such a society to see a purpose to pain, especially physical pain related to biological function, which is how traditional and indigenous societies have probably viewed childbirth over thousands of years (Kitzinger, 2000). Childbirth within indigenous societies studied by Jordan (1993) was viewed as a 'rite of passage', an anthropological phrase referring to growth milestones. Rites of passage are associated with movement from one level of maturity and responsibility to another (van Gennep, 1966) – in the context of childbirth from woman to mother. It commonly involves passing through an experience of challenge and uncertainty known as a liminal phase before re-integrating into the new role.

Allied to an antipathy to childbirth pain, is a risk discourse that carries within it several paradoxes. In the West, it has never been safer to have a baby if judged by maternal and perinatal mortality rates (Department of Health, 2007), yet it appears that many women have never been more frightened of the process. The relatively new diagnostic category of 'tokophobia' (morbid fear of labour) is testament to that (Hofberg and Brockington, 2000). Another paradox is a high degree of risk aversion, yet a willingness to embrace medical interventions like drugs and surgery that carry risks themselves. Risk aversion appears to operate quite selectively. Mixed messages co-exist like a public health message to avoid any form of drug pre-conceptually and prenatally, but accept an array of drugs during intrapartum care.

Discussion about epidurals is often linked to the broader discussion of medicalisation of childbirth, because epidural typifies the 'cascade of intervention dynamic' that contributes to

medicalisation (Johanson et al, 2002). Public health concern has prompted the Department of Health in the UK to measure normal labour processes as well as normal birth outcomes (NHS Information Centre, 2008). A working definition has now been agreed as to what constitutes a normal labour and birth and it excludes epidural or spinal anaesthetic, induction of labour, forceps or ventouse, caesarean section (CS) and episiotomy. The difficulty of reaching agreement across a multi-disciplinary group is reflected in the fact that it can include augmentation of labour, artificial rupture of membranes, the use of entonox, opioids, electronic fetal monitoring and an actively managed third stage of labour (Werkmeister et al, 2008). The fact that the Consensus Group had to compromise to accommodate the various positions of the stakeholders indicates how certain procedures and drugs are now considered normal in labour. The ubiquity of oxytocin augmentation and epidural is demonstrated in Mead and Kornbrot's (2004) survey of low-risk women, when they found that rates varied between 48% and 76% (augmentation) and 29% and 62% (epidurals). Furthermore, Symon et al (2007) demonstrated the stark contrast in low-risk women's self-reported intervention rates between midwifery-led units and consultant units: pain agents were 25% in the former and 77% in the latter.

Side-effects of epidurals

When it comes to specific risks associated with a medical procedure, epidurals have many. These include:

- Increased length of first and second stage of labour (Anim-Somuah et al, 2009)
- Need for more oxytocin (Anim-Somuah et al, 2009)
- Increased incidence of malposition (Anim-Somuah et al, 2009)
- Increase in instrumental delivery (Anim-Somuah et al, 2009)
- Increase in third- and fourth-degree tears (Rortveit et al, 2003).

Maternal side-effects are:

- Reduction in mobility (MIDIRS, 2006)
- Can lead to an inability to pass urine (MIDIRS, 2006)
- Hypotension, headache (MIDIRS, 2006)
- Pyrexia (Yancey et al, 2001)
- Up to 30% of women get partial, but not complete relief (Simkin, 1989)
- Reduces breastfeeding rate on discharge from hospital (Wiklund et al, 2009).

Neonatal side-effects include tachycardia due to temperature rise, and they are more likely to be hypoglycaemic (Lieberman and O'Donoghue, 2002). It also diminishes breast-seeking and breastfeeding behaviours (Ransjo-Arvidson et al, 2001). All of these negatives have to be balanced with the fact that an epidural offers the following advantages:

- It is more effective than non-epidural analgesic methods (Anim-Somuah et al, 2009)

Box 1. A story from a midwife typifying the current conflict around pain and labour

The midwife had taken over from her colleague who was looking after a woman having her second baby. The woman had been in the latent phase of labour, but had recently shown signs of her labour accelerating. In the short time it took to hand over, the woman had become very distressed. The midwife rapidly tried to develop a rapport with her and gave some advice about focusing on breathing during the contractions. This was not enough and she began using entonox within a short period. The contractions were long and intense and beginning to get expulsive. As the midwife auscultated the fetal heart on the woman's abdomen, she noted that the auscultation point was tracking down the abdomen to rest over the symphysis pubis. She recognised the familiar manifestation of transition, but by then the woman was shouting loudly 'to go home', 'caesarean now' and 'get me an epidural'. Her distress was greater on the bed so the midwife encouraged her to get up, though she was continuously monitored because of meconium-stained liquor. She coped a little better upright or on the floor but still vocalised her distress in no uncertain terms. The midwife was faced with a dilemma. She was sure the second stage of labour was imminent, but the recourse to an epidural would have calmed the woman and made monitoring the fetal heart easier as she would have been semi-recumbent on the bed. After another 15 minutes, the woman was bearing down strongly and birthed a healthy baby boy. Later, both an anaesthetist and another midwife suggested an epidural was wholly appropriate in this situation and a lively discussion ensued.

- It makes CS safer (May, 1994)
- It enables pain-free assisted vaginal birth
- It is valuable for protracted, induced or augmented labours (MIDIRS, 2006)
- It is useful for some women with tokophobia or post-traumatic stress disorder (Heinze and Sleigh, 2003).

Few childbirth professionals would argue against epidural availability and use in these or similar situations. Because of the side-effects outlined above, the position of this paper is that epidurals render labour non-physiological and therefore a pivotal point for discussion is its role in normal labour. A related question is to what extent 'informed choice' has become an ethical imperative, regardless of context and prior preferences (for example, as expressed in a birth plan). In the story above (see Box 1), the scenario of a multiparous woman requesting an epidural in late first stage of labour has been used as an exemplar for the application of informed choice. Many UK midwives would express the tension between responding to a woman's request in this situation and knowing that this is a transient and challenging part of the labour that will soon pass. Midwives from other countries have expressed surprise when this scenario has been presented in workshops, concluding quite unequivocally that 'an epidural is not appropriate'.

Epidural rise and the inadequacies of service provision

While recent media coverage reported the epidural debate as professionals urging women to accept labour pain (*The Observer*, 2009), the original intent of the Zepherina Veitch memorial lecture (RCM, 2009) was to highlight the failure of the maternity services to provide forms of care that are known to lower epidural rates. High-level evidence exists in three areas: one-to-one care in labour (Hodnett et al, 2009), the provision of a home-like birthing environment (Hodnett et al, 2009) and access to water immersion (Cluett et al, 2009). All three forms of care lower epidural rates in low-risk groups, especially in nulliparous women. Yet, surveys reveal these forms of care are not universally available to women in the UK (Healthcare Commission, 2008; Redshaw et al, 2007; Alderice et al, 1995). This is despite the fact that the effectiveness of the first two (one-to-one care and home-like birthing environments) has been known about for over ten years. Given the slowness of service provision to implement these forms of care, it is not surprising that women opt for epidurals. Fragmented care systems

and clinical, austere labour rooms would appear to be risk factors in themselves for greater reliance on pain medication.

Research also points out that the best predictor of labour pain is maternal confidence (Leeman et al, 2003) and this opens up two further dimensions to an understanding of labour pain: the significance of relationally-mediated care as a conduit for building confidence and the importance of pre-existing expectations. In addition to the studies of one-to-one care in labour, randomised and non-randomised controlled studies of a specific organisational model called caseload, which guarantees a known carer for labour, consistently shows lower rates of epidural and other birth interventions (Benjamin et al, 2001; North Stafford, 2000). Hodnett (2002) discovered the overlap between pain perception, confidence and how women rate their childbirth experience when she undertook a systematic review of the role of pain in childbirth satisfaction. Her conclusion was that *'the influences of pain and pain relief... on subsequent satisfaction are neither as obvious, as direct, nor as powerful as the influences of the attitudes and behaviours of the caregivers'* (Hodnett, 2002: 160).

Women reported positive birth experiences when they felt in control, when communication was effective and when power was shared in relation to decision-making (Carlton et al, 2005). Carlton et al (2005) showed that pain relief did not necessarily improve women's childbirth experience and that such a request may indicate a need for emotional support. These findings are backed up by Kannan et al's (2001) research, where most women requesting an epidural for pain reported being less satisfied with their childbirth experience, despite lower pain intensity.

The importance of prior expectations and beliefs was shown in Heinze and Sleight's (2003) study, exploring the differences between women who labour with or without an epidural. The epidural group had a higher fear of childbirth, were less aware of the side-effects, had an external locus of control for childbirth and a desire for passive compliance in the process. The non-epidural group had an internal locus of control and had less fear, believed that control came from within and wished to actively participate in the process.

Attitude to labour pain

Leap (2000) and Leap and Anderson (2008) have made a seminal contribution to the area of attitudes and beliefs about labour pain and have developed an explanatory theory called 'working with pain'. Their theory is based on research into home-birth experiences of women and the midwives who attended them and, for this reason, may have less applicability to institutional birth settings. Nevertheless, their approach is at the very least theoretically generalisable to women in normal labour in other birth environments. They contrast 'working with pain' with 'pain relief' (Leap and Anderson, 2008). Table 1 summarises the main differences between these two approaches.

The 'working with pain' paradigm is predicated on labour physiology that requires pain to be present for the release of beta-endorphins, a naturally occurring opiate-like compound (Buckley, 2009). These hormones have analgesic and euphoric effects, similar to exogenous opiates and probably contribute to the dynamic behind oxytocin release so that it is neither understimulated nor overstimulated. Endorphin effects are also associated with altered states of consciousness, ecstatic experiences and

excitation (Ribeiro et al, 2005). An altered state of consciousness may be important for a labouring woman in helping her behave instinctively, for example, to use bodily movements to assist in the descent of her baby (Buckley, 2009).

It is probable that it is these effects that are captured so beautifully in *Hannah's birth*, a short DVD produced by Sheena Byrom (Byrom, 2006). What the DVD also captures are the empathic responses from Hannah's birth companions. Moberg (2004) in her captivating book, *The oxytocin factor* suggests that this hormone is secreted in both men and women, especially during therapeutic touch. She highlights the necessity to bathe a birth setting in love, not fear. When this occurs, the synergy created is more than the sum of individual parts. Hence the centrality of empathic relationships to the birth process, the importance of an optimum environment and of minimising disturbance. All of this takes on an urgency in an institutional birth setting where some of these factors are already compromised.

The transforming power of labour

One of the key questions for maternity care stakeholders is what will happen to the narratives of transformation and growth in childbirth if normal labour pain is effectively removed by rising epidural rates. These are the countless number of personal testimonies that women share about an experience of growth and empowerment through childbirth. The vast majority of these are characterised by drug-free or low intervention labours, though not all (Thompson, 2007). Lundgren and Dahlberg (1998) found that women placed a meaning onto pain that assisted

Table 1. The different approaches of pain relief and the 'working with pain' paradigms

Pain relief approach	'Working with pain' approach
Language suggestive of pain as a problem	Language suggestive of pain as normative
Paternalistic – 'we can protect you from unnecessary stress'	Egalitarian empowerment – 'we are alongside you'
Technorationalism age – pain is preventable, treatable	Labour pain – timeless component of 'rites of passage' transitions
Neutral impact of environment	Seminal impact of environment
Clinical expertise of professional carers	Supportive role of birth companions
Special session/focus on antenatal education	Woven throughout labour preparation sessions
'Menu approach' to options for coping with pain	Supportive strategies for journey of labour
Pain as a management issue for assembly-line birth	Pain as one dimension of labour care in one-to-one, small-scale birth settings
Contributes to trend of rising epidural rates	Contributes to trend to less pharmacological analgesia
Risks of pharmacological agents outweighed by benefits	Cascade of intervention dynamic
First birth special case for 'menu approach'	First birth optimal opportunity for working with pain
Informed choice means all options must be presented	Informed choice within context of birthing plan and philosophy

them in the transition to motherhood. Women in Callister et al's (2003) cross-cultural study of pain perception viewed mastering pain as an integral part of a self-actualising experience and, for some, this increased their sense of self-efficacy. The most moving testimonies come from vulnerable women whose lives prior to birth had been blighted by abuse or disempowerment. Phrases like 'my greatest achievement' (Esposito, 1999), 'I can do anything now' (Spitzer, 1995) and 'I feel so strong' (Walsh, 2006) characterise these stories. In addition to these qualitative papers, randomised controlled trials of midwife-led care, where epidural provision is not available, show higher levels of satisfaction with the birth experience (Hatem et al, 2008). All these studies pose a profound challenge to the 'pain relief' paradigm.

There is a difficulty in debating the topic because it could imply criticism of women who choose or need intervention. Emerging evidence that normal birth primes the bonding areas of a mother's brain better than CS birth adds to this perception (Swain et al, 2008). In recognition that CS birth may undermine birth physiology, obstetricians have been researching the so-called 'natural caesarean' (immediate skin to skin at birth, delayed cord-cutting) to see if normal physiology can be harnessed in this situation (Smith et al, 2008). The advent of the 'mobile epidural' illustrates how obstetric anaesthetists are trying to engage with labour physiology around movement and upright posture to accrue those benefits for women with epidurals.

These attempts to engage with childbirth physiology in the context of medical procedures that undermine it highlights how science struggles to mimic precisely what is natural. The complexities behind oxytocin secretion remind biomedicine that altering one variable (skin to skin in caesarean or bodily movement in epidural), laudable though those initiatives are, will struggle to reproduce the exact conditions for maximising birth physiology (Odent, 2001) – that probably requires a whole system approach (Downe and McCourt, 2008), examining environment, attitudes, beliefs, practices, and relationships, for example.

Elective epidural service

In the light of this discussion so far, a rationale certainly exists for questioning the appropriateness of an elective, 'on-demand' epidural service for women at low obstetric risk, especially if there is public health commitment to increasing the rate of normal labour and birth in the UK. However, given its embeddedness

in maternity service provision, it would be a brave person who would take up such a position. This paper's intent is to simply encourage debate about these issues.

An anecdote is told of a maternity care professional who used to refer to epidurals as 'happidurals'. In the context of a fragmented model of care, with little continuity and patchy provision of one-to-one support in labour, in a clinical environment with little resemblance to home, it is understandable that epidurals are a welcome relief. But it is important not to confuse system failure with women's preference. In fact throughout the UK in different birth settings, women are birthing entirely drug free, even with their first baby. This group can be found in midwifery-led units, birth centres and at home. Although this only represents a small minority of women, surveys suggest many more women would like these options to be available (Redshaw et al, 2007). First birth mothers' stories of drug-free labours tend to remain hidden in small-scale birth settings because they are seldom told beyond these settings. Their testimonies are important for labour ward midwives, obstetricians and anaesthetists to hear, because they are routinely exposed to the opposite. Case reviews in maternity hospitals tend to be of complications and emergencies only.

Conclusion

The evidence is indisputable that epidurals undermine childbirth physiology. That rates are double what they were 20 years ago says more about the context of childbirth and childbirth professionals' attitudes, than it does about the current generation of women's ability to adjust to labour pain. In fact, there is considerable anecdotal evidence that women adapt their expectations to the service provision, so the rare consultant unit that does not have an elective epidural service has not seen a fall in bookings (A Musgrave, 2005: personal communication) and, birth centres remain popular with women where available. However, the vast majority of women anticipating a normal labour and birth enter a large maternity hospital where epidural provision is electively available. In this context, the impact on childbirth intervention rates is profound. Addressing this context requires a rethinking of pain paradigms, attention to birth environment, and a move to more relational models of care. Finally, there needs to be a robust debate about whether epidurals really serve the maternity services best by being an elective choice, especially in relation to normal labour and birth.

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