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Analgesia and anaesthesia in labour

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Summary Analgesia is often required in labour for both humanitarian and medical reasons. Although many techniques are used to provide analgesia in labour, neuraxial (epidural or intrathecal) analgesia is the only technique capable of producing complete pain relief. The use of analgesia in labour is influenced by parity, duration of labour, experience in a previous labour and the induction as opposed to the spontaneous onset of labour. Modern epidural techniques aim to achieve pain relief without compromising motor function and the ability to push in the second stage. This is achieved by using low concentrations of local anaesthetic (bupivacaine 0.065–0.10%) and opioid solutions. Maternal mortality associated with anaesthesia has fallen dramatically in the past 50 years consequent to the increased use of regional anaesthesia for obstetric surgery, together with the more focused training of anaesthetists.

Analgesia in labour

''In sorrow shalt thou bring forth children''.

Genesis. Old Testament.

The provision of pain relief in labour has always met with some opposition. The reluctant acceptance of obstetric analgesia in labour began in 1853 when John Snow administered chloroform to Queen Victoria for the birth of her eighth child—'chloroform à la reine'. Even today, the provision of analgesia in labour remains controversial: a debate between maternal choice, midwifery autonomy and the perceived medicalisation of labour.

The techniques that are currently employed to provide analgesia in labour include:

- antenatal preparation;
- support during labour (Doula);
- transcutaneous electrical nerve stimulation (TENS);
- acupuncture;
- water therapy;
- aromatherapy;
- inhalational analgesia;
- systemic opioid analgesia; and
- regional analgesia.

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Antenatal preparation

The purpose of antenatal preparation is to define the mother's role in labour and teach her how to achieve this. It encompasses two components—education and training. Education must include a realistic expectation of what will occur during labour. Mothers should understand the mechanism and process of labour and delivery, the methods of pain relief available and be acquainted with the environment and people who will be present at the delivery. Focused childbirth education classes are held in most large hospitals in the UK and in many of these an anaesthetist will attend and answer questions relating to the provision of pain relief in labour. Melzack, in his studies on pain, demonstrated a reduction in pain scores after antenatal training, but the difference achieved was small. Assessing maternal satisfaction with the experience of childbirth is difficult and depends on many factors, of which pain and its successful or unsuccessful relief are only a minor part. Therefore, antenatal preparation should leave a mother with realistic expectations and an open mind on how best to cope with the events on the day of delivery.

Support during labour

All mothers should feel confident of continuous personal attention and support during labour. One of the aims of *Changing Childbirth* was that every woman in labour should know the midwife looking after her, thereby ensuring continuity in her midwifery and delivery care. Current shortages of midwives make this ideal difficult to achieve. The presence of a mother's partner, mother or friend during labour is common in the UK but their personal and emotional involvement with the mother, coupled with their own emotional response to the situation, may limit their ability to support her. Hence increasingly, especially in the USA, the services of a professional *doula* (from the Greek word for women experienced in childbirth who lend support to mothers) are being employed. A doula focuses on emotional rather than medical issues, providing support and advocacy, and offering massage and other such relaxing techniques. A Cochrane database review of 14 randomised controlled studies evaluating the effect of the presence of a continuous caregiver (professional or known to the mother) in labour found a reduced need for analgesia, operative vaginal delivery or Caesarean section and a lower incidence of 5-min Apgar scores <7. The advantages of continuous support during labour are such that every effort should be made to ensure its provision for all women.

Transcutaneous electrical nerve stimulation

During labour, pain impulses are transmitted via visceral fibres along Aδ and C fibres, which enter the spinal cord through nerve roots T10–L1 (Fig. 1). Pain is referred to the areas supplied by these

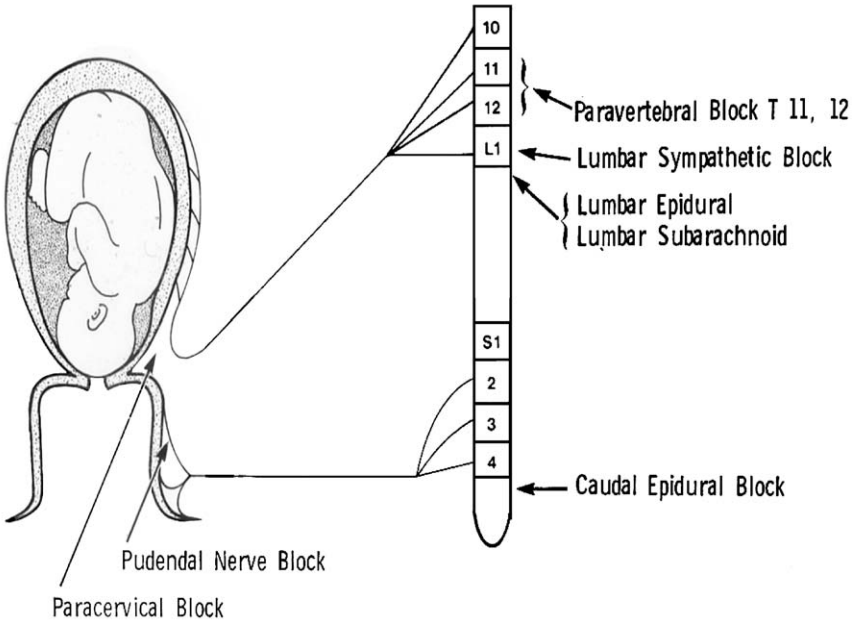

Figure 1 Nerve supply of the uterus.