

the

birth trauma association

helping women traumatised by childbirth

**EPIDURALS
FOR PAIN RELIEF
IN LABOUR**

**By Felicity Reynolds
Emeritus Professor of Obstetric Anaesthesia
St Thomas's Hospital
London**



EPIDURALS FOR PAIN RELIEF IN LABOUR

Epidurals have been around a long time, but it only became feasible to provide them widely for pain relief in labour once a suitable local anaesthetic, called bupivacaine, became available in the UK in 1968. Bupivacaine remains the most widely used drug for the job, but is now used in much reduced doses (the mobile epidural), usually in combination with another sort of pain reliever. This change has made epidurals much safer and less prone to produce side effects than in earlier days.

Today an epidural remains the most reliable way to relieve labour pain. Epidurals are more widely used in many other western countries than they are in the UK. For example, in France, Canada and the USA the majority of women have epidurals for childbirth, and in those countries obstetric complications and abnormal delivery rates are no greater than here – if anything less.

If you have a long painful labour, your need for an epidural is greater, and you are more likely to have one. It is precisely in such labours that you may also need help with the delivery. For example, if the baby's head is not facing the right way, or if the fit between it and your pelvis is a bit tight, then progress is painful and slow, you are more likely to need intervention (ventouse or caesarean section), and your midwife is more likely to encourage you to have an epidural. You should be inclined to accept this advice, as if things are getting difficult it is good for you *and* your baby to have an epidural on the go. But the epidural does not cause the "cascade of intervention" – rather the reverse; this cascade has been set off by the initial problem.

It is not your choice whether you have a quick and easy labour, this is a matter of luck, but it *is* your choice whether you have an epidural (apart from a few fairly rare situations, see below, *Who can and should have an epidural*); it should not be a matter of midwife's discretion.

Just what, exactly, is an epidural?

It is more correctly referred to as *epidural analgesia* (pain relief).

The 'backbone' is made of a series of 24 bony rings placed one on top of the other. The rings form a canal, down which passes your spinal cord, carrying nerves between your brain and all parts of your body. The spinal cord and the nerves coming off it are within a sac, the dura, containing spinal fluid, and the space outside this sac but inside the bony rings is the *epidural space*.

So, *epidural analgesia* involves inserting a tube into the epidural space, and injecting drugs down it as and when needed, to block the nerves that carry pain messages from your uterus. The drugs that are used usually include a local anaesthetic, bupivacaine (or sometimes ropivacaine or levobupivacaine, which are related) in low dose, and a morphine-like drug, fentanyl or similar.

What is a mobile or walking epidural?

Nowadays it is usually possible to provide pain relief without numbness or heavy legs, by using the two types of drug (see previous paragraph) in low dose combination, in other words a 'mobile epidural.' This is not only better in terms of your comfort, but also safer. Local anaesthetics alone should not be used, as larger doses are needed and are less safe. Apparently some midwives tell expectant mothers that mobile or walking epidurals are not provided in a particular hospital. This is confusing. Every epidural for labour pain should be a 'mobile' epidural, but in some hospitals walking about with an epidural is not encouraged. This does not matter as once the pain goes you feel less desire to walk about. Walking in labour with an epidural has little effect on the progress of labour or type of delivery.

If you are told a low dose combination is not used in your hospital, then you should take this up with the consultant anaesthetist in charge of obstetric anaesthesia services.

What is involved?

Setting up an epidural requires some skill, and is usually done by an anaesthetist, a doctor who specialises in this particular field. Such a person therefore needs to be readily available in the place where you are to have your baby, and needs to be there even if you don't have an epidural, as anaesthetists are sort of medical firemen, who cope with many unexpected emergencies.

You will first need a drip, that is fluid running into a vein in your arm. This is often necessary in labour for other reasons. Sometimes it is possible to remove the cumbersome bag of fluid and just leave the little tube in your arm after a while. You will be asked to curl up on your side or sit bending forwards. Your back will be cleaned and a little injection of local anaesthetic given into the skin; this stings for a moment but after this putting in the epidural itself should hardly hurt. A small tube (known as an epidural catheter) is put into your back near the nerves carrying pain from the uterus. This is carried in via a needle, which is then removed. Occasionally when the catheter is threaded in, it produces pins and needles down one leg. There is no need to worry, but you should report it.

Care is needed to avoid puncturing the dura, the bag of fluid that surrounds the spinal cord, as this may give you a headache afterwards. It is therefore important to keep still while the anaesthetist is putting in the epidural, but after the needle is removed and tube taped in place you will be free to move.

Some people feel the pain is so bad before the epidural that they simply cannot keep still. Just remind yourself that moving about does not actually cure the pain, but the epidural can!

While the epidural is taking effect, the midwife will take your blood pressure regularly. The anaesthetist and your midwife will also check that the epidural is working properly. Occasionally it doesn't work well at first, and some adjustment is needed.

Once the tube is in place, pain-relieving drugs can be given as often as is necessary, sometimes by your midwife, or continuously by a pump. In some centres you may even be able to give yourself doses of epidural drugs, via what is called a PCA (patient controlled analgesia) pump.

What is a combined spinal epidural?

An epidural takes about 20 minutes to work; occasionally, for example in late labour, quicker pain relief is needed. In this case, the anaesthetist may start by putting a small dose of drug directly into the dural sac surrounding the spinal cord. This is called a *spinal* and it works much more quickly. Then the epidural catheter is put in and can be used later if needed. Hence the term *combined spinal epidural*. It should only be used when there is urgency.

Who can and should have an epidural?

Most people can have epidural analgesia, provided it is available in the particular hospital.

- If you have a complicated or long labour or twins, your midwife or obstetrician may recommend that you have an epidural. In such circumstances it will benefit you and your baby.
- There are many chronic medical conditions (heart or chest diseases or diabetes for example) that make it difficult for your body to cope with the stress of labour; in these conditions you may also be advised to have an epidural.
- On the other hand, there are certain complications of pregnancy, bleeding disorders and abnormal blood vessels that may make it unsuitable,

because if a blood vessel is punctured the bleeding may cause pressure on important nerves.

- It may be difficult to place the epidural correctly if you have a seriously crooked or abnormal back or are very fat. In these circumstances it may be necessary to call a very senior anaesthetist.
- Having a bad back or a neurological condition does **not** stop you having an epidural. Epidurals are often used to treat back pain.

If you are concerned about any of these problems you should ask to see an anaesthetist during your pregnancy.

When should I have an epidural?

Can it be too early to have an epidural?

Usually you should be in established labour before you have an epidural, although if you need to have your waters broken and cannot relax sufficiently, an epidural can be given first. What counts is that you are definitely going to have the baby. Once you feel you need an epidural, that is when you should be allowed to have one. Several careful studies have shown that, contrary to popular belief, starting an epidural in early labour does not cause delay.

Can it be too late to have an epidural?

If you are about to push the baby out within the next few minutes, then yes it is probably not necessary to have an epidural. If on the other hand you are in late labour but the baby is not facing the right way or the head is still high, then delivering the baby may yet be difficult or delayed and an epidural may be well worth it. It is in late labour that a combined spinal epidural can be useful.

Should it be allowed to wear off in the second stage?

Some midwives and obstetricians believe that stopping the epidural in the second stage (often the most painful time) will help you to have a normal delivery. Actually, studies have shown that this does not always help, particularly with modern light epidurals. If you are having top-ups, it is best to have one at the start of the second stage, while the head is still high. Then by the time the head has come down (you should not be encouraged to push before this) the effect is not at its strongest, and you will feel better able to push. If you are having a continuous infusion with a pump, then it could be slowed a little, but rarely needs to be stopped completely.

What are the pros?

- An epidural is the most reliable form of pain relief in labour.
- You (and you baby) will stay fresh, alert and clear-headed during labour, so you can enjoy the experience to the full.
- It is much pleasanter for your partner not to have to see you in pain and distress.
- Unlike pethidine or Entonox (gas) an epidural should not make you feel light-headed or sick, nor does it normally stop your stomach from working.
- It removes much of the stress of labour and improves the blood supply to the placenta, which is good for the baby. Numerous studies have shown that baby's chemistry is actually improved by a labour epidural.
- If it turns out that you need a ventouse delivery, forceps, removal of the placenta or stitches, the epidural can be used for anaesthesia.
- If you need a caesarean section, a larger dose of drugs can be given down the epidural catheter, and it should not be necessary to have any other type of anaesthetic. (Of course situations may arise when a spinal or general anaesthetic is needed)
- Breast-feeding should not be impaired, unlike with pethidine.

What are the cons?

Blood pressure. Occasionally your blood pressure drops, which is why you have the drip. Extra fluid in the drip can correct the problem.

Poor pain relief. An epidural may become less effective at the end of labour. Sometimes at the start it does not work completely or is one-sided. This may be because you have a funny back or because the anaesthetist or person topping up is not very skilled. They should persevere until it works, and if necessary put it in again. It is usually better to have a specialist registrar than a staff grade anaesthetist; if there is a persistent problem ask for a consultant obstetric anaesthetist.

Headache. This arises because the dura (the bag that holds the spinal fluid) is punctured accidentally while the epidural is being put in. In this country as a whole, there is a less than one in 100 chance of your getting a headache after an epidural. Hospitals vary in their headache rate and should know their own figures, so you might enquire about this. This sort of headache may be severe

and need treatment by an anaesthetist, so you should tell your midwife about it.

Ventouse or forceps. With old-fashioned epidurals, mothers often needed forceps, but now with better techniques and understanding, the problem is less. An epidural sometimes prolongs the second stage and reduces the urge to bear down, but with time the uterus should push the baby out. There may be an increased need for a hormone drip to stimulate the uterus. Even with an epidural, you are more likely to have a normal delivery than any other type of delivery. If you need a ventouse or forceps unexpectedly, then your doctor may recommend an epidural or a spinal for this reason.

Caesarean section. Over a dozen studies (randomised controlled trials and systematic reviews) have now shown unquestionably that epidurals do not 'cause' caesarean sections (obstetricians do!). If you are unfortunate enough to have the sort of labour that experience suggests is heading for caesarean section, then an epidural may be recommended, but it will not make caesarean section more likely, just less troublesome.

Backache. You may feel local tenderness in your back for a day or two after an epidural, but epidurals do *not* cause long-term backache. Backache is common during pregnancy and often continues afterwards when you are looking after your baby.

In fewer than one in 100,000 epidurals an acute backache may be caused by an abscess in your back. This may occur because infection has come from somewhere else, and you will also have a fever. It is important to report this.

Neurological problems.

- Neurological problems after having a baby are most likely to be due to childbirth itself.
- About one in 2000 mothers get a feeling of tingling or pins and needles down one leg after having a baby. Such problems are most likely to be due to childbirth, but occasionally result from a spinal, a combined spinal epidural or even more rarely a plain epidural.
- If you have an infection in your vagina or blood stream, there is a very small chance (about one in 10,000) that a spinal or combined spinal epidural may result in meningitis, which is easily treated with antibiotics.
- Other more serious problems, such as an abscess (see above), happen even more rarely.

- In the early days, big doses of bupivacaine given accidentally into the wrong place caused catastrophes, which are nowadays avoided by correct use of modern techniques.
- *Remember, if we thought epidurals could do you serious damage, out of the blue, we would not offer them.*

Will having an epidural mean I am missing out?

No, on the contrary, having an epidural can help to make your labour a pleasurable experience.

You can condition yourself to believe that having an epidural is a failure, that is your prerogative. But labour with extreme pain is no fun – it is only satisfying in retrospect once your brain has suppressed the memory of the pain. But remember that your partner will not forget how it looked for you, and it is far easier for him to see you comfortable.

With modern epidural analgesia and careful adjustment, it should be possible to have the sensation of birth without so much of the pain.

You can also be assured that you have done the best thing for your baby.

Felicity Reynolds
felicity.reynolds@btinternet.com

Here are some papers published in professional journals that provide evidence to support the assertions in this pamphlet:

Relative merits of different types of pain relief

Chamberlain G, Wraight A, Steer P, eds. *Pain and its relief in childbirth: The results of a national survey conducted by the National Birthday Trust*. Edinburgh, Churchill Livingstone, 1993:pp49-67.

Melzack R, Taenzer P, Feldman P, Kinch RA. Labour is still painful after prepared childbirth training. *Can Med Assoc J* 1981;125:357-63.

Ranta P, Jouppila P, Spalding M, Kangas-Saarela T, Hollmén A, Jouppila R. Parturients' assessment of water blocks, pethidine, nitrous oxide, paracervical and epidural blocks in labour. *International Journal of Obstetric Anesthesia* 1994;3:193-8.

Harrison RF, Shore M, Woods T, Mathews G, Gardiner J, Unwin A. A comparative study of transcutaneous electrical nerve stimulation (TENS), Entonox, pethidine + promazine and lumbar epidural for pain relief in labor. *Acta Obstet Gynecol Scand* 1987;66:9-14.

Effects of epidurals on labour and delivery

Halpern SH, Leighton BL, Ohlsson A, Barrett JFR, Rice A. Effect of epidural vs parenteral opioid analgesia on the progress of labor. (A meta-analysis of 9 randomised trials.) *JAMA* 1998;280:2105-10

Leighton BL, Halpern SH. The effects of epidural analgesia on the progress of labor, maternal and neonatal outcomes: a systematic review. *Am J Obstet Gynecol* 2002;186:S69-77.

Howell CJ, Kidd C, Roberts W, Upton P, Jones PW, Johanson RB. A randomised controlled trial of epidural compared with non-epidural analgesia in labour. *Br J Obstet Gynaecol* 2001;108:27-33.

Loughnan BA, Carli F, Romney M, Dore CJ, Gordon H. Randomized controlled comparison of epidural bupivacaine versus pethidine for analgesia in labour. *British Journal of Anaesthesia* 2000; 84: 715-9.

Halpern SH, Muir H, Breen TW, Campbell DC, Barrett J, Liston R, Blanchard JW. A multicenter randomized controlled trial comparing patient-controlled epidural with intravenous analgesia for pain relief in labor. *Anesth Analg* 2004; 99: 1532-8.

Chestnut DH, Vincent RD, McGrath JM, Choi WW, Bates JN. Does early administration of epidural analgesia affect obstetric outcome in nulliparous women who are receiving intravenous oxytocin? *Anesthesiology* 1994; 80: 1193-1200.

Chestnut DH, McGrath JM, Vincent RD, Penning DH, Choi WW, Bates JN,

McFarlane C. Does early administration of epidural analgesia affect obstetric

outcome in nulliparous women who are in spontaneous labor? *Anesthesiology* 1994;

80: 1201-8.

Chestnut DH, Laszewski LJ, Pollack KL, Bates JN, Mango NK, Choi WW. Continuous epidural infusion of 0.0625% bupivacaine - 0.0002% fentanyl during the second stage of labor. *Anesthesiology* 1990;72: 613-619.

Effects on the baby and breast feeding

Reynolds F. ed: *Effects on the baby of maternal analgesia and anaesthesia*. London, WB Saunders: 1993.

Reynolds F, Sharma S, Seed PT. Analgesia in labour and funic acid-base balance: a meta-analysis comparing epidural with systemic opioid analgesia. *Br J Obstet Gynaecol* 2002; 109: 1344-1353.

Kotelko DM, Faulk DL, Rottman RL, et al. A controlled comparison of maternal analgesia: effects on neonatal nutritional sucking behavior. *Anesthesiology* 1995;**83**:A927.

Halpern SH, Levine T, Wilson DB, MacDonell J, Katsiris SE, Leighton BL. Effect of labor analgesia on breastfeeding success. *Birth* 1999;**26**:83-8.

Effects on the gastrointestinal tract

Petring OU, Adelhof B, Erinmadsen J, Angelo H, Jelert H. Epidural anaesthesia does not delay early postoperative gastric emptying in man. *Acta Anaesthesiol Scand* 1984;**28**:393-5.

Nimmo WS, Wilson J, Prescott LF. Narcotic analgesia and delayed gastric emptying during labour. *Lancet* 1975;i:890-3.

Incidence of complications

Headaches

Gleeson C, Reynolds F. Accidental dural puncture rates in UK obstetric practice. *International Journal of Obstetric Anesthesia* 1998;**7**: 242-6.

Lack of association with backache

Russell R, Dundas R, Reynolds F. Long term backache after childbirth: prospective search for causative factors. *BMJ* 1996;**312**:1384-8.

Breen TW, Ransil BJ, Groves P, Oriol NE. Factors associated with back pain after childbirth. *Anesthesiology* 1994;**81**:29-34.

Macarthur A, Macarthur C, Weeks S. Epidural anesthesia and long term back pain after delivery: a prospective cohort study. *BMJ* 1995;**311**:1336-9.

Loughnan BA, Carli F, Romney M, Dore C, Gordon H. The influence of epidural analgesia on the development of new backache in primiparous women: report of a randomized controlled trial. *International Journal of Obstetric Anesthesia* 1997;**6**:203-4.

Russell R and Reynolds F. Back pain, pregnancy and childbirth. *BMJ* 1997;**314**:1062-3.

Neurological complications of childbirth

Holdcroft A, Gibberd FB, Hargrove RL, Hawkins DF, Dellaportas CI. Neurological complications associated with pregnancy. *Br J Anaesth* 1995;**75**:522-6.

Paech MJ, Godkin R, Webster S. Complications of obstetric epidural analgesia and anaesthesia: a prospective analysis of 10995 cases. *International Journal of Obstetric Anesthesia* 1998;**7**:5-11.

Loo CC, Dahlgren G, Irestedt L. Neurological complications in obstetric regional anaesthesia. *International Journal of Obstetric Anesthesia* 2000;**9**:99-124.