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Some Questions and Answers about Epidural Anaesthesia in Labour and for Caesarean Birth

What is an Epidural?

An "epidural" is an anaesthetic drug placed around the lower spinal cord. It provides numbness to the lower half of the body including those nerves that are responsible for the pain of labour. It commonly involves the use of a catheter (very fine tube) that permits "top up" doses of an anaesthetic agent over many hours if required.

How does it differ from a Spinal Anaesthetic?

With a "spinal" the anaesthetic agent is placed directly into the fluid space of the spinal cord. It is particularly useful for providing rapid anaesthesia for a caesarean birth or forceps-assisted delivery. Both techniques require a specialist anaesthetist and the choice between an epidural and a spinal may rest with that person. However, the processes required and the potential complications are similar.

How is it Done and Does this Hurt?

It is important to know that an epidural anaesthetic may not be available immediately when you ask for it during labour. An anaesthetist must first be located and consulted. This may take a little time and depends on the other medical priorities of the time. Sometimes it is desirable to plan ahead otherwise it becomes necessary to wait for some time before the anaesthetist is able to attend.

It is first necessary to have an intravenous infusion or "drip" placed into your arm. The anaesthetist will then require that you either curl up on your side or sit with your feet over the side of a bed and will ask at various stages of the procedure that you remain as still as possible. After numbing the skin in the lower back, a needle is placed between the vertebrae (backbone segments) in the lower back. A tiny flexible plastic tube (catheter) is placed through the needle. The needle is immediately removed and discarded. The anaesthetic agent is injected through the catheter. The plastic catheter remains in place until after the baby is born or longer if required. The whole process may take between 10 and 30 or more minutes and the numbing effect of the anaesthetic may take as long again to begin working.

Most people experience a stinging sensation when a local anaesthetic is injected into the skin. Some women experience pain or discomfort as the anaesthetist probes with the epidural needle for the correct space but, compared to the pain of labour, this is a minor and temporary discomfort! Many women experience a sense of coldness when "top ups" are added to the epidural catheter but this is not painful at all.

Is it Effective?

Put simply epidural anaesthesia provides the most complete form of pain relief for labour. It is vastly superior to other techniques including natural means of analgesia and narcotics (pethidine and other morphine-like drugs). However, you need to be aware that it may not be 100% immediately effective, all of the time and in all areas. In a few women the technique may fail completely and in some a "patchy block" results in troublesome areas of pain or sensation. Sometimes the catheter can become dislodged from the epidural space and require replacement.

Most anaesthetists prefer to use as small a dose as possible in order to limit the muscle paralysing effect of the anaesthesia. This sometimes means that the labour pains or birth sensations are eased but not abolished. Very small doses of local anaesthetic in an epidural, together with a narcotic drug, forms the basis of the "walking epidural" but actual walking is rarely possible. Most doctors prefer to use a constant infusion of an anaesthetic agent rather than relying on "top up" doses.

What are the Advantages?

Apart from the obvious one of extremely effective pain relief, there are other potential advantages for epidural anaesthesia. There is usually lowering of a mother's blood pressure. This may be useful if high blood pressure or a risk of seizures from pre eclampsia exists. Under some circumstances an epidural may improve the blood, oxygen and nutrient supply to a baby. An epidural is sometimes used when a mother has an uncontrollable urge to push before the cervix (neck of the womb) is completely open.

For Caesarean Birth

An epidural or spinal anaesthetic is safer for mothers and better for babies when compared to the alternative of general (asleep) anaesthesia. Every woman whose baby has to be delivered by Caesarean section should seriously consider these advantages and to discuss them with her doctor(s). However, during a caesarean birth, you need to be aware that there is rarely complete absence of feeling and sensations such as pulling or tugging are common. For a few women it is necessary to convert an epidural Caesarean into a general anaesthetic (commonly referred to as "being knocked out").

What are the Disadvantages?

There is some medical controversy here and quite a few myths both in suburbia and the corridors of hospitals! The only scientific means of assessing an outcome for a particular medical procedure is to randomly assign suitable volunteers to that procedure and an equal number to some alternative. This has been done in a limited way in the evaluation of epidural anaesthesia for labour and childbirth. Such studies could be summarised thus:

- The second stage of labour is longer
- There is an increased requirement for oxytocin infusion to augment contractions
- There is a increased rate of malrotation of the head i.e. persisting posterior position
- There is an increased rate of instrumental assistance for the birth
- There should not be an increased requirement for Caesarean birth.

These problems with epidural anaesthesia are becoming less common with newer techniques and new anaesthetic agents that result in pain relief without muscle paralysis. If the mother and her carers are prepared to wait longer then it may be possible to push the baby out. This can be accomplished without letting the epidural wear off i.e. the mother remains numbed. In one large hospital it was found that about

one third of women who had an epidural delivered spontaneously, one third required the assistance of forceps or ventouse and one third had a Caesarean birth.

What Effects are there on the Baby?

Some of the anaesthetic agent is absorbed into a mother's blood and can be passed to the baby. Both the baby and the mother process drugs chemically in their livers, converting them to an inactive form that is eliminated by the kidneys. In the 1970's researchers reported that neurobehavioural tests of babies and maternal-infant interactions for mothers who had received an epidural in labour were different to those of mothers not so treated. However, these studies were not randomised and did not take into account the reason(s) that the epidural was required or requested. Another thing to bear in mind is that unrelieved pain can create adverse chemical effects in the blood nourishing the baby as well as a potential for adverse maternal infant interactions.

There is no evidence that epidurals increase the risk of fetal distress, low Apgar score at birth, low cord blood pH (a measure of oxygen levels) or jaundice in the newborn. One study found an increased rate of neonatal hypoglycaemia (low blood sugar) after epidural anaesthesia.

What are the Risks?

Every medical procedure or medication has a potential for complications. For epidurals, very serious complications are extremely rare. Less serious unwanted effects occur more frequently but are easily treated. The epidural may lower blood pressure and cause faintness, nausea or vomiting. This low blood pressure is easily treated with intravenous fluids or intravenous medication.

The epidural can cause numbness or weakness of the legs and not infrequently generalised shivering. Some mothers find this unpleasant. This is caused by the effect of the anaesthetic agent on the nerves just like a dentist's injection can make your face numb. Sensation returns to normal when the local anaesthetic wears off. Urinary bladder sensation may diminish and a mother may require a urinary catheter to empty the bladder.

Pregnancy, labour and delivery can cause backache and this is the most likely cause of this symptom after your baby's birth. There is no evidence that epidurals cause ongoing problems in the back.

For about 1% of epidurals i.e. one woman in every 100, the needle causes a loss of cerebrospinal fluid. This can cause a very unpleasant and severe headache in the days immediately after the birth. This may disappear with analgesia tablets or injections and extra fluid or may require a "blood patch" to cure. This consists of the injection of some of the woman's own blood into the epidural space and it is usually spectacularly successful.

Toxic effects of the local anaesthetic drugs are very rare, especially during labour analgesia, when it is possible to give small amounts of the drug at a time, with evaluation of the mother between doses. A large amount of local anaesthetic entering the bloodstream suddenly can cause dizziness, "ringing in the ears" and, in extreme cases, fainting, seizures, or even cardiac arrest. A large amount of local anaesthetic agent entering the spinal space results in arrest of respirations and a profound slowing of the heart. This very rare complication (total spinal anaesthesia) requires artificial ventilation, cardiac stimulatory drugs and often an emergency Caesarean birth. Spontaneous recovery occurs completely within an hour or so. Permanent nerve damage resulting from an epidural abscess or haematoma (bleeding) is another very rare complication of an epidural.

If this description of complications sounds frightening, you can be reassured that most are very minor and easily treated. Your obstetrician, midwife or anaesthetist will be happy to discuss

with you the disadvantages and advantages of epidurals. Overall, they have an extremely high safety record.

Can Anyone have an Epidural?

There are a few situations in which an epidural is medically contraindicated. If there is a significant risk of abnormal bleeding associated with severe pre eclampsia for example an anaesthetist will be concerned about the increased risk of serious sequelae. Previous back surgery or spinal problems may make an epidural anaesthetic more technically difficult but rarely constitute an absolute contraindication.

An epidural will always be provided to a woman who requests one provided that other anaesthetic priorities have been fulfilled by the anaesthetist. However, there not infrequently arises a point in labour when a woman requests an epidural but it is not obstetrically desirable i.e. on the balance of things it is more likely to complicate a birth that is proceeding rapidly and normally. Under these circumstances you would be better to be guided by the professional opinion of your attending midwife and the consulting obstetrician.

Will I Need an Epidural?

The sensations felt during labour vary enormously between individual mothers and often it has little to do with physical fitness, pain thresholds and preparation for childbirth, although each of these may be important. Some women feel little or no pain and some feel a lot. It is difficult for anyone (including your doctor) to be sure that you will or will not require an epidural.

An epidural is especially useful if you are having a long or difficult labour, e.g. with a baby in the "posterior position". Epidurals are more commonly used in women having their first baby.

Whilst you probably have ideas as to how you would like your labour to run, it is often wise to keep an open mind on epidurals. This way you can make a decision about whether or not you would like an epidural when you are experiencing your labour contractions. The labour may be less uncomfortable (or more uncomfortable) than you expected.

Where can I Learn More?

Individual "horror stories" or acclamations of success should be viewed with caution as is the bias of those with an agenda of their own. If you have a specific concern about your suitability for an epidural or know that a Caesarean birth will be required then it may be desirable to arrange a consultation with an anaesthetist during the prenatal period in addition to discussing it with your obstetrician. You can also consult the NICE Information provided at www.nice.org.uk/guidance/cg190/ifp/chapter/Pain-relief

Conclusion

You should not plan to *never* have an epidural. It is also not wise to plan for an epidural if you are aiming for a normal vaginal birth. The best advice is to be aware of all of the pros and cons, the most important of which have been outlined above and to thereafter be guided by the professional advice of your midwife and doctor. That is one of their most important roles.

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