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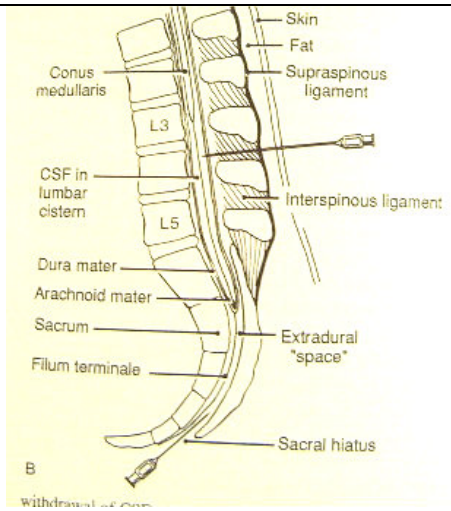
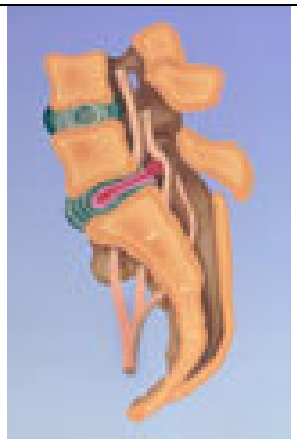
EPIDURAL INJECTIONS

WHAT IS AN EPIDURAL INJECTION?

Epidural injections have been used in the treatment of back pain and sciatica for about 90 years. The use of epidural injections has seen some controversy in the 1980s because of the use of cortisone. Since that time, the National Health and Medical Research Council has determined that there are no definite adverse effects with the use of cortisone in epidural injections.

Epidural injections are mainly known as an injection for pain relief during childbirth, where the effect is only for a fairly short period. In contrast, epidurals are used in back problems in an attempt to produce long term relief. When only local anaesthetic is used, it is reasonable to assume that only short-term relief could possibly be obtained from the injection. In reality, the opposite seems to be the case. Epidural injections without cortisone can induce long term pain relief. The epidural injection is injected into the epidural space. The spinal cord is enclosed within a sac of fluid, which is contained by a membranous layer called the dural sac. The epidural space is the space between this dural sac and the bony vertebral column.





DISC PROLAPSE PRESSING ON NERVE ROOT CAUSING INFLAMMATION OF NERVE.

HOW DOES AN EPIDURAL WORK?

The main effect of an epidural is to reduce pain, but its effect and duration of action is unpredictable. Some people will not receive a benefit from this injection. A number of theories about the action of the epidural exist. The proposed mechanisms of action are as follows:

1. **Stretching of scar tissue or adhesions**
   One of the body's responses to a disc injury is the formation of new tissue. Adhesions are bands of tissue that can form between the disc and normal structures in the back such as the lining of the spinal cord (the dura) and the nerve roots. The injection may act by breaking down these adhesions. The injection acts like a hose of water being squirted into a blocked pipe in an effort to shift the blockage.
2. **Allowing the stiff and painful sciatic nerve to be stretched**
   In back problems with predominant leg pain, one method of pain relief and scar tissue prevention is to stretch the sciatic nerve. This procedure is often too painful both at the time and afterwards. If anaesthetic is used, a better stretch can be achieved, and pain reaction is minimised. Without the anaesthetic it seems that the sciatic nerve resumes its restricted state soon after the stretch.
3. **Breaking the pain cycle**
   After an injury, changes in the electrical activity of the spinal cord occur. Sometimes these changes become abnormal, so that normally inert messages going back into the spinal cord are interpreted as pain. It is thought that local anaesthetics temporarily block these abnormal processes, and this may block the pain cycle. In addition, if normally painful sciatic nerve stretches are performed, the use of epidural may help to prevent pain by the blockade of these abnormal pathways.
4. **Decreasing muscle spasm**
   By blocking the pain the muscles can relax. This may start the healing process.

WHEN IS AN EPIDURAL USED?

The major indication for the use of epidural injections is severe shooting leg pains due to disc prolapse or scarring nerve roots. The pain is typically a shooting or electric shock-like pain down the leg, associated with pins and needles. Epidurals are also used for other types of pain in the leg, termed referred pain, which may be of a deep dull aching quality, and occasionally epidurals are used for acute attacks of low back pain (lumbago), when conservative therapy is not effective.

METHOD OF INJECTION

The injection is performed in the clinic. It typically takes about 10 to 20 minutes. The patient lies face down over a number of pillows on the couch. A small needle is placed in the lower back, just above the coccyx, and local anaesthetic (usually Xylocaine 0.5%) is injected slowly. The injection is done slowly because it minimises the chances of ill effects and pain. However, it is not uncommon to feel transient light-headedness, headaches or nausea. The anaesthetic causes the legs to become tingly and a bit numb for periods of up to about 1-2 hours. The patient may feel weak and unsteady for up to an hour afterwards also, and for this reason it is advisable to have another person drive home.

ARE THERE ANY SIDE EFFECTS OR RISKS?

With any injection there are risks and in this case the risks fall into two main categories: those associated with the injection itself, and those associated with the use of cortisone or steroid.

Injection risks: The risks with the caudal approach to epidural injections are small because the needle is not near any of the vital spinal structures such as the spinal cord. Within the caudal epidural space are a number of veins, and injection into these veins may produce sudden onset of dizziness or light-headedness, which should be reported immediately to the doctor. There is also a rare risk of the needle puncturing the spinal fluid sac. The effect of this is to cause temporary total numbness in the legs, and may produce a headache afterwards.

During the procedure itself the most common side effect is the temporary increase in pain in the back or leg, and headache occurs in about 1% of injections. Allergy to the local anaesthetic is possible, but rare, and any known allergies should be mentioned to the doctor. Immediately after the injection there may be some partial numbness and weakness in the legs, but usually most people are able to walk or drive within about 1 hour. As with any injection through the skin, it is possible for bacteria to gain entry causing an infection, but this again is very rare.

Side effects relating to cortisone (steroid): Some patients experience a hot flush for 24 hours afterwards. Cortisone causes a temporary increase in blood sugar and may result in nausea and restlessness that usually settles within 1 to 2 days.

There was some considerable controversy regarding the use of cortisone in epidural injections in the early to mid 1980s. This followed reports by an American neurologist that epidural injections caused arachnoiditis leading to paralysis and permanent pain. The complications seen in the 1980s were only associated with a particular type of steroid called “Depo-Medrol” and only when the injection was put into the spinal fluid sac (theca). Further research has shown that when placed in the epidural space no problems occurred. As mentioned earlier, the risk of puncturing the spinal fluid sac with a caudal epidural is exceedingly rare.

Depo-Medrol has never been used at this clinic for epidural injections. The type of cortisone used here is called Celestone Chronodose, which is a water-soluble material that leaves no residue within the spinal canal. It has been established with recent studies, that where sciatica has been present for longer than 3 months, there does appear to be an advantage in using cortisone in the epidural resulting in 60% success in reducing sciatica. There have been some further recent studies using a new approach to epidurals via the transforaminal route, which have a reported 78% success rate. If there is no response from a caudal epidural injection then the transforaminal route should be tried, which is performed under X-ray control as an out-patient procedure at the Alfred Hospital by Dr Victor Wilk.

COST

The Medicare Schedule fee is $167.75, the Australian Medical Association recommended fee is $496, (rebate $142.60 from Medicare). Our fee for the caudal epidural is $220. This is in addition to any consultation fee. The fee for transforaminal epidural under fluoroscopy is $250.

AFTER THE INJECTION

Generally speaking you should go home and lie down and take it easy for the day. The next day you can resume light activity including return to light work. It usually takes 7-10 days for the full effects of the injection to work.