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Epidurals & Nerve Root/Dorsal Root Ganglion Blocks

Indication

Injections into the space around the spinal nerves or spinal cord can be done for a number of reasons, but they are typically done because of nerve pain. The commonest reason for nerve pain is from a bulging disc irritating or compressing one of the spinal nerves, eg the S1 nerve that goes into the sciatic nerve that travels down the leg causing sciatica. There are other reasons why patients may have nerve pain that may indicate an epidural or dorsal root ganglion block to be performed.

The spinal cord travels down the length of the neck and back to upper lumbar region. The spinal nerves come off it and exit the spine at all levels. The Dorsal Root Ganglia is a small swelling on the nerve where it exits the spine at the small hole known as the intervertebral foramen. Where an injection mainly stays outside of the foramen it referred to as a nerve root block, and where it mainly goes inside, beyond the dorsal root ganglion and through the intervertebral foramen, it is known as a transforaminal epidural. The Dorsal Root Ganglia is an important processing hub for sensory and pain nerves as they enter the central nervous system.

Both procedures can serve a diagnostic (to determine where the pain is coming from and whether it is responsive) or a therapeutic role (treatment). They can also sometimes be used to determine whether a patient will benefit from Pulsed Radiofrequency Treatment later on. Where they are done for diagnostic reasons you may only experience temporary relief. In other situations it is not uncommon for patients to report prolonged relief up to several months.

Technique

Epidurals can be done from the bottom near the tail bone (caudal epidural), through the back or neck (interlaminar epidural), or through the side of the back (transforaminal). There are advantages and disadvantages of each, and your consultant will advise you. A transforaminal epidural is most closely related to a dorsal root ganglion or nerve root block, which also entails injecting in the side of the spine, where the nerve exits.

The procedure typically involves lying on your front on a procedure table, though for dorsal root ganglion blocks in the neck you may be positioned on your side or back. An intravenous cannula will most likely be sited in the back of your hand, and you will have monitors applied to check your heart rate, blood pressure and oxygen levels. The skin will be cleaned with sterilising agent and

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the site draped with sterile drapes. Local anaesthetic will be administered to the skin. An X-ray machine, with or without ultrasound, will be used to take pictures that will help your Consultant to guide the needles in to the correct position. Usually a contrast agent that shows up on x-ray is used to check the needle position and that the likely spread of the injection is correct. Steroid is often added to the injection*. The number of injections required will be determined by your Consultant.

Success

It is difficult to give an accurate figure for success from these procedures, as they serve both a diagnostic (determining where your pain is coming from) and therapeutic (treatment) role. There can be many other factors individual to each patient that could mean your pain will not respond to the injections. The amount of relief depends upon whether all of your pain is coming from the area targeted or whether some is coming from elsewhere, such as the muscles, bones, or joints. Where all or most of the pain is arising from the area targeted, and assuming your pain is responsive, then 100% relief is not uncommon in the first few hours while the local anaesthetic is working. Some patients can get significant and lasting relief, but it may not be a cure.

Side Effects

As with any procedure, side-effects may occur. These are usually minor but may include:

- Mild local tenderness and/or bruising at the site of the injection; this usually settles over the first few days
- The local anaesthetic may cause numbness and/or weakness in your arms or legs and other areas, depending on where the injection was performed. Should this occur, the effect is temporary and should rapidly resolve over minutes or hours.
- Blood pressure may drop temporarily which can occasionally make patients feel faint, though this is not common.
- Worse pain can occur if the muscles and nerves are very sensitive and have been irritated by the injection. Try not to be inactive but to keep gently moving about and do some gentle stretching.
- Failure of procedure. Injection treatments are not always effective. There are a number of reasons for this, but sometimes they may not help your pain.

Complications

Complications from epidural and spinal nerve blocks are rare. If they occur you should seek medical attention.

- Headache. Rarely the needle can go through the thin lining around the fluid (CSF) bathing the spinal cord and nerves - a dural puncture. This may result in headache that requires treatment. If you develop a severe headache following your procedure it can be managed with paracetamol, lying flat (sometimes up to 24 hours), and drinking plenty of water. Continue with your usual caffeine drinks that you are used to taking. If the headache persists for more than 24 hours please contact your Consultant or GP.

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- Infection. If there is local warmth or redness over the site of injection with tenderness and/or you feel hot and unwell you should seek advice from your Consultant or GP. This may require antibiotic treatment
- Nerve damage. There are important nerves in the spine, but serious nerve injury resulting in weakness, paralysis or permanently worse pain is extremely rare (less than 1 in 10,000 cases)
- Injury or collapse of the lung (pneumothorax). This is a risk of spinal nerve root injections in the thoracic region (upper back, chest). This is very rare. If you get chest pain or breathlessness, you should seek immediate medical help.
- Seizures or strokes. These are risks of injections in the cervical spine (neck). These are extremely rare and would usually be apparent to you and your Consultant at the time of the procedure.

** see Use of Off-licence Medication in Chronic Pain*

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