

Nerve Root Sleeve Injection 神經根管注射

Background

A nerve root sleeve injection is an injection of local anaesthetic agent and/or steroid into the opening at the side of the vertebral body where a nerve root exits. The injection has diagnostic and therapeutic purposes for radiculopathic pain. For diagnostic indication, it may confirm whether your pain is due to nerve root problem e.g. inflammation or irritation of nerve root(s). For therapeutic indication, it can treat pain related to nerve root problem and provide varying duration of pain relief.

How does root sleeve block work?

There are two types of medications for root sleeve injection:

1. Injection of local anaesthetic agent to block the pain signal.
2. Injection of steroid help reducing the inflammation and swelling of spinal nerve roots and so decreases the pain.

Pain relief may be quite effective during the first few hours while local anaesthetic agent is working. However, pain may return after this. If steroid is used, it usually takes several days to work and may last up to 3 months after the injection. You are less likely to benefit from repeated injection if the first injection does not offer pain relief.

You must increase your activity while your pain is improved and strengthen your muscles to minimize the chance of your pain recurring.

The Procedure

- The procedure is usually done in the operating room under sterile condition.
- The procedure is usually performed under local anaesthesia. Sedative agent may be administered
- A small cannula is first inserted into your vein.
- You will be asked to lie on your front for back injection or lie on your back for neck injection.
- Please keep still during the procedure to avoid any complication.
- After disinfecting the skin, the doctor will insert a small needle.
- X-ray (with contrast) will be used to confirm correct needle position.
- You may feel temporary paraesthesia when the needle is placed near the nerve.
- After local anaesthetic or/and steroid is injected, an adhesive bandage will be applied.
- The injection takes a few minutes, but the whole procedure (including preparation and positioning) may take about 30 – 60 minutes.
- You may feel temporary limb weakness, numbness or tingling in the distribution of the nerve after the injection if local anesthetic agent is used.
- Depending on the extent of the pain and number of nerve roots involved, more than one injection may be performed.

Risk and Complications

Generally, the procedure is safe. Like all other procedures, side effects and complications could occur, although in most cases these are uncommon and not serious. However, serious and potentially life threatening complication could occur in rare occasions.

Common risks and complications

- Mild pain at needle insertion site.
- Allergic reaction to medications and contrast injected but serious reaction is rare.
- Increase in pain.

Uncommon risks and complications

- Adverse effects related to steroid use are usually self-limiting because it is usually used in a low dose. These include facial flushing, insomnia, nightmares, nervousness and increased glucose level in diabetes. Whether low dose steroid leads to avascular necrosis remains controversial.
- Significant bleeding and hematoma formation
- Local anaesthetic related convulsion, arrhythmias or death.
- Nerve injury to the nerve root during injection leading to numbness of the area or weakness of muscles supplied by the nerve.
- Temporary paralysis and headache if there is perforation of the membrane covering the spinal cord with subsequent injection of local anesthetic agent around the spinal cord. It may cause breathing difficulty if this occurs in the neck region.

Rare risks and complications

- Bacterial infection

Very rare risks and complications

- Permanent neurological damage or paralysis may occur due to trauma to the nerve roots, spinal cord or due to vascular injury and embolism to arterial supply of the spinal cord or brain.

*Reference of occurrence rate

Very common	Common	Uncommon	Rare	Very rare
1 in 10	1 in 100	1 in 1000	1 in 10,000	1 in 100,000

Before the procedure

You may be requested to fast for at least 6 hours before the procedure. Please ask your doctor or nurse about the need to fast. You should also inform medical staff of any past allergy, and major medical problems and inform them if you are taking antiplatelet and anticoagulation drugs. Ask your doctor whether you should continue your regular medication on the day of procedure. If you feel unwell on the day of procedure, please inform the Hospital to postpone the procedure to another day.

The procedure risks may increase and need further discussion if:

1. You are allergic to any of the medications to be injected
2. You are on a blood-thinning medication (e.g. warfarin)
3. You have an active infection

After the procedure

You may resume oral intake only after being assessed by the nursing staff in the ward. If sedative has been used, you should avoid operating heavy machinery, signing legal documents or drive for the rest of the day. Patients who have been given sedation, or have difficulty in walking should be accompanied by a family member or friend.

Follow up

A pain clinic follow up appointment will be arranged for you after the procedure. However, if serious adverse effect or complication develops after the procedure, you should seek medical advice at the nearest Accident and Emergency Department.

Remarks

This is general information only and the list of complications is not exhaustive. Other unforeseen complications may occasionally occur. In special patient groups, the actual risk may be different. For further information, please contact your doctor.