

Introduction

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

How does nerve root sleeve injection work?

There are two types of medications for root sleeve injection.

1. Injection of **LA** to block the pain signal. Pain relief may be quite effective during the first few hours while LA agent is working. However, pain may return.
2. Injection of **steroid** to reduce the inflammation and swelling of spinal nerve roots and so decreases the pain, steroid usually takes several days to work and may last up to 3 months after the injection. You must increase your activity while your pain is improved and strengthen your muscles to minimize the chance of your pain recurring. You are less likely to benefit from repeated injection if the first injection does not offer pain relief.

How is root sleeve injection performed?

1. Usually done in operating room sterile conditions, under LA. Sometimes a sedative or analgesic may be administered.
2. An intravenous cannula is first inserted into your vein in forearm / hand.
3. You will be asked to lie on your front for back injection or lie on your back for neck injection.
4. The doctor will disinfect the target site with an anti-septic solution, and numb the skin and deeper tissues with a LA using a very thin needle.
5. A small injection needle is inserted on your back to reach the target nerve just beyond its exit point from the spine under X-ray guidance, you may feel temporary paraesthesia. A small amount of X-ray contrast may be injected to confirm correct placement of needle. Keep still during the procedure to avoid any complication.
6. LA agent or/and steroid is/are then injected. Depending on the extent of the pain, injection at more than one nerve roots may be required. You may feel temporary limb weakness, numbness or tingling in the distribution of the nerve after injection of LA.
7. The needle is removed and an adhesive bandage is applied.

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 (e.g. warfarin). 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.

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 driving for the rest of the day. Patients who have been given sedation, or have difficulty in walking should be accompanied by a friend to go home.

What are the side effects and potential 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. Potential side effects and complications include:

1. At needle insertion sites: Pain, infection, bleeding and hematoma formation.
2. Allergic reaction (to medications and contrast injected) may develop, but serious reactions are uncommon.
3. The LA might make you feel dizzy. In extreme cases, it might cause convulsion, arrhythmias or death.
4. Adverse effects related to steroid use (such as facial flushing, insomnia, nightmares, nervousness and increased glucose level in diabetes) are temporary and uncommon because usually only small dose is used.
5. X-Ray radiation risk. Although you will only receive small dose of radiation, it is harmful to fetal development. Please inform your doctor or nursing staff if you are, or may be pregnant.
6. Temporary paralysis and headache if there is perforation of the membrane covering the spinal cord with subsequent leaking of LA agent around the spinal cord. It may cause breathing difficulty if this occurs in the neck region.
7. Very rarely, permanent neurological damage or paralysis may occur due to trauma to the nerve roots or spinal cord, or due to vascular injury and embolism to arterial supply of the spinal cord or brain.

Follow Up

A pain clinic follow up appointment will be arranged. If serious adverse effect or complication develops before the appointment, you should go to 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. Evangel Hospital reserves the right to amend this leaflet without prior notice. We welcome suggestions or enquiries on the information provided in this leaflet. Please contact our Healthcare professionals so that we could follow up and make improvement.

Reference

Hospital Authority: "Nerve Root Sleeve Injection" (2020)
Smart Patient: [Anaes_NerveRootSleeveInjection_0159_eng.pdf\(ekg.org.hk\)](#)(19-07-2023)