

## **Nerve Ablation 神經消融法**

### **Background**

Nerve ablation is a procedure that aims to provide pain relief by destroying and interrupting the nerve supply to painful area.

### **How does nerve ablation work?**

1. There are three ways to interrupt and destroy the nerve supply:
  - Using heat (radiofrequency ablation)
  - Using freezing (cryo-ablation)
  - Using medication, e.g. alcohol (chemo-ablation)

During the procedure, contrast media may be used to confirm position of needle and local anaesthetics with/without steroid may be injected to the nerve before and after the nerve ablation.

2. The procedure is unlikely to remove all your pain, but it is considered successful if there is significant improvement afterwards.
3. You must increase your activity while your pain is improved and strengthen your muscles to improve your functional status.

### **How is the nerve ablation performed?**

1. This procedure is usually done in operating room under sterile conditions.
2. The procedure is usually performed under local anaesthesia. Sometimes a sedative agent may be administered.
3. An intravenous cannula is first inserted into your vein.
4. You will be asked to lie on different positions depends on the site of the nerve to be denervated.
5. Please keep still during the procedure to minimize the risk of complication.
6. The doctor will disinfect the target site with an anti-septic solution.
7. Procedure will be done under ultrasound or x-ray guidance.
8. The skin and deeper tissues are numbed with a local anaesthetic using a very thin needle.
9. The nerve ablation needle is then inserted to the desired position.
10. Stimulation of the nerves may be used to confirm correct placement of the nerve ablation needle. During stimulation you may feel some twitching in the muscles. This is normal and it tells us to readjust the needle position to the correct site.

11. To further confirm the needle position, contrast may be given. After confirmation, local anesthetics will be given.
12. The innervating nerves are then destroyed by heating or freezing or injection of a medication.
13. Steroid may be given after nerve ablation to reduce postoperative inflammation.
14. The procedure time varies according to the number of nerve ablations to be done, 30-60 minutes is an average time.
15. The needle is removed and an adhesive bandage is applied.

### **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. Pain at needle insertion site.
2. Bacteria infection is rare.
3. Bleeding and hematoma formation may occur.
4. Some patients may develop allergic reaction to medications and contrast injected, but serious reactions are uncommon.
5. The local anaesthetic might make you feel dizzy. While care is taken to avoid excessive doses, in extreme cases, it might cause convulsion, arrhythmias or death.
6. Adverse effects related to steroid use are temporary and uncommon because it is usually used in a low dose and for short term use. Adverse effects included facial flushing, insomnia, nightmares, nervousness and increased glucose level in diabetes.
7. X-ray radiation risk. Although you will only receive small dose of X-ray radiation, it is harmful to the fetal development. Please inform your doctor or nursing staff if you are, or think you may be, pregnant.
8. During the denervation procedure, there is a small risk of destroying the nerves to the muscle and skin. If this happens, you may have a numb patch over the procedure site that may last for weeks to months. In some cases, you may feel pain over the affected area.
9. On rare occasion, trauma to the nerve root or spinal cord during the insertion of

needle may occur and lead to leg weakness. Rarely, paraplegia may occur.

10. The full effect of the treatment can take as long as six weeks for its maximum effect.

### **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.