

FACT SHEET

Radiofrequency Neurotomy (RFN)



Radiofrequency neurotomy (RFN) is a well established treatment for facet joint pain, which has been previously diagnosed where appropriate with diagnostic facet joint injections, or better, medial branch blocks. The medial branches arise from the dorsal rami, which in turn arise from the spinal nerve at each vertebral level. They innervate the facet joints as well as some of the smaller posterior para-vertebral muscles (multifidus).

RFN is performed under sterile conditions in an operating theatre using mild sedation and local anaesthetics. Fluoroscopic x-ray guidance allows the operator to accurately position the radiofrequency probe adjacent to the medial branch nerves to be treated. The nerve is then heated to 90 degrees centigrade using a radiofrequency generator.

The facet joints can be the sole cause or a contributing cause of the pain. If these joints are the sole cause, the RFN may produce total pain relief. If they are a contributing cause the patient will feel somewhat better. If they are not the cause of pain at all, a RFN will make no difference.

HOW ACCURATE IS THE DIAGNOSIS?

The diagnostic confidence using medial branch blocks is increased by

doing more medial branch blocks, each requiring another session in the procedure room. In the diagnosis of cervical (neck) facet joint pain, two positive blocks at the same anatomical level provide a reasonably high diagnostic confidence; however, in the diagnosis of lumbar (low back) facet joint pain, the diagnostic confidence is not high (due to the lower prevalence of lumbar facet joint pain – this is a statistical technical fact). As a consequence, particularly in the lumbar spine, it is best to consider the diagnostic process as follows: a positive block means that facet joint pain is possible, and a negative block means that the facet joint is not the source of pain.

WHAT HAPPENS TO THE NERVES?

Patients can be reassured that the nerve function recovers, generally in about 12 months. As the outer sheath of the nerve remains intact, the axons do regenerate so that normal function eventually returns. Note that most of these nerves do not have a cutaneous distribution. Thus, persistent superficial sensory changes, including dysesthesias, are uncommon.

It has been demonstrated that the muscles innervated by these medial

References:

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2. McDonald GJ, Lord SM, Bogduk N. Long-term follow-up of patients treated with cervical radiofrequency neurotomy for chronic neck pain. Neurosurgery 1999;45: 61-68
3. Dreyfuss, P; Halbrook, B, Pauza, K, Joshi, A, McLarty, Jerry, Bogduk, N. Efficacy and validity of radiofrequency neurotomy for chronic lumbar zygapophysial joint pain. Spine 2000;25; 1270-1277

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branches do undergo atrophy following successful denervation. However, patients never complain of weakness or instability following the procedure. As the medial branches are not near to the ventral rami, RFN does not cause weakness or paralysis. Patients have, for example, played in AFL finals and grand slam tennis finals within weeks of these procedures.

HOW WILL THE RFN HELP?

A number of studies have been performed on the efficacy of RFN. The initial papers concerned the treatment of neck pain and headaches following motor vehicle accidents. In a randomised controlled double-blind study it was demonstrated that the inter-quartile improvement of more than 50% pain relief was in the order of 500 days in the treatment group, and a few days in the control group^{1,2}. Subsequently it has been shown that lumbar RFN is effective for proven facet joint pain. Dreyfuss et al, demonstrated that at 12 months 60% of subjects had 90% relief, and 90% had 60% relief.³

SIDE EFFECTS:

- Allergic reaction to the medications used in the procedure or sedation is possible but can be treated on the day: nausea is not uncommon following sedation.
- Infection is extremely unlikely with the possibility minimised by the use of sterile techniques in an operating theatre. The needles are all disposable.
- Post procedure soreness is extremely variable, and in rare circumstances can last for up to two months. In general, however, it is eased in a few days. Even if pain is prominent the patient should resume normal activities rapidly. In cervical radiofrequency neurotomy there is a higher chance of short term neuropathic pain (tingling, burning pain and the area sensitive to touch) and this may last for up to 8 weeks.
- It is uncommon for even a day of work to be lost; however, if there was an infection or excessive pain, there is a possibility of some time off work.

AFTER THE PROCEDURE:

Generally the patient is discharged from the hospital within two hours and may resume normal activities on the following day. Simple analgesics are often required for a few days. Patients who have been using stronger analgesics generally require stronger analgesia for a few days. Patients may feel some burning (neuropathic pain) or numbness after the procedure.

If patients develop neuropathic pain after the procedure, other medications may be required. Neuropathic pain is best treated with medications that alter neural conductivity. If the pain is present mainly at night, low dose tricyclics, such as amitriptyline 5-25 mg, is suitable. For pain during waking hours, anti-epileptics such as gabapentin (100-300 mg doses) are preferred. Note that neuropathic pain is less likely to respond to analgesics. We often recommend topical mixtures of these medications and the compounding pharmacist is available should this be required.

Patients are advised to keep mobile with gentle exercise and stretching. An appointment for a review is made with a doctor or physician associate six weeks post procedure.

CAN THE RFN BE REPEATED?

The treatment lasts for at least a year on average. Scientific studies have demonstrated that around 60% of patients have 90% relief persisting at one-year post treatment, while 90% of patients have at least 60% relief at the same follow-up period. If it wears off, and the same pain recurs, it can be repeated. RFN can be done on multiple occasions. Thus, if there is a good response and the effect abates, contact the clinic for a repeat procedure.

DISCLAIMER

Please note the contents contained in this Patient Fact Sheet are not intended as a substitute for your own independent health professional's advice, diagnosis or treatment. At Metro Pain Group, we assess every patient's condition individually. As leaders in pain intervention, we aim to provide advanced, innovative, and evidence-based treatments tailored to suit each patient. As such, recommended treatments and their outcomes will vary from patient to patient. If you would like to find out whether our treatments are suitable for your specific condition, please speak to one of our doctors at the time of your consultation.

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