

Small is beautiful: the minimally invasive treatment of sciatica

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Technological advances are moving spine surgery toward a more minimally invasive era.

In the past few years, advances in endoscopic instruments have allowed fusion, correction of scoliosis, and discectomy to be performed in a minimally invasive manner with quite good results.

There are many causes of back pain and sciatica, but the most common is foraminal compromise due to disc herniation and spur formation. However, sciatica can also be caused by tumors in the pelvic cavity, spinal cord, or spinal column, requiring medical staff to make a precise diagnosis and initiate treatment as soon as possible.

Most cases of sciatica caused by bone spurs can be treated successfully with drugs and rehabilitation. However, if conservative treatment fails, aggressive surgical treatment is necessary. When appropriate to the cause and severity of the pain, consider performing the following minimally invasive procedures:

1. Transforaminal Selective Nerve Block

A selective nerve root block or transforaminal epidural steroid injection is a variation of the traditional midline epidural steroid injection. The spinal nerve roots exit the spine laterally. A specific inflamed nerve root can often be identified based on your medical history, a physical exam, and MRI findings. A steroid can then be placed within that specific nerve root sheath to relieve pain. Local anesthetic is commonly injected along with the steroid to confirm the identity of the injured nerve. If dramatic pain relief occurs soon after the procedure, you and your physician can be confident that the injected level is the source of your pain. The duration of action of the local anesthetic is usually only a few hours, but the steroid that was injected along with the local anesthetic will ultimately provide longer-lasting relief. The procedure takes only 15–20 minutes. Weakness occurs in some patients but will resolve after 1–2 hours. In our experience, about 60–70% of patients originally thought to require discectomy can be satisfied with this nerve block procedure.

2. Percutaneous Endoscopic Discectomy

This surgery is performed under local anesthesia, with the patient awake. Special surgical instruments, and laser and amplitude-frequency technology increase the success rate of this operation. Patients can feel obvious improvement of their symptoms throughout and after the procedure. The operation time is 1 hour, and the incision is only about 0.5 cm long. As there is little damage to paravertebral tissue, patients can get out of bed on the day after surgery.

Our accumulated experience of over 100 cases since 2001 has not included any nerve damage or vascular complications or any postoperative infection. The surgical success rate is now up to 80% or more.

3. Microendoscopic Discectomy

This surgery is performed with the patient under general anesthesia. An approximately 2-cm incision is made and its diameter increased by tubular distraction. After softening of the paraspinal muscles, discectomy and decompression of the nerve root are performed via video-assisted endoscopy. Patients can get out of bed on the day of or the day after microendoscopic discectomy. The hospital stay is significantly shorter than for traditional surgery.

4. Endoscopic posterior spinal screw fixation and fusion technique

Posterior spinal screw fixation and fusion is performed to treat spinal instability and spinal stenosis. The disadvantages of the traditional approach are the need for extensive soft tissue dissection and the prolonged recovery period with chronic low back pain and weakness. Therefore, minimally invasive endoscopic fusion surgery, which has achieved U.S. Food and Drug Administration certification, is an important treatment option because it addresses the problem with less pain and an earlier recovery.

Conclusion

Minimally invasive spinal surgery has gradually replaced traditional surgery and is the current trend in the field of spinal surgery. The advantages are not only cosmetic but also include a shorter recovery period and less pain. Our orthopedic spine team will keep abreast of these developments to provide our patients with the best possible medical care.

<http://www1.cgmh.org.tw/intr/intr2/c3270/enortho/index.html>

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