

FACT SHEET

Percutaneous Plasma Discectomy



Many Australians experience agonising and sometimes debilitating back pain every year, due to contained herniated discs. Commonly referred to as a 'pinched nerve', this injury can be accompanied by intense pain in, and around, the lower back, and referred into the legs.

These discs, which are sandwiched between the spinal vertebra, are composed of two parts: a firm protective outer shell called the annulus; and a soft, spongy center called the nucleus.

WHAT CAUSES CONTAINED HERNIATED DISCS?

A healthy disc is like the shock absorber of an automobile, providing a cushion against jolts caused by simple movements like running or jumping. If the annular ring, or the protective shell of the disc, is damaged by injury or weakened by normal aging processes, a portion of the shell can give way to pressure from the spongy nucleus, causing an outward bulge. It's this unnatural bulge, or 'herniation', that is often responsible for the pain.

WHY ARE THEY PAINFUL?

A bulge may put pressure on the adjacent nerve root, compressing the nerve pathway against the bony structure of the spine. The irritated nerve may cause you to feel pain in the parts of the body served by that nerve:

- where the disc is damaged, pain may be felt in the back; and can refer to the leg
- where a nerve root is compromised, pain is felt in the legs (sciatica) and may be felt in the back.

DISC DECOMPRESSION

Decompressing the nucleus of the disc is a proven technique for relieving disc herniations, and for treating the painful symptoms it causes. Similar to letting air out of a bicycle tyre, removing tissue from the center of a disc causes a reduction of pressure within the disc. This in turn leads to a reduction in the pressure that the disc applies to other parts of the body, such as nerve roots or the spinal cord.

Some forms of disc decompression are performed through a minimally invasive catheter or needle.

REFERENCES

1. Sharps LS, Isacc Z. Percutaneous disc decompression using nucleoplasty. *Pain Physician* 2002; 5: 121-126.

This type of procedure is performed through the skin ('percutaneously'). It minimises trauma to the patient and allows for shorter hospital stays and faster recovery than traditional open surgical techniques.

Percutaneous plasma discectomy (also known as percutaneous disc decompression) has been used to treat herniated discs for over 40 years and in over 500,000 patients. A variety of techniques have been used to decompress discs, including chemical, mechanical, and thermal/heat (radiofrequency and laser) methods. While the basic mechanism of percutaneous plasma discectomy has been well understood, each of the previous methods has had limitations.

PERCUTANEOUS PLASMA DISCECTOMY

Percutaneous plasma discectomy uses a minimally-invasive catheter to create an accurate one-millimetre pathway into the disc. This procedure is designed to offer a fast-acting option to drug therapies and steroid injections, as well as a minimally-invasive alternative to open surgery.

WHAT IS INVOLVED IN THE PROCEDURE?

You will be under sedation during the procedure. A micro-engineered alloy transmitter is introduced into the disc. Radio wave signals are sent through the transmitter into the jelly-like nucleus of the herniated disc. The radio waves produce a low-temperature ionised gas, which breaks up molecular bonds in the spongy nucleus, removing tissue volume.

When the procedure is complete, the transmitter is withdrawn. Normally, the entire procedure takes 20 to 30 minutes, and you'll be ready to walk out of the clinic in about an hour, with no hospital stay required.

WHAT RESULTS CAN I EXPECT?

The removal of nucleus tissue relieves pressure on the disc shell. The disc typically returns to a more natural shape, and the source of nerve root irritation is either minimised, or eliminated in most cases, allowing you to resume your normal, daily activities.

Percutaneous plasma discectomy is clinically proven with over 35,000 patients treated worldwide. The radio wave technology has been used successfully for years in over 2.5 million procedures, such as knee and shoulder surgery, and tonsillectomy.

Outcome studies have demonstrated overall success for disc compression to be around 79%¹ with significant reduction in pain scores and substantial improvements in sitting, standing and walking times. Greater than 95% of patients report minimal discomfort during the procedure. There are no significant complications reported to date.

For more information

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