

PERCUTANEOUS PLASMA DISCECTOMY

Percutaneous Plasma Discectomy (PPD) is a scientific advance in minimally invasive intra-disc needle intervention for the treatment of discogenic back pain as well as sciatica derived from contained disc protrusion.

The procedure uses a thin catheter to create an accurate one-millimeter pathway into the disc. Normally, the entire procedure takes 20 to 30 minutes. PPD is designed to offer a fast-acting option when conservative therapies are leading nowhere, on the one hand, and a minimally-invasive alternative to open surgery, on the other.

PPD is a percutaneous decompression treatment for spinal disc herniation. In some cases where conservative treatment is unsuccessful, this modality can provide an alternative to open surgery. PPD is an outpatient treatment, administered under local anaesthetic. Worldwide, the procedure has been administered more than 100,000 times since 2000.

A number of PPD techniques have been reported, beginning with the description of chemonucleolysis in 1963. This was followed by percutaneous decompression in 1975, automated percutaneous lumbar discectomy in 1985 and laser discectomy in 1987. PPD is the most recent development, and reportedly represents a significant advance in terms of risk, complications and recovery time.

No RCTs investigating PPD have yet been published.

The Process of PPD

An introducer needle is placed at the interface of the nucleus and annulus under fluoroscopic guidance, and the Radio Frequency probe is introduced. PPD employs radiofrequency energy to create a focused plasma, which converts tissue to gas at temperatures between 40 and 70 degrees centigrade. This process creates a series of channels in the nucleus, de-bulking and thus decompressing the disc. Colliquation of 1-2 mls of tissue can be achieved in several minutes.

No aspiration is necessary, as the gas passes out through the introducer needle.

Indications for Treatment

PPD is not appropriate for large herniations or those with extruded fragments; when surgery is required lumbar microdiscectomy or discectomy remain the preferred treatment in these cases. The majority of herniations, however, are small and contained. In over 50% of cases, clinical symptoms disappear with time, and the herniation shrinks over 8-9 months. PPD can provide pain relief during this period.

If the disc prolapse is mainly central (that is, directed backwards rather than to one or other side, the presenting complaint is likely to be back pain rather than leg pain. Clinical features that indicate a greater likelihood of PPD working in such instances include severe restriction of lumbar flexion (bending forwards) and reduced straight leg raising test. These tests indicate the possibility of dural irritation. The disc prolapse should be more than minor. If the disc prolapse directed backwards but more to one side (i.e. posterolateral) it is more likely that leg pain will be a feature. This pain may be referred in nature rather than radicular. That is, the leg pain may be diffuse rather than shooting.

PPD may be an appropriate treatment for patients with:

- Radicular pain greater than back pain
- Poor response to previous medical treatment and physiotherapy
- MRI demonstrating disc herniation less than 6mm in size.

The procedure may not be appropriate for patients with:

- Spondylolisthesis
- Segmental instability
- Herniation ≥ 6 mm in size, or with extruded fragments
- Severe disc degeneration
- MRI finding of complete annular disruption
- Age >60 years
- A painful disc which has height less than 50% of that of the adjacent

For further information please contact Reveale Surgical on 1300 473 832