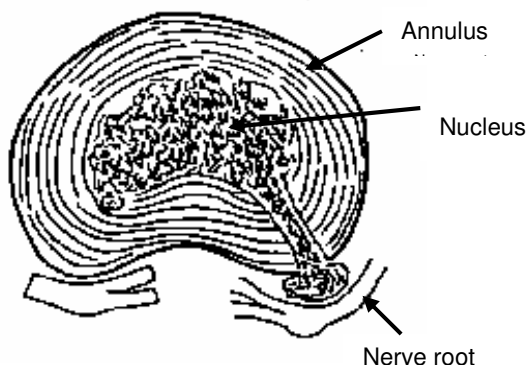


INTERVERTEBRAL DISC PROLAPSE

Intervertebral discs are tough fibrous pads joining each of the spinal vertebrae. Each intervertebral disc is composed of a tough outer layer of ligament, the annulus fibrosis, and a soft gelatinous core, the nucleus pulposus. The structure acts as a shock absorber to cushion the vertebrae during movements of the spine, and to minimise jarring when jumping or running.



A quite common, painful disorder of the spine, in which the outer layer of an intervertebral disc ruptures and part of its pulpy core protrudes, causing painful and sometimes disabling pressure on a nerve. About 95% of disc prolapses occur in the lower back, but they can affect any part of the back or neck.

CAUSES

Although a prolapsed disc may sometimes be caused by a sudden strenuous action (such as lifting a heavy weight or twisting violently), it usually develops gradually following recurrent episodes of back strain, and where there is some pre-existing disc degeneration.

People between the ages of 30 and 40 are most likely to suffer from a disc prolapse. Over the age of 30, discs start to dehydrate and become less resilient, but after 40 extra fibrous tissue forms around them, increasing their stability. A disc prolapse is slightly more common in men than in women.

SYMPTOMS

Degenerating or bulging discs usually cause local back pains but when the disc prolapses, the irritation of the nerve root causes a shooting pain running down the back of the leg from the buttock to the foot (called sciatica), sometimes accompanied by numbness and tingling. Low back pain and sciatica are usually aggravated by coughing, sneezing, bending and sitting for long periods. Prolonged pressure on the nerve root can lead to weakness in the muscles of the leg.

A disc bulge is one where the annulus fibrosis has been injured but without leakage of the soft core. The disc becomes inflamed and swollen but not sufficient to compress a nearby nerve root. A bulging disc in the neck may cause local neck and shoulder ache, whilst if the nerve root is compressed by a prolapse, there may be tingling, shooting pains, numbness and weakness in the arm and hand on the same side.

Comprehensive spinal and joint care

In rare cases, pressure is exerted on the spinal cord itself, sometimes leading to paralysis of the legs and loss of bladder or bowel control. This is an indication for urgent operation.

DIAGNOSIS

Many other disorders may cause back and leg pain or neck and arm pain. However, the diagnosis of disc prolapse can usually be confidently made on the basis of presenting symptoms and the doctor's examination procedure. Further tests including CT scans or MRI scans may confirm the diagnosis, but are usually not necessary unless surgery is being contemplated.

TREATMENT

In most cases, symptoms are relieved by bed rest (lying in a position of most comfort on a firm mattress for several days) and non-steroid anti-inflammatory analgesics (aspirin like medication). Recovery occurs as the protruding material dries and withers away whilst the ruptured annulus fibrosus (outer layer of ligament) heals over, over a period of 6-8 weeks.

As pain eases and the patient is allowed out of bed, physical therapy may include: heat, traction, ultrasound, massage, mobilisation (small rhythmic oscillations), special exercises and the prescription of a supportive brace or neck collar. Home neck traction may be helpful for disc prolapses in the neck.

An epidural injection of local anaesthetic (with or without cortisone) may be recommended to relieve sciatica, allow earlier physical therapy and help prevent adhesions of the nerves. It is useful in about 70% of cases allowing earlier recovery and return to work. The injection may need to be repeated once or twice. If unsuccessful, another type of epidural may be performed under X-ray control called a transforaminal epidural injection.

For disc prolapses in the neck, epidural injections are much more difficult and an alternative is to take cortisone tablets or have a cortisone injection directed at the posterior joints in the neck at the level of the prolapse.

Occasionally, if the sciatic pain is persistent and severe, or if there is muscle weakness and reflex changes, or if the bladder or bowel function is impaired, surgery may be needed. The long term outcome of surgery versus conservative treatment is about the same. In principle the smaller the operation the better. Options include:

- **Chymopapain injection** – an injection of enzyme material into the disc nucleus to shrink the disc.
- **Discectomy** – when just the prolapsed portion of disc is removed – either by laser or open operation.
- **Laminectomy** – discectomy plus part of the posterior bony part of the spinal canal is removed to allow extra room for the compressed nerve.
- **Laminectomy and fusion** – laminectomy plus where the vertebrae are joined together when there is associated instability.

As a general principle, we recommend the minimal invasive procedure needed to free the nerve irritation. As a rule the bigger the operation the greater the risk of complications.