Degenerative lumbar spine disease

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Background

Degenerative lumbar spine disease (DLSD) is a disease of the lumbar spine with or without neural compression of the population. Imaging evidence of DLSD is present in 70 percent of those over the age of 70. Though symptoms, however, is poor, with many asymptomatic patients, a significant proportion of patients with a herniated central lumbar disc is a special concern.

In terms of etiology, in most patients, a genetic or environmental factor is involved. Other causes include congenital abnormalities, infections, inflammation, and rare conditions.

Diagnosis of degenerative lumbar spine disease

The primary symptom of DLSD is axial pain, with a peak age of 55 to 65 years. The pain is often described as cramping, dull, aching, or burning. It is typically located in the lower back but may extend down the legs. Other common symptoms include stiffness, loss of motion, and weakness.

Central lumbar canal stenosis typically presents with shooting pain and numbness in the legs, and often radiation to the feet. Neurological deficits can also occur, such as changes in sensation, motor weakness, and bladder or bowel dysfunction.

Management of degenerative lumbar spine disease

Management of DLSD requires a multidisciplinary approach comprising of, at least, neurosurgeons/spinal surgeons, a neuroradiologist, pain specialists, and physiotherapists. This is to provide the patient with the most effective treatment for their particular symptoms. Although patients with DLSD represent the biggest group of patients seen in a general neurosurgical clinic, a small proportion will ever need surgery.

In patients presenting with acute/chronic isolated back pain, without neural compression or spinal instability, conservative measures are likely to settle the pain in the majority. Such measures include weight reduction, structured exercise programmes; analgesics such as paracetamol, non-steroidal anti-inflammatory drugs or opioids; physiotherapy; spinal manipulation by qualified osteopaths or chiropractors; and acupuncture. In patients with chronic pain (more than one year), epidural injections; transcutaneous electrical nerve stimulation (TENS) and combined physical and psychological rehabilitation programmes may be of additional benefit. The role of surgery in such patients remains controversial. Spinal fusion may benefit selected patients. Where instability (degenerative spondylolisthesis) complicates back pain, spinal fusion may achieve good pain control. Percutaneous spinal instrumentation systems now available, allow minimally invasive surgery with more rapid recovery and a shorter hospital stay.
In patients with DLSD and radicular pain, conservative measures are usually sufficient to improve the symptom in six to eight weeks. If severe pain persists beyond this time, or if a motor neurological defect, such as a foot drop, is present, serious consideration should be given to surgery. The timing of surgery is particularly important if neurological recovery is to be achieved. The aim of surgery is to decompress the neural elements and the most common operations performed are lumbar laminectomy and lumbar microdiscectomy. The recent development of endoscopic microdiscectomy technique allows day-case local anaesthetic surgery with the additional benefit of excellent cosmetic results. Spinal cord stimulation remains an effective treatment in patients with severe pain especially if pain persists despite decompressive surgery.

**Prognosis of degenerative lumbar spine disease**

The prognosis of patients with DLSD depends on the underlying diagnosis, delivery of prompt treatment and psycho-socio-economic factors. Well motivated patients with a good social support network are more likely to recover well and resume work. Despite all the treatment available, some 20 percent of patients become chronically disabled, especially with back pain. In others, conservative and surgical measures are effective in improving the symptoms. Spinal dural and radicular pain respond well to surgery with up to 90 percent pain relief. When motor weakness is present or in patients with cauda equina syndrome, the timing of surgery is crucial in determining any neurological recovery with the best results seen in patients operated within 48 hours of presentation. The prognosis for recovery of sensory deficits such as numbness and paraesthesia is less predictable.

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