Degenerative lumbar spine disease

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Background

Degenerative lumbar spine disease (DLSD) is a condition of lumbar spine with or without neural compromise. Imaging evidence of DLSD is a common finding in adults with a prevalence of up to 40% percent of those over the age of 70. Therefore, DLSD is more common in older adults, but it can occur at any age and is the most prevalent cause of lower back pain. While the majority of DLSD is asymptomatic, it can cause low back pain and discomfort in the lower back, buttocks, or posterior thighs. In terms of exercise, some patients are more symptomatic with exercise, whereas others do not notice any improvement or worsening with exercise.

Diagnosis of degenerative lumbar

The primary symptom of DLSD is back pain. Pain in this condition is typically localized to the lower back and is often associated with sciatica (pain radiating down the leg). Symptoms may vary from mild to severe and can include numbness, tingling, or weakness in the legs. In addition, DLSD can affect the function of the spinal cord and nerves, causing symptoms such as loss of bladder or bowel control. Physical examination may reveal signs of spinal instability, such as rotation or lateral bending. Imaging studies such as X-rays, MRI, or CT scans can be used to confirm the diagnosis and assess the severity of the condition.

Management of degenerative lumbar spine disease

Management of DLSD requires a multidisciplinary team approach comprising of, at least, a neurosurgeon/spinal surgeon, a neurologist, pain specialists and physiotherapists. This is important to provide the patients 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/subacute 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. When 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-social-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 10 percent of patients become chronically disabled, especially with back pain. In others, conservative and surgical measures are effective in improving the symptoms. Spinal cord stimulation 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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