Management of Degenerative Disk Disease and Chronic Low Back Pain

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KEYWORDS

• Disk • Degeneration • Chronic • Low back • Pain • Conservative • Surgery • Genetic

Low back pain (LBP) affects every population and is one of the world's foremost debilitating conditions.[1] Such pain may lead to diminished function and quality of life, psychological distress, and loss of wages.[2] LBP is one of the most common conditions motivating individuals to seek medical care and often results in prolonged therapeutic interventions.[2,3] Therefore, LBP is a global burden associated with severe socioeconomic and health care consequences.[4–6]

LBP can be divided into several groups based on cause: 80% to 90% mechanical (eg, degenerative disk or joint disease, vertebral fracture, deformity); 5% to 15% neurogenic (eg, herniated disk, spinal stenosis), 1% to 2% nonmechanical conditions (eg, neoplastic disease, infection, inflammatory), 1% to 2% referred visceral pain (eg, gastrointestinal disease, renal disease, abdominal aortic aneurysm), and 2% to 4% other (eg, fibromyalgia, somatoform disorder, malingering).[7] Typically, patients with LBP complain of local pain aggravated by mechanical loading, usually at worst when being upright, and they have no or minimal symptoms at rest. It is generally agreed that intervertebral disks are a major tissue source in chronic LBP.[8,9] Typically, chronic LBP has been defined as pain occurring for 3 months or more, frequently recurring, or lasting beyond the normal healing period for a low back injury.[10,11] If, in case of prolonged LBP, magnetic resonance imaging (MRI) is obtained and a common finding is disk degeneration at the 2 or 3 lowest lumbar levels (**Figs. 1–3**).[12,13]

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Fig. 1. A 33-year-old woman with chronic LBP for 1 year and left-sided sciatica for 4 months. T2-weighted sagittal MRI images showed disk degeneration from L3 to S1. An L4/5 discectomy was performed, and on last follow-up the patient was asymptomatic.

According to international clinical guidelines, treatment of acute LBP (ie, <3 months) is straightforward in the absence of red flags (**Table 1**) or sciatica symptoms. Often, pain medication is provided and the patient is advised to stay active.[14] However, in the context of chronic LBP, there are several treatment options, but no clear answer exists as to how the physician should plan the treatment process. This article reviews treatment options for the management of chronic LBP and assesses the evidence on their effectiveness, with particular emphasis on degenerative disk disease.

THE ROLE OF DISK DEGENERATION IN CHRONIC LBP

MRI is not recommended early in the disease course unless red flags or signs of nerve root entrapment are present. The reason is that MRI in acute LBP increases medical costs without giving additional information influencing clinical decision making.[15–17] Furthermore, MRI in the current form is not useful in diagnosing discogenic pain when compared with discography.[9] However, discography per se has been found to enhance progression of disk degeneration,[18] and therefore recently published guidelines were not in favor for discography.[19] According to Ohtori and colleagues,[20] injection of a small amount of

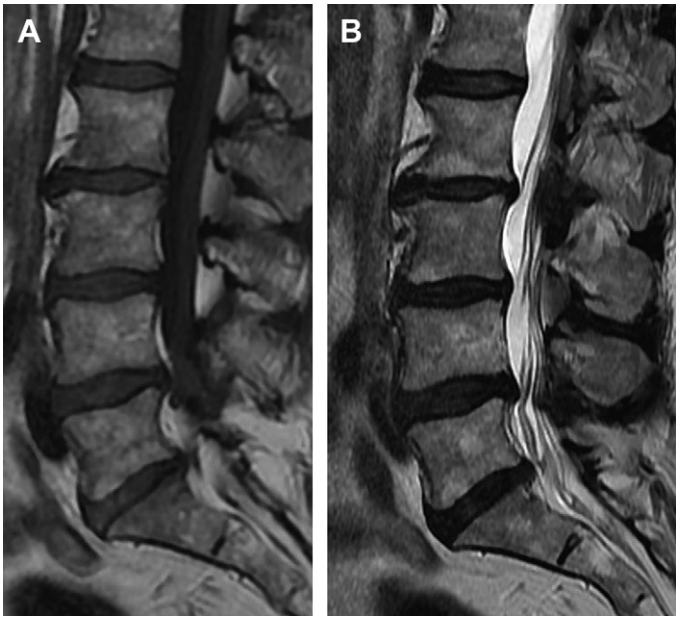

Fig. 2. A 52-year-old woman with chronic LBP for 10 years. She experienced left-sided sciatica for 1 year with no relief with conservative treatment, including physiotherapy and nerve root blockade. (*A*) T1- and (*B*) T2-weighted MRI sagittal images showed disk degeneration from L1 to S1 with mixed type I/II Modic lesion at L5/S1. She eventually underwent an L4/5 discectomy and decompression.