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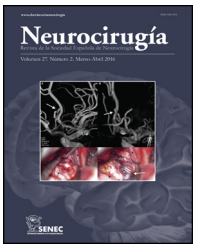

Review article

# Lumbar disc herniation: Natural history, role of physical examination, timing of surgery, treatment options and conflicts of interests☆

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ABSTRACT

*Introduction:* Indication for surgery in lumbar disc herniation (LDH) varies widely depending on the geographical area.

*Development:* A literature review is presented on the natural history, role of physical examination, timing of surgery, evidence-based treatment, and conflicts of interests in LDH. Surgery is shown to provide significant faster relief of pain compared to conservative therapy, although the effect fades after a year. There is no treatment modality better than the rest in terms of pain control and neurological recovery, nor is there a surgical technique clearly superior to simple discectomy. The lack of sound scientific evidence on the surgical indication may contribute to its great geographical variability.

*Conclusions:* Since LDH has a favourable natural history, neuroimaging and surgery should not be considered until after a 6-week period. It is necessary to specify and respect the surgical indications for LDH, avoiding conflicts of interests.



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## Hernia discal lumbar: historia natural, papel de la exploración, *timing* de la cirugía, opciones de tratamiento y conflicto de intereses

*Palabras clave:*
Hernia discal lumbar
Ciática
Discectomía
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Conflicto de intereses
Historia natural

RESUMEN

*Introducción:* La cirugía de la hernia discal lumbar (HDL) es una de las intervenciones con mayor variabilidad geográfica en su indicación.

*Desarrollo:* Se realiza una revisión bibliográfica sobre la historia natural, el papel de la exploración neurológica, el *timing* de la cirugía, el tratamiento basado en la evidencia y el conflicto de intereses relativos a la HDL. La cirugía acorta significativamente el tiempo de dolor respecto al tratamiento conservador, aunque este efecto se diluye a partir del año. No parece existir una modalidad terapéutica superior al resto respecto del control del dolor o de la recuperación neurológica, ni una técnica quirúrgica claramente superior a la discectomía simple. La gran variabilidad geográfica puede deberse a una ausencia de criterios científicos sólidos en la indicación.

*Conclusiones:* La historia natural de la HDL es favourable y debe respetarse un mínimo de 6 semanas antes de indicar pruebas de imagen o considerar la cirugía. Es preciso concretar y respetar la indicación quirúrgica, evitando los conflictos de intereses.



## Introduction

Low back pain (lumbago) and low back pain radiating to the lower limbs (sciatica) are very prevalent in industrialised countries, such that at least 30% of the population suffers from such pain at some point in their life.[1] This type of pain may have multiple origins. It is caused by a lumbar disc hernia (LDH) in around 85% of cases.[2] An LDH occurs when part of the intervertebral disc is displaced towards the spinal canal, thereby compromising the thecal sac and/or nerve roots. In general, LDH manifests as low back pain radiating to the lower limb with a distribution area corresponding to the dermatomes of the nerve roots involved. In industrialised countries, back pain due to LDH or other degenerative osteodiscal changes is the leading cause of occupational absenteeism, one of the main reasons for consultation in primary care and one of the most prevalent causes of chronic pain, second only to headache.[3] It is estimated that the direct and indirect costs associated with the management of degenerative spine disease are as high as 1–2% of the GDP of the country: around three times all oncology treatments put together.[3]

The natural history of sciatica caused by an LDH is favourable in the medium and long term in the vast majority of patients.[1,2,4,5] The recommended initial treatment is generally conservative, given that a high percentage of patients recover or experience gradual and substantial pain improvement in 4–6 weeks.[1,2] Therapies aimed at managing sciatic pain are largely ineffective. Prolonged bed rest is not recommended,[6] and analgesic and/or rehabilitative treatment manages to only partially relieve the pain of the majority of patients.[1–4]

Throughout recent decades, a number of therapies have been proposed to manage sciatic pain caused by LDH. No single therapy appears to provide a significant benefit over the rest, and it is doubtful whether they improve the natural history of the disease.[7,8] However, it seems that, in properly screened patients, surgical treatment of LDH (through simple discectomy or some variant of microdiscectomy) shortens pain duration and allows an earlier return to work, although it does not prevent subsequent attacks of sciatica.[9–13] Even so, in the medium and long term, surgery does not seem to surpass conservative treatment in terms of pain control.[9–11] LDH surgery has classically been indicated in patients with a serious or progressive neurological defect and in patients in whom disabling pain persists despite physical therapy and/or analgesic medicinal treatment.

In general, surgical treatment of degenerative spine disease in its many variants, including LDH, receives weak or at least controversial support in the literature.[14,15] The enormous geographic variability in the rate of surgical indication[16,17] for discogenic low back pain and also in sciatica due to LDH render this type of procedure among the worst indicated of those performed, especially when it is accompanied by any spinal fusion technique.

Moreover, degenerative spine surgery is expensive and inevitably associated with a certain degree of morbidity. At present, there is a large number of devices and implants that are used in surgery for LDH and in other degenerative osteodiscal diseases. In addition, in recent decades, new surgical techniques have been developed, such as percutaneous and minimally invasive approaches (MIS). However, to date, no technique seems to significantly improve upon the results obtained by classic discectomy.[18]

Degenerative spine disease surgery, and LDH surgery in particular, is not immune to the influence of the pharmaceutical industry. Conflicts of interest often arise in this type of disease, to which some spinal surgeons are susceptible. The reasons for this appear to vary and are often related to the powerful commercial machinery and the incentives provided by this industry. In an interesting book, Peter C. Gøtzsche (a prestigious Danish researcher and a co-founder