

The Essence of Clinical Practice Guidelines for Lumbar Spinal Stenosis, 2021: 1. Definition, Epidemiology, and Natural History

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clinical findings.

There is no consensus on the LSS definition as the etiology and pathological changes have not been completely elucidated.

Definition of Lumbar Spinal Stenosis

Summary

The narrowing of the lumbar spinal canal or intervertebral foramen (anatomically not included in the spinal canal) may result in disorders of the nervous and/or vascular elements, leading to symptoms. However, at present, there is no consensus on the definition of lumbar spinal stenosis (LSS).

Commentary

Based on a historical background¹⁾, LSS is not a single disease but a combination of various symptoms²⁾. At present, there is no uniform view on the definition of LSS³⁻⁶⁾.

Disorders of the nervous and/or vascular elements are caused by the lumbar spinal canal or intervertebral foramen (anatomically not included in the spinal canal), and they induce symptoms in patients with LSS. In this edition, the diagnostic criteria (draft) of the 1st edition were revised, and the diagnostic criteria for LSS are proposed as follows: 1) presence of pain and numbness from the buttocks to the lower limbs, 2) symptoms from the buttocks to the lower limbs that appear or are exacerbated by continuous standing or walking and are alleviated with the maintenance of a forward flexion or sitting position, 3) either with or without low back pain, and 4) presence of findings of degenerative stenosis in imaging results, such as MRI, that can explain

Natural History of Lumbar Spinal Stenosis

Summary

The actual natural history is unclear because of the absence of epidemiological surveys and follow-up research reports on untreated cases. Results regarding the clinical course of ≥ 10 years were satisfactory in 50%-60% of mild-to-moderate cases, but because severe cases for which surgery is indicated were excluded, it was not possible to draw conclusions about the natural history of severe cases. In addition, severe spinal stenosis in imaging is found to be associated with symptom exacerbation, and it may be a prognostic factor.

Commentary

1. Association with smoking history

Participants were classified according to smoking category, and heavy smokers had a higher risk of undergoing surgery than moderate or former smokers⁷⁾.

2. Association with electromyography

Fifty-six patients with mild-to-moderate LSS were followed-up for an average of 88 months. Thirty-four patients (60.7%) achieved satisfactory results with the various conservative treatments, while six patients (10.7%) under-

went surgery due to the exacerbation of symptoms. An abnormal H-wave finding of the soleus muscle in electromyography was confirmed as a predictor of unsatisfactory outcome⁸⁾.

3. Association with imaging findings

In LSS patients followed-up for 3 years, 44.3% underwent surgery, and cauda equina syndrome (OR = 3.38) and degenerative spondylolisthesis/scoliosis (OR = 2.00) were significant predictors leading to surgery⁹⁾. LSS patients followed-up >10 years were exacerbated in 38%, and patients who underwent surgery had an initial cross-sectional area of the dural sac of <50 mm² ¹⁰⁾. Additionally, a spinal canal transverse diameter on CT of ≤13.6 mm was an independent predictor of unsatisfactory clinical outcome¹¹⁾.

Conflicts of Interest: The author declares that there are no relevant conflicts of interest.

The original version of these clinical practice guidelines appeared in Japanese as Youbu Sekichukan Kyosakushou Shinryo Guidelines, and their translated version in English was published in the Japanese Orthopaedic Association clinical practice guidelines on the management of lumbar spinal stenosis, 2021-Secondary publication. *J Orthop Sci.* 2022 May 18;S0949-2658(22)00116-6. doi: 10.1016/j.jos.2022.03.013.

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