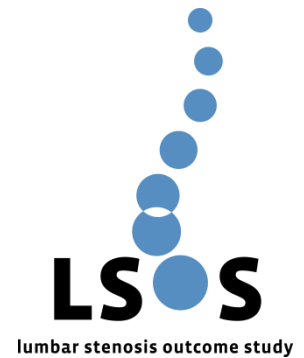


Abstract

Consensus of MRI parameters and intra- and inter-reader agreement for describing lumbar stenosis



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Purpose

To define radiological criteria and parameters that should be used as a minimum standard in a structured radiological report for patients with lumbar spinal stenosis. A Delphi survey among 21 renowned international experts in spine imaging was performed regarding quantitative, semiquantitative, and qualitative radiological criteria and parameters to characterize lumbar spinal stenosis.

Methods/Materials

To assess the inter- and intra-reader agreement of commonly used quantitative and qualitative image parameters for the assessment of degenerative lumbar spinal canal stenosis (LSS).

Results

Radiological criteria and parameters were distinguished with regard to the relevant anatomical space (central, lateral, and foraminal stenosis) and according to their quantitative or qualitative nature. MRI of 100 patients (median age 72.5 years, 48 % female) were evaluated by two independent radiologists. MRI parameters were assessed and intra-class correlation coefficients (ICC) for the inter-reader agreement were calculated. Repeated image evaluations were performed by one reader to calculate the intra-reader agreement.

Conclusion

Five core radiological criteria should be used in a radiological report describing lumbar spinal stenosis. k values for the parameters ranged between 0.42 for inter-reader agreement and 0.59 for intra-reader agreement (compromise of the foraminal zone) and 0.77 for inter-reader agreement and 0.8 for intra-reader agreement (relation between fluid and cauda equina).