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Axial loading during MR imaging can influence treatment decision for symptomatic spinal stenosis

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Abstract

BACKGROUND AND PURPOSE:

Previous studies have shown that axial loading can narrow the spinal canal. However, the clinical significance is unclear. The purpose of this study was to determine if the narrowing of the spinal canal with axial loading during MR imaging could influence treatment decision for spinal stenosis.

METHODS:

Two hundred patients with clinical symptoms of spinal stenosis had routine MR imaging immediately followed by axially loaded MR imaging. We selected 20 of these patients because they had narrowing of the spinal canal on the axially loaded images. Three experienced neurosurgeons evaluated these 20 patients based on clinical information and routine MR images. The same neurosurgeons were then asked for second treatment decisions based on the same clinical information but with axially loaded MR images.

RESULTS:

Axial loading during MR imaging of the lumbar spine can influence neurosurgeons in their treatment decisions for symptomatic spinal stenosis. In this selected group of patients, all of three neurosurgeons changed their treatment from conservative management to decompressive surgery in five patients when shown the axially loaded MR images. In two other patients two neurosurgeons changed and in three additional patients one surgeon changed in the same fashion. There was no patient in whom the neurosurgeon changed from surgical treatment to medical management when shown the axially loaded images.

CONCLUSION:

In selected patients with spinal stenosis and apparent narrowing of the spinal canal on axially loaded MR images, the additional information gained from this technique can influence experienced neurosurgeons in their treatment decisions.