

Pain immediately upon sitting down and relieved by standing up is often associated with radiologic lumbar instability or marked anterior loss of disc space.

Maigne JY; Lapeyre E; Morvan G; Chatellier G

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STUDY DESIGN: Comparison of functional radiographs in consecutive patients with low back pain with or without pain on sitting down and relieved by standing up.

OBJECTIVES: To detect radiologic signs possibly associated with a clinical symptom.

SUMMARY OF BACKGROUND DATA: No link has been established between increased vertebral mobility and a specific pain pattern or a clinical symptom.

METHODS: Forty-two patients seen consecutively with low back pain occurring immediately on sitting down and relieved on standing up were compared with 32 controls whose low back pain did not show this pattern. Dynamic radiographs were taken in extension, erect, flexion, and sitting in the painful position. The segments thought to be responsible for the pain were identified by comparing clinical, radiographic, and magnetic resonance data. Endplate angles, rotation, and translation were measured. The radiographs were read twice each by two independent observers.

RESULTS: Eighty-six percent (95% confidence interval, 72-99%) of the patients with the symptom were female. The segments identified as the source of pain were as follows: L4-L5 in 20 cases and L1-L2 to L3-L4 in 22 cases. Mean rotation of these segments was 13.9 +/- 4.5 degrees in the patient group versus 7.5 +/- 4.3 degrees in the control group ($P < 0.001$). In 14% of the patients (vs. 3% of controls), it exceeded 20 degrees ($P = 0.13$). Anterior or posterior translation $>10\%$ was seen in 31% of the patients (vs. 0% of controls; $P < 0.001$). In flexion, the endplate angle was -5.2 +/- 3.6 degrees (patients) versus 1.2 +/- 5.7 degrees (controls) ($P < 0.01$) and <-5 degrees in 55% of patients versus 12.5% of controls ($P < 0.001$). This value of <-5 degrees was associated with marked anterior loss of disc space.

CONCLUSION: Low back pain occurring immediately on sitting down and relieved on standing up was statistically associated with instability (specificity 100%, sensitivity 31%) or marked anterior loss of disc space in flexion (specificity 87%, sensitivity 55%).