Abstract

Facet joint effusion on supine MRI in patients with lumbar spinal stenosis: correlation with listhesis on upright radiographs

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Purpose

To assess the correlation between facet joints effusion in MRI and grade of listhesis on upright conventional radiographs in patients with clinically suspected lumbar spinal stenosis (LSS).

Methods/Materials

MR images and upright conventional radiographs of 50 consecutive patients (31 female, 19 male, mean age 73 years) with LSS were retrospectively evaluated in this institutional review board–approved study. The grade of listhesis was assessed on upright radiographs and was measured in Millimeters (mm). The facet joints effusion (in mm) was evaluated in the corresponding segment of the listhesis in axial T2 weighted MR images. Intraclass correlation coefficient statistics were performed to investigate into the inter-reader agreement. Pearson analysis was conducted to assess the correlation between facet joint fluid in MRI and grade of listhesis in upright conventional radiographs.

Results

The mean listhesis in radiographs was 6.6 ± 3 mm. The mean facet joint effusion in MRI was 1.4 ± 1.4 mm (range 0 - 5 mm). A significant positive correlation was found regarding the amount of fluid in the facet joints in MRI and the grade of listhesis measured on radiographs ($p < 0.05$). ICC values demonstrated an excellent inter-reader agreement for listhesis (ICC=0.91) and substantial (0.55) for inter-reader agreement regarding joint fluid.

Conclusion

Lumbar facet joints effusion on supine MRI correlates with listhesis on the upright radiographs in patients with clinically lumbar spinal stenosis. Thus the diameter of the fluid within the facet joint may be an indicator for the extent of listhesis on upright position.