Functional MR imaging of the cervical spine in patients with rheumatoid arthritis

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PURPOSE: To evaluate functional MR imaging in patients with rheumatoid arthritis (RA) involving the cervical spine. MATERIAL AND METHODS: We used a device that allows MR examination to be made of the cervical spine in infinitely variable degrees of flexion and extension. Dynamic functional MR imaging was performed on 25 patients with RA. RESULTS: Functional MR imaging was able to show the degree of vertebral instability of the occipito-atlantal or atlanto-axial level as well as the subaxial level. By performing functional MR imaging, we were able to demonstrate the extent of synovial tissue around the dens, and the impingement and displacement of the spinal cord during flexion and extension. The basilar impression, the cord impingement into the foramen magnum, the cord compression, the slipping of vertebrae, and the angulation of the cord were all much more evident in functional than in static MR imaging. CONCLUSION: Functional MR imaging provided additional information in patients with RA, and is valuable in patients who have a normal MR study in the neutral position and yet have signs of a neurological deficit. Functional MR imaging is important in the planning of stabilizing operations of the cervical spine.

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