[Kinematic versus static MRI study of the cervical spine in patients with rheumatoid arthritis]

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PURPOSE: The objective of this study was to compare the diagnostic value of cinematic magnetic resonance imaging with static MRI examinations in patients with rheumatoid arthritis and concomitant attack of the cervical spine.

METHODS: Dynamic functional MRI examinations of the cervical spine were performed on five subjects without complaints and 20 patients with rheumatoid arthritis. For the functional studies, a positioning frame was used that allowed infinitely variable forward and backward inclinations of the head.

RESULTS: Functional magnetic resonance imaging made possible a sufficiently good differentiation of the extension of pannus tissue cranial, ventral, and dorsal of the dens with possible displacing and impinging effects on the spinal cord during flexing and stretching movements. In addition, it is suitable for demonstration of the degree of instability in the atlanto-occipital and atlanto-axial planes. In contrast to conventional X-rays, CT, and static MRI, basilar impression as well as compressions and angulations of the cervical bone marrow are better visualized by cinematic magnetic resonance tomography.

CONCLUSIONS: Functional magnetic resonance tomography is an important diagnostic method for the induction of the cervical spine in patients with rheumatoid arthritis. In particular, fusion and instabilities as well as compressions of the bone marrow often can only be detected with the help of functional MRI.

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