

80. CLINICAL APPLICATIONS OF MRI 3.0 T TRACTOGRAPHY IN THE SPINAL CORD INJURY**Gavriliuc Olga**

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Introduction: Spinal cord lesions are often devastating. Clinical syndrome caused by a spinal injury includes paralysis of the limbs and trunk, with sensory disturbance and dysfunction of the gastrointestinal and genitourinary sphincters. Spinal lesions sometimes remain insufficiently visualized by conventional MRI, therefore it is an important region of interest in biomedical research. DTI (Diffusion Tensor Imaging) tractography is a quantitative MRI technique that can visualize the white matter tracts in vivo, so it can be useful in diagnosing spinal cord injury.

Purpose and objectives: To assess the feasibility and clinical value of MRI 3.0 T tractography for evaluating spinal cord injury.

Materials and Methods: Imaging was performed on total of 10 subjects: 7 patients with suspected pathology of the spine (ischemic, tumorous, degenerative) and 3 healthy volunteers. Imaging was performed at 3.0 T MRI (Siemens Skyra) with tractography reconstruction. Regions of interest were defined manually and measured on apparent diffusion coefficient (ADC) and fractional anisotropy (FA) maps.

Results: In one patient with ependymoma tractography showed displacement of the fibers, one patient with traumatic spinal cord–interruption of the fibers, two patients with spinal compression–local fiber tracts were compressed, 3 patients with ischemic lesions–insignificant interruption of fibers. In 3 volunteers the white matter tracts were normal. All patients had decreased FA values and increased ADC values at the affected spinal segments (which suggest fiber damage) and relatively normal FA values and ADC values cranial and caudal of the lesion (which suggest that the lesion is much smaller that showed on the conventional MRI).

**a****b**

a – post traumatic cervical defect seen on T2-weighted image

b – interruption of the fibers seen on tractography

Conclusions: The FA and ADC values offer an objective measure for evaluation of the spinal cord fiber integrity. This method has the potential to demonstrate alterations of white matter tracts, therefore has a great potential with the diagnosis and follow-up of patients with diseases of the spinal cord. The FA and ADC values offer an objective measure for evaluation of the spinal cord fiber integrity.

Keywords: tractography, spinal cord, FA, ADC

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81. WATERSHED ISCHEMIC STROKE – CLINICAL AND IMAGING PECULARITIES**Gudumac Veronica**

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Introduction: Watershed Stroke (WS) is a subtype of ischemic stroke, produced at the borderzones of main brain arteries' vascularisation, and has proved to have specific features.

Purpose and objectives: Specific clinical aspects' analisis of WS as a classic ischemic stroke subtype. Determination of specific imaging pattern in patients with WS. Early neurological