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Diffusion Mr Imaging Findıngs Of Spontaneous Intracerebral Hematoma

Spontan Intraserebral Hematomun Difüzyon MR Görüntüleme Bulguları

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ABSTRACT

Objectives

To analyze the diffusion properties of intracranial hematomas and to understand the contribution of diffusion MR imaging of hematomas on clinical diagnosis in the patients with acute stroke.

Methods

The MR images of 37 patients with primary intracranial hemorrhage were retrospectively reviewed. Variations in T2-weighted echo planar images, DW (diffusion weighted) imaging signal intensity, and apparent diffusion coefficient (ADC) ratios (core of hematoma/contralateral hemisphere) were analysed according to the putative stages of hematoma, as seen on T1- and T2- weighted images.

Results

On both T2-weighted echo planar and DW images, the core of hematoma was hyperintense at the hyperacute (oxyhemoglobin, n=4) and late subacute stages (extracellular methemoglobin, n=11), while being hypointense at the acute (deoxyhemoglobin, n=11) and early subacute stages (intracellular methemoglobin, n=11). There was a positive correlation between signal intensity ratio on T2-weighted echo planar and DW images (r=0,698, r=0,940, $p<0.05$) in acute and early subacute stage. ADC values were decreased in the whole population and it was significantly different in acute and early subacute stage ($p<0.05$).

Conclusions

The core of hematoma is hyperintense on DW images with decreased ADC values at the earliest time, and thus mimic arterial stroke on DW images. ADC values are decreased during hyperacute, acute and subacute stages.

Keywords:*Hematoma, Magnetic Resonance Imaging, Diffusion MRI*