A 24-year-old woman presented with sudden right-sided weakness and aphasia. Brain MRI was performed 5 hours after symptoms onset. On diffusion-weighted imaging (DWI), the lesion showed a marked increase in signal intensity and an approximately 70% mean apparent diffusion coefficient (ADC) decline as compared with the contralateral hemispheric white matter (figure). The patient met diagnostic criteria for multiple sclerosis and other etiologies were excluded.

ADC decline in acute multiple sclerosis lesions, suggesting a diagnosis of ischemic stroke, has been previously reported.1,2 However, the decline in ADC values (22% to 40% decrease) was not as pronounced as our observation. Thus this fourth case of reduced ADC in acute demyelinating lesion indicates that the ADC drop may be important and close to that observed in the core of an acute brain infarction.

REFERENCES

Figure Brain neuroimaging

(A) Diffusion-weighted imaging showing high signal intensity of left centrum semiovale. (B) Fluid-attenuated inversion recovery sequence showing a second smaller high signal intensity in the posterior right centrum semiovale close to parietal cortex. (C) Apparent diffusion coefficient (ADC) mapping showing marked reduced ADC of the left centrum semiovale (19.5 × 10⁻⁶ mm²/s for the region of interest vs 71.8 × 10⁻⁶ mm²/s for apparently normal white matter).
Teaching NeuroImages: Marked reduced apparent diffusion coefficient in acute multiple sclerosis lesion
Neurology 2010;74:e87
DOI 10.1212/WNL.0b013e3181df09f7

This information is current as of May 17, 2010

Updated Information & Services
including high resolution figures, can be found at:
http://n.neurology.org/content/74/20/e87.full

References
This article cites 2 articles, 0 of which you can access for free at:
http://n.neurology.org/content/74/20/e87.full#ref-list-1

Citations
This article has been cited by 1 HighWire-hosted articles:
http://n.neurology.org/content/74/20/e87.full#otherarticles

Subspecialty Collections
This article, along with others on similar topics, appears in the following collection(s):
All Clinical Neurology
http://n.neurology.org/cgi/collection/all_clinical_neurology
MRI
http://n.neurology.org/cgi/collection/mri
Multiple sclerosis
http://n.neurology.org/cgi/collection/multiple_sclerosis

Permissions & Licensing
Information about reproducing this article in parts (figures, tables) or in its entirety can be found online at:
http://www.neurology.org/about/about_the_journal#permissions

Reprints
Information about ordering reprints can be found online:
http://n.neurology.org/subscribers/advertise