

学位論文抄録

Analysis of cerebral artery stenosis in moyamoya disease

(もやもや病における脳血管狭窄の分析)

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Abstract of the Thesis

Background and Purpose: To obtain information on affected vessels in moyamoya disease (MMD) we have analyzed the vascular morphological characteristics of MMD using three-dimensional (3D) constructive interference in steady-state (CISS) magnetic resonance imaging (MRI).

Methods: The population of this 3D-CISS MRI studies consisted of 51 patients with MMD; 16 patients with atherosclerotic middle cerebral artery (MCA) stenosis or occlusion; 42 MRI control patients; and 28 control digital subtraction angiography (DSA) patients. We measured the outer diameters of the terminal portion of the internal carotid artery (ICA), the proximal portion of the MCA (M1 portion). We evaluated the inner diameter as the relative value (%) obtained from magnified DSA images and analyzed these data.

Results: The outer diameters of the ICA and M1 portion were significantly smaller in the MMD group than in the other 2 groups, while the M1 outer diameter of the atherosclerosis group was not significantly different compared to the control (ICA: MMD, 2.61 ± 0.46 mm vs. control, 4.04 ± 0.50 mm and M1: MMD, 1.92 ± 0.43 mm vs. control, 3.34 ± 0.54 mm vs. atherosclerosis, 3.45 ± 0.56 mm). Furthermore, in MMD the outer diameter was unrelated to the progression of luminal stenosis grade estimated by DSA.

Conclusions: This is the first report that the outer diameters of both the ICA and M1 decrease in MMD patients. Our findings suggest that the vascular constrictive changes of the affected arteries are the important phenomenon reflecting MMD pathology.