学 位 論 文 の 要 旨

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主論文の題名

Brain magnetic resonance imaging and cognitive alterations after ablation in patients with atrial fibrillation

主論文の要旨

Catheter ablation is an important non-pharmacological intervention for atrial fibrillation (AF), but its effect on the incidence of asymptomatic cerebral emboli and long-term effects on cognitive function remain unknown. We prospectively enrolled 101 patients who underwent AF ablation. Brain magnetic resonance imaging (MRI) (72 patients) and neuropsychological assessments (66 patients) were performed 1–3 days (baseline) and 6 months after ablation. Immediately after ablation, diffusion-weighted MRI and 3-dimensional double inversion recovery (3D-DIR) detected embolic microinfarctions in 63 patients (87.5%) and 62 patients (86.1%), respectively. After 6 months, DIR lesions disappeared in 41 patients. Microbleeds (MBs) increased by 17%, and 65% of the de novo MBs were exactly at the same location as the microinfarctions. Average Mini-Mental State Examination scores improved from 27.9 ± 2.4 to 28.5 ± 1.7 ($p = 0.037$), and detailed neuropsychological assessment scores showed improvement in memory, constructional, and frontal lobe functions. Ejection fraction, left atrial volume index and brain natriuretic peptide level improved from baseline to 3–6 months after ablation. Despite incidental microemboli, cognitive function was preserved 6 months after ablation.