

Short Neuropathological Report

A case of cerebral infarction with separate episodes of embolism within a 12-year interval, associated to mild Alzheimer-type lesions identified at autopsy

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Abstract

A 73-year-old patient experienced an episode of cerebral infarction of the right middle cerebral artery (MCA) region, followed by a second episode of cerebral infarction of the left posterior cerebral artery (PCA) region at the age of 85. Atrial fibrillation was observed during both episodes and a diagnosis of cardiogenic cerebral embolism was given. An autopsy was performed on the patient's brain one hour and 15 minutes postmortem. Based on the pathological findings, the following questions, which were raised from a clinical perspective, were taken into account. (i) Was the cerebral infarction of this patient due to embolism? (ii) If cerebral embolism was the cause, was it cardiogenic? (iii) Did atherosclerosis cause the occlusion of the right internal carotid artery (ICA)? Did the atheroma of the right ICA produce emboli? (iv) If dementia had been diagnosed clinically on this patient, would it be linked to vascular dementia? (v) Were the cerebrovascular disease (CVD) lesions accompanied by any dementia-inducing neurodegenerative lesions? (vi) Could this patient be diagnosed with vascular dementia, Alzheimer's disease (AD), or mixed dementia? (vii) Was the restraint of the patient over the course of three plus years a possible cause of the AD pathological changes observed in the brain?

Cholesterol emboli induced the infarct lesions. There were originally produced in sites located outside of the brain, probably in the aorta and its branches. The patient was diagnosed as having mixed AD (intermediate to high likelihood of AD, based on the National Institute on Aging (NIA)–Reagan Institute (RI) neuropathological criteria for AD) and probable vascular dementia. Furthermore, prolonged restraint of the patient may have contributed to AD pathological changes. Tottori J. Clin. Res. 9(2), 164-175, 2017

Key words: cerebral infarction, cerebral embolism, atherosclerosis, Alzheimer-type histological lesion, restraint stress

Clinical course

A 73-year old patient had an episode of cerebral infarction of the right MCA region, followed by a second episode of cerebral infarction of the left PCA region at the age of 85 (Fig. 1). Atrial fibrillation was observed during both episodes and a diagnosis of cardiogenic cerebral embolism was performed. However, mural thrombi were not identified following an echocardiography. At the age of 75, the patient

underwent a magnetic resonance angiography (MRA) and carotid ultrasonography, which fortuitously revealed occlusion of the right ICA (Fig. 2). Following a cerebral infarction at the age of 73, the patient experienced no sequela. However, around the age of 83, the patient started experiencing, among others, clinical symptoms such as irritability, dysgraphia, disheveled clothes, buying the same items repeatedly, depressive episodes and low medicat-