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CASE REPORT

Cerebral infarction due to anterior choroidal artery occlusion caused by posterior communicating artery aneurysm compression

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KEYWORDS
anterior choroidal artery;
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subarachnoid hemorrhage

Summary Cerebral infarction may be associated with underlying aneurysms. Such episodes of ischemia may be caused by thromboembolism, emboli originating from a thrombosed aneurysm, or may be secondary to an occlusion of the parent vessel with a thrombus.[1,2] Mechanical obstruction of the cerebral artery by a neighbored lesion might be one possible cause of cerebral infarction. This should be considered if the symptoms and signs of cerebral infarction follow such a disorder as subarachnoid hemorrhage or mass are shown by a positive imaging study. Here we report a case of cerebral infarction due to anterior choroidal artery occlusion caused by posterior communicating artery aneurysm.

1. Introduction

Mechanism of cerebral embolic stroke from intracranial aneurysm has been reported in several studies. Artery occlusion by compression of neighborhood aneurysm might be another possible mechanism of cerebral infarction.

2. Case report

A man 68 years of age was admitted to our hospital on April 3, 2006, because of progressive weakness on the right side and dysarthria. On March 30, 2006, the patient had begun to feel weakness of the right upper and lower limbs. Neurologic examination revealed a right central-type facial palsy, right upper limb weakness (Grade 1), and right lower limb weakness (Grade 3). His past history showed vascular risk factors such as hypertension, hyperlipidemia, smoking, and diabetes. The results of laboratory studies were normal. Electrocardiography showed sinus tachycardia.

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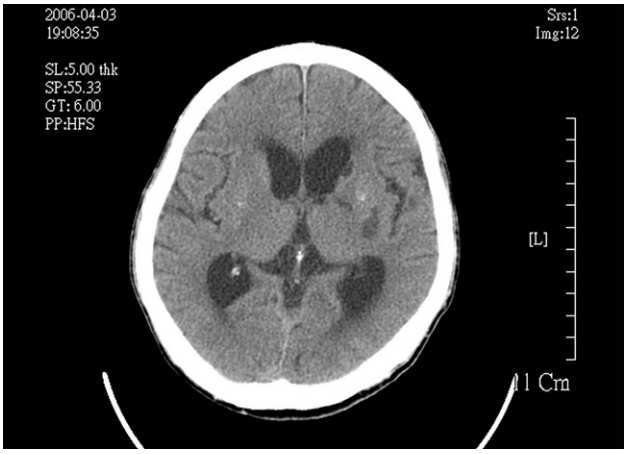

Figure 1 Computed tomography of the brain showed a hypodense area in the border zone of the left internal capsule region; infarction was suspected.

Carotid ultrasonography showed mild atherosclerotic changes common carotid arteries, carotid bifurcations, and internal carotid arteries on both sides. Brain computed tomography (CT) showed presence of infarction involving the left internal capsule region (Fig. 1). Thus an impression of left cerebral infarction was made. Brain magnetic resonance imaging (MRI) performed on April 4, 2006, confirmed the diagnosis of acute infarction involving the left internal capsule region, mainly in the anterior choroidal artery (AChA) territory (Fig. 2). Sudden loss of consciousness was noted on April 5, 2006. The Glasgow Coma Scale (GCS) dropped to E1V1M4, and an emergent brain CT revealed subarachnoid hemorrhage (SAH) with intraventricular hemorrhage and acute hydrocephalus (Fig. 3). A neurosurgeon was called in for emergency consultation. The patient then underwent emergent external ventricular drainage. The clinical condition improved after surgery and the GCS became E3VeM5 on April 10, 2006. Carotid angiography was performed on April 10, 2006, and it revealed a saccular-type aneurysm with pseudoaneurysm

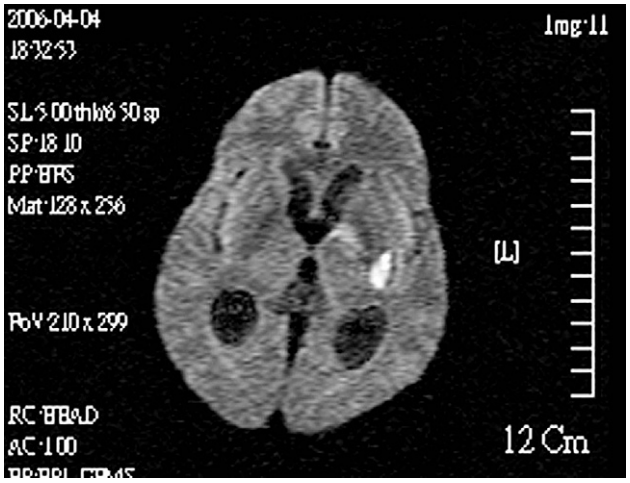

Figure 2 Diffusion-weighted image of the brain showed an increased signal area involving the left internal capsule region, mainly in the anterior choroidal artery territory; acute infarction was suspected.

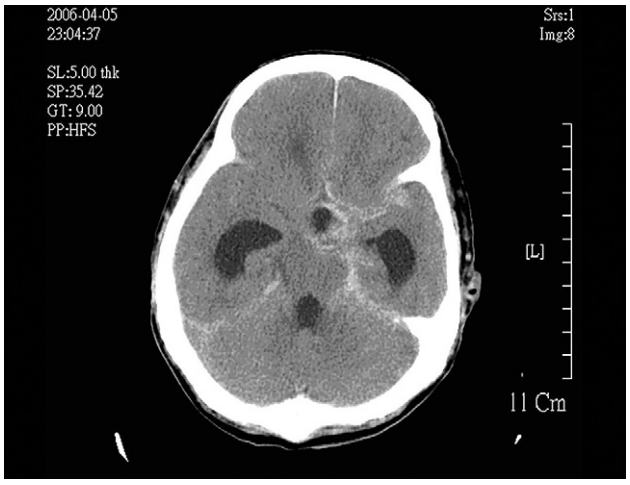

Figure 3 Computed tomography of the brain showed subarachnoid hemorrhage in the suprasellar cistern, quadrigeminal cistern, prepontine cistern, both cerebellopontine angle cisterns, and left sylvian fissure. Supratentorial hydrocephalus was also noted.

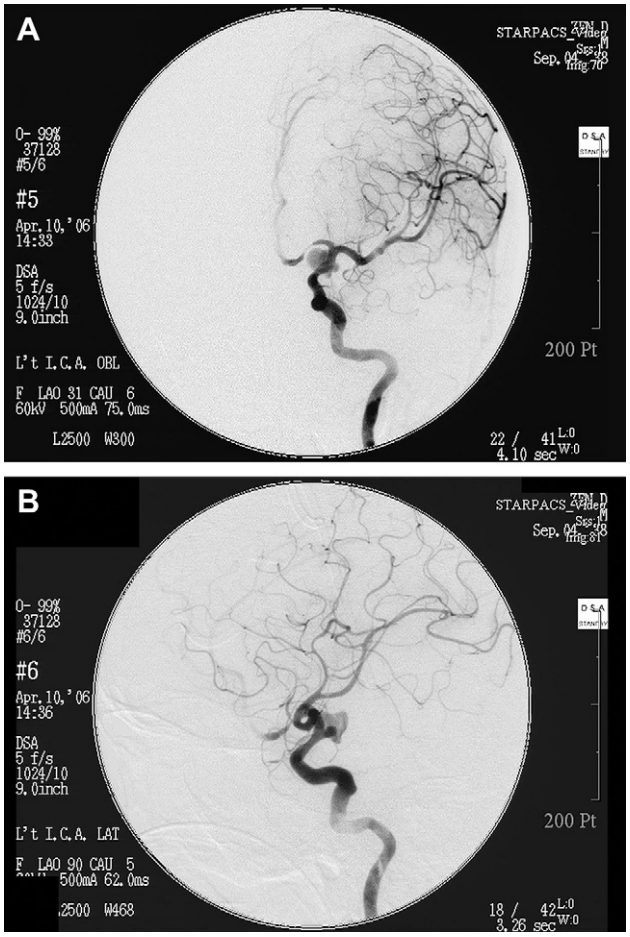

Figure 4 Left-carotid angiogram showed a saccular-type aneurysm with pseudoaneurysm in the left internal carotid artery-posterior communicating artery region; (A) facing left; (B) facing posterolaterally.