Pseudo-aneurysm Associated with Endovascular Re-canalization for Internal Carotid Artery Occlusion

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Internal carotid artery occlusion (ICAO) is a relative uncommon but important cause of transient ischemic attack (TIA) and cerebral infarction. The feasibility of endovascular re-canalization has been reported in a recent article. In the present report, we describe a 77-year-old man who received endovascular re-canalization of right ICAO. His clinical symptoms recurred 4 months after the procedure, and follow-up perfusion computed tomography (CT) revealed right hemisphere ischemia. Repeat carotid angiogram showed a large pseudo-aneurysm with narrowed true lumen in the distal cervical carotid artery, most likely resulted from previous re-canalization procedure. A coronary stent was deployed to re-establish patency of the vessel, covering and jailing the orifice of the pseudo-aneurysm. Late pseudo-aneurysm formation should be considered as a potential complication after endovascular re-canalization of ICAO.

Key Words: Internal carotid artery occlusion • Re-canalization • Pseudoaneurysm

INTRODUCTION

Cervical internal carotid artery occlusion (ICAO) is associated with impaired cerebral perfusion, which may lead to ischemic cerebral symptoms and hemodynamic infarcts. Actually, cervical ICAO was associated with an annual risk of 6% to 20% of ipsilateral recurrent stroke despite intensive medical management. Compromised cerebral blood flow plays an important role in causing ipsilateral ischemic events in patients with ICAO. It is documented that endovascular re-canalization for cervical ICAO is feasible, with acceptable clinical results. We report herein a case of carotid pseudo-anerysm developed after successful re-canalization for cervical ICAO.

CASE REPORT

A 77-year-old man suffered from syncope attack 6 months prior to admission, with dizziness for 1 year. Carotid duplex revealed critical narrowing of the right ICA with reversed ophthalmic artery (OA) flow direction, suggestive of occlusion. The left ICA was also narrowed, with > 50% diameter stenosis. Selective cerebral angiography documented right ICAO (Figures 1a and 1b) and left ICA 50-60% stenosis. Distal intracranial right ICA received collaterals from the right external carotid artery, via the ophthalmic artery. Re-canalization of the right ICAO was attempted, using an 8 Fr JR4 guiding catheter positioned in the right common carotid artery (CCA). The occlusion was crossed with a guide wire designed for coronary angioplasty of total occlusion (Conquest, Asahi Intecc, Aichi, Japan), through a micro-catheter (Excelsior, Boston Scientific, Galway, Ireland). The occluded segment was first dilated with a...