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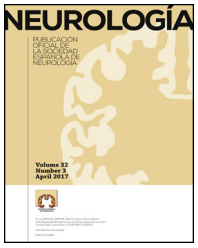

LETTER TO THE EDITOR

Acute occlusion of a giant aneurysm of the internal carotid artery: Recanalisation of the middle cerebral artery through the contralateral carotid artery☆

Oclusión aguda de aneurisma gigante de arteria carótida interna: Recanalización de la arteria cerebral media a través de la arteria carótida contralateral

Dear Editor,

Early recanalisation of an occluded vessel is essential for good outcomes in patients with acute stroke.[1] When access to the occlusion is impossible, the contralateral carotid artery may be approached via the anterior communicating artery (ACoA). We present the case of a patient with an occlusion in the distal segment of the internal carotid artery (ICA) (carotid-T occlusion) caused by an embolus in a giant aneurysm in the cavernous segment of the ICA which migrated cranially. Intracranial stenting was performed through the contralateral ICA and the ACoA.

Introduction

Occlusion of the cervical ICA resulting from thrombosis of a giant aneurysm in the cavernous segment of the ICA limits the viability of endovascular treatment. Several authors have used microcatheters to reach the emboli through ipsilateral vessels and administer intra-arterial fibrinolytic therapy.[2] The literature also reports some cases of anterior-to-posterior circulation approach[3] through the contralateral ICA[4] using Penumbra devices.

We present the first case of stent placement through the ACoA in a patient with acute stroke due to carotid-T occlusion caused by an embolus from a giant aneurysm in the cavernous segment of the ICA.

Clinical case

Our patient was a 53-year-old left-handed man with no relevant history who visited our hospital due to sudden loss of consciousness. After the patient recovered consciousness, he displayed severe left-sided hemiplegia, left facial palsy, and dysarthria (NIHSS score of 14). Code stroke was activated upon arrival at the emergency department; time from symptom onset to arrival at the emergency department was 90 minutes. A brain CT scan detected an expansive process in the temporal region involving the ICA and early signs of infarction in the territory of the right middle cerebral artery (MCA) (ASPECTS score of 6). CT angiography revealed complete occlusion of the origin of the ICA resulting from thrombosis of a giant aneurysm in the ICA; occlusion extended towards segments A1 and M1 of the anterior cerebral artery (ACA) and MCA, respectively (carotid-T occlusion) (Fig. 1A and B).

Angiography was performed with the Seldinger technique; we studied right intracranial circulation through the left ICA. Contrast injected into the left carotid artery was observed to flow into the ACoA towards the right A2 segment (Fig. 1C and D); we therefore decided to use a microcatheter to navigate through the ACoA in order to place a stent between right A1 and M1 to open the right distal ICA occlusion. To this end, we placed a 7F sheath introducer measuring 80 cm (Super Arrow-Flex®) in the left common carotid artery (CCA); the left cervical ICA was catheterised using a Navien microcatheter of 0.072″ inner diameter (Covidien®). After administering 10 mg abciximab intravenously, we placed 2 stents (Codman® Enterprise vascular reconstruction device) using a PROWLER SELECT Plus microcatheter (Codman®) and a Synchro-14 guidewire (Stryker®). An angiography (parenchymal phase) performed at the end of the procedure showed contrast passing through the branches of the right MCA (Fig. 1E-G). Recanalisation was achieved at 420 minutes after symptom onset. Following our hospital's protocol, our patient began dual antiplatelet therapy (clopidogrel 75 mg plus acetylsalicylic acid 100 mg orally every 24 hours).

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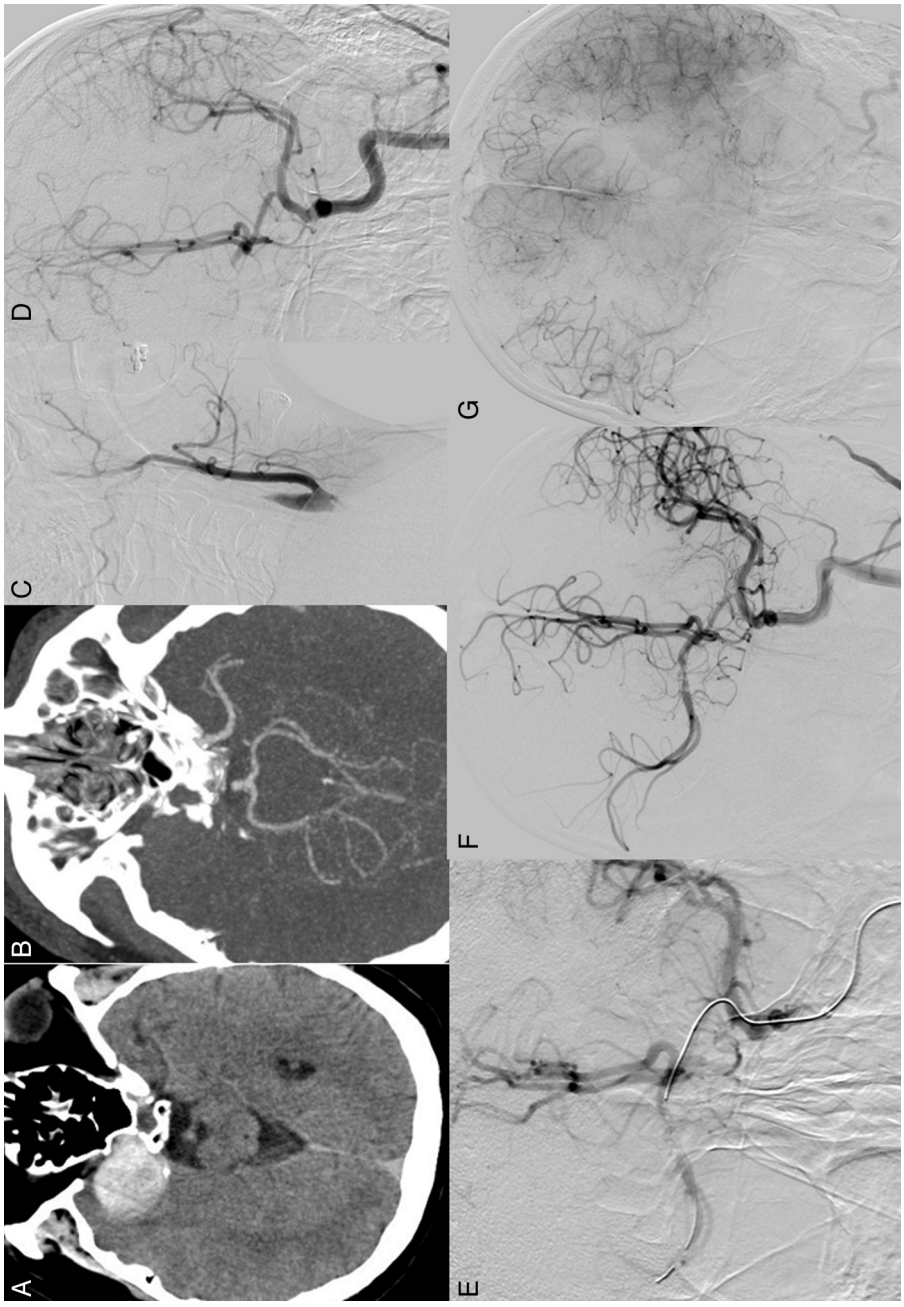

Figure 1 (A) Hyperdense lesion in the region of the cavernous segment of the right ICA corresponding to a thrombosed giant aneurysm. (B) CT-angiography of the circle of Willis revealing no blood flow in the right MCA territory. (C) Digital subtraction angiography with contrast injection into the right CCA revealed no blood flow in the right ICA. (D) Angiography of the left CCA (intracranial projection) showing no abnormalities in the ACoA, adequate filling of the distal portion of right A1, right ACA elevation, and T occlusion in the terminal segment of the right ICA. (E) Selective catheterisation of the right ACA and MCA via the ACoA. (F) Use of Enterprise® stents between the right MCA and the right carotid artery. (G) Angiography (parenchymal phase) showing recanalisation type 2b according to the mTICI scale, associated with delayed venous drainage compared to the left hemisphere.