

Stroke chamaleon (cortical hand syndrome) in a patient with moderate carotid stenosis: a multidisciplinary ticket to ride

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Introduction: “Stroke chamaleons” are atypical presentations of ischemic stroke, whose misdiagnosis may prevent proper acute management. Among those, “cortical hand syndrome” (CHS) resembles peripheral radial paralysis, yet it is due to cortical infarction; it has been reported to be less than 1% of all ischemic strokes, and caused by infarcts involving the motor hand cortex. We present a case with CHS due to moderate carotid stenosis with “instable plaque”, deserving early endarterectomy.

Case report: A right-handed, 74 year-old-man presented with acute right hand weakness, without proximal impairment. Neurological examination confirmed isolated hand weakness and showed reflex asymmetry with right prevalence. ECG and routine blood tests were unremarkable; cranial CT scan didn’t show acute abnormalities. Past medical history included hypertension, diabetes mellitus and a previous left fronto-insular ischemic stroke, treated with aspirin 100 mg/die; moreover, a “non significant” left carotid stenosis had been reported; a pacemaker had been implanted five years ago because of third-grade atrioventricular block. Sovraortic and intracranial vessels examination (Duplex ultrasound, transcranial color-coded Doppler and angio-CT) showed moderate stenosis of proximal left carotid artery (about 50%); plaque echogenicity/densitometry showed a dishomogeneous and irregular-surfaced plaque (Fig.1). Carotid 18-FDG PET showed marked plaque inflammation (Fig. 2), while one hour transcranial Doppler monitoring on left middle cerebral artery didn’t reveal any microembolic signals (MES) (Fig.3). Double antiplatelet therapy (aspirin 100 mg/die plus clopidogrel 75 mg/die) and atorvastatin (80 mg/die) were administered; clinical deficit greatly improved within two days and a control contrast-enhanced cranial CT scan done after 48 hours did not show any ischemic lesion or blood-brain barrier damage. After discussing risks/benefits balance, he underwent carotid endarterectomy on day five. Histopathology confirmed the high presence of inflammatory cells (Fig. 4).

Discussion and Conclusion: Our case highlights the importance of considering CHS as a potential cause of acute hand weakness, since it may be associated to high risk carotid plaque (as defined by multimodal vascular imaging), whose early surgical treatment might prevent more dangerous strokes.

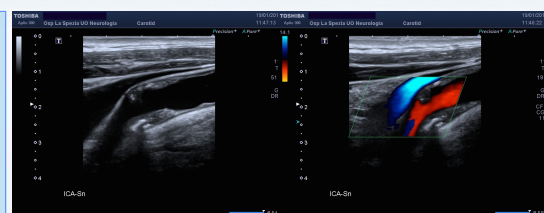


Fig. 1: Duplex ultrasound showed moderate stenosis of proximal left carotid artery (about 50%) with dishomogeneous and irregular-surfaced plaque

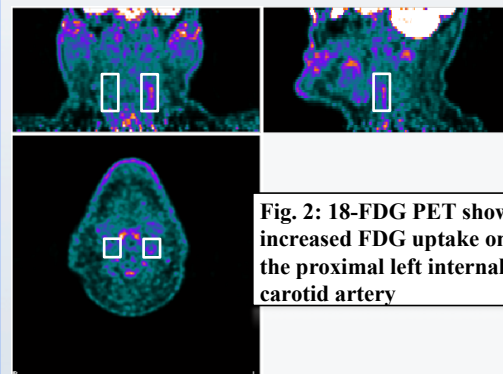


Fig. 2: 18-FDG PET showed increased FDG uptake on the proximal left internal carotid artery

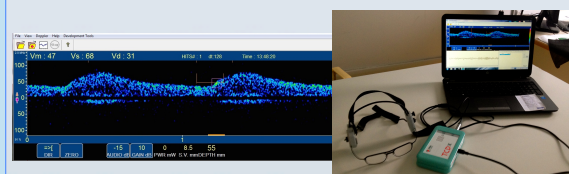


Fig. 3: One hour transcranial Doppler monitoring on left middle cerebral artery didn’t reveal any MES.

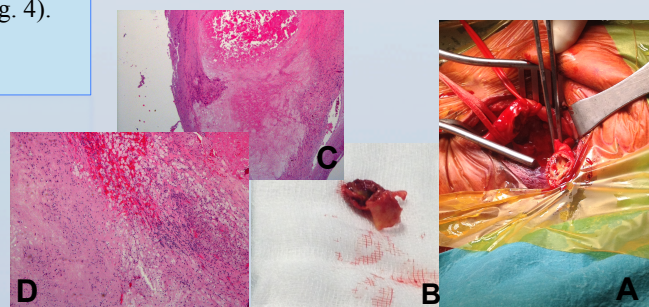


Fig.4: Carotid endarterectomy (A). Plaque (B), Section of plaque (HE) that shows the bleeding intraplaque and rupture (C), a thinner section shows a high concentration of macrophages and a high density of microvessels (D).