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Regression of Moyamoya Vasculopathy After Cerebral Revascularization Surgery: Natural History, Clot Breakdown, or Flow Dynamics?

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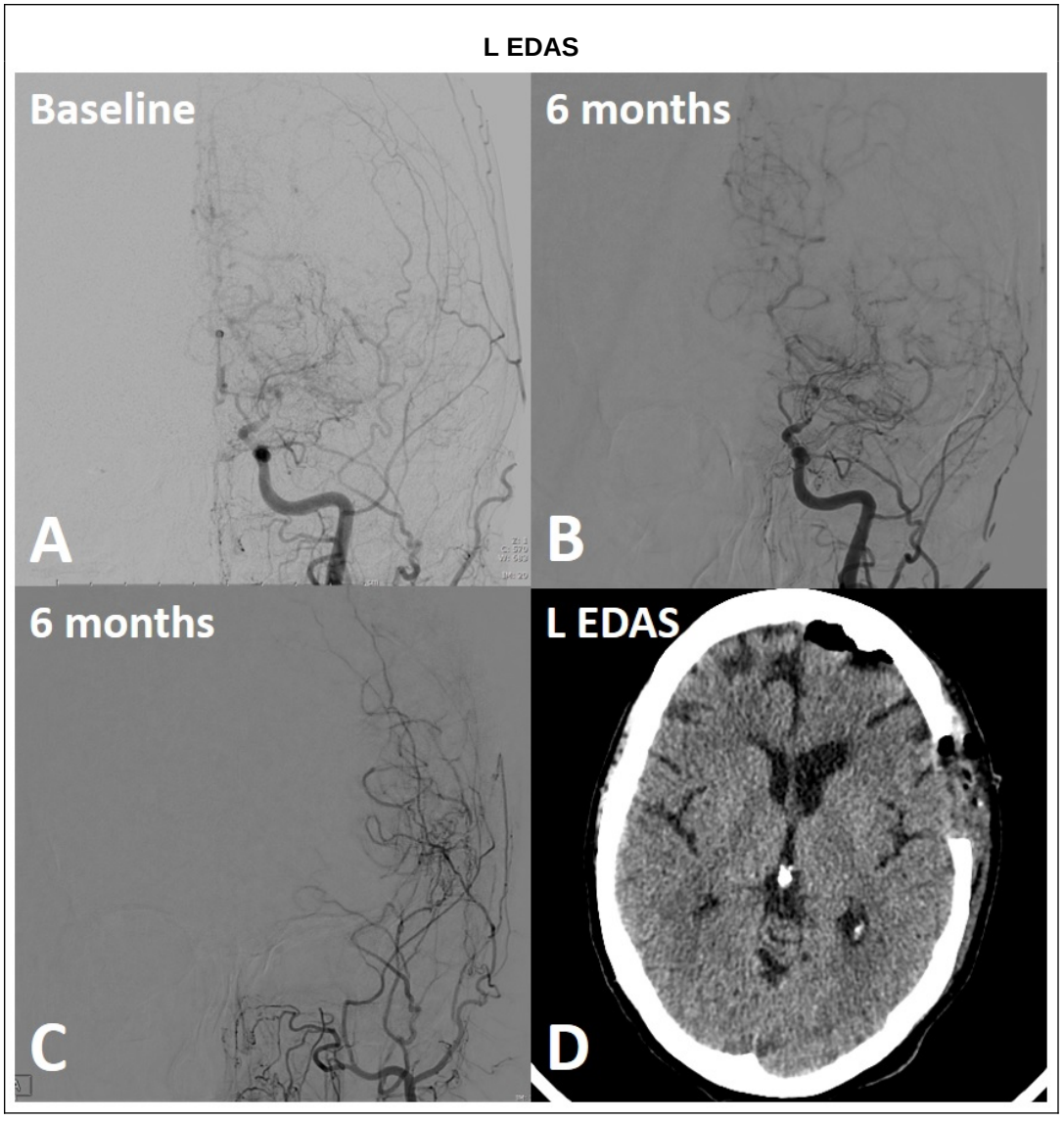
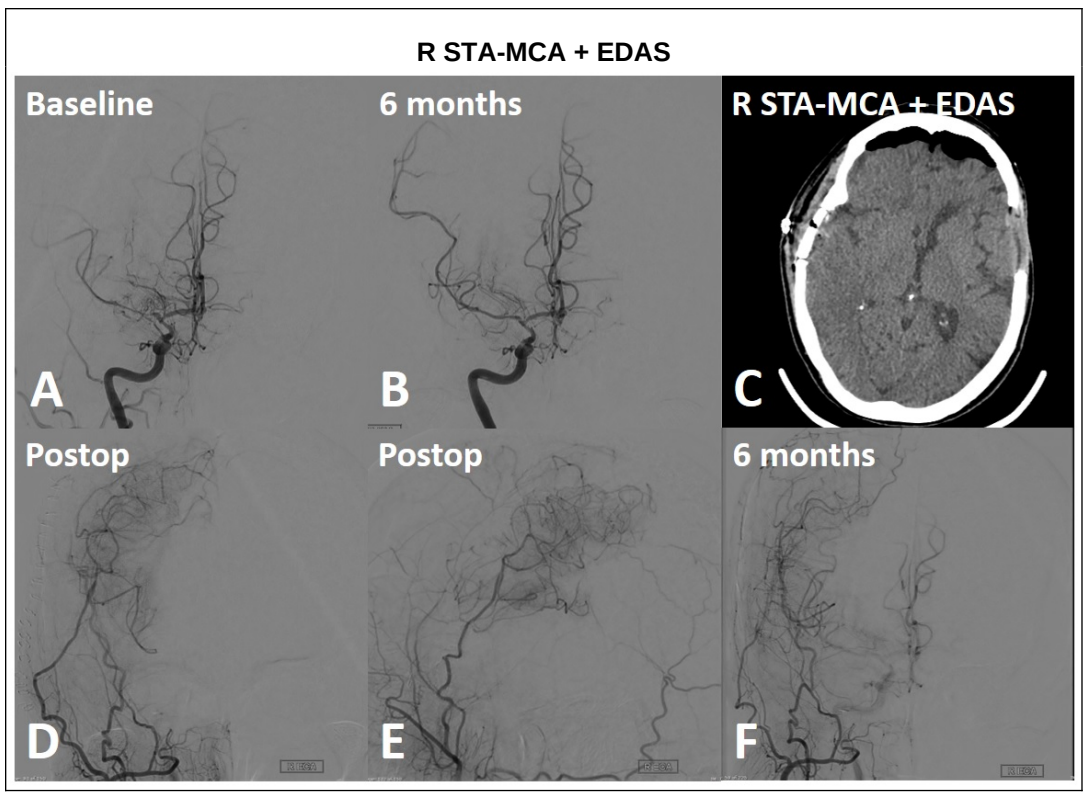
Introduction

Moyamoya is usually a progressive disorder, characterized by gradual stenosis of the bilateral supraclinoid internal carotid arteries (ICAs) and proximal middle and anterior cerebral arteries (MCAs, ACAs). Surgical revascularization improves hemispheric blood flow, thus leading to effective secondary stroke prevention in symptomatic patients. However, cerebral revascularization has not been shown to impact the progression of steno-occlusive changes in moyamoya.





Case Report

A 70-year old woman with bilateral symptomatic moyamoya underwent indirect revascularization (EDAS) on the left side followed by combined direct-indirect revascularization (STA-MCA bypass and EDAS) on the right side. Following uneventful and technically successful procedures, she experienced significant clinical improvement and resolution of her transient ischemic attacks. Suprisingly, on her 6-month follow-up angiogram after the second procedure, significant improvement of the caliber of the M1 segment of the right MCA and regression of moyamoya collaterals was observed.

Conclusions

Regression of steno-occlusive changes in moyamoya following revascularization surgery has not been previously reported. Whether the observed phenomenon represents a self-remitting disease manifesting as moyamoya syndrome, a spontaneously recanalized intraluminal thrombus, or a direct hemodynamic effect of cerebral revascularization, remains to be seen.