Bilateral carotid occlusive disease with inefficient collateral circulation—what now?

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Abstract

Background: Atherosclerotic bilateral carotid occlusive disease is an uncommon but potentially devastating condition, with increased risk of stroke and mortality.

Objective: To discuss the management of symptomatic bilateral carotid occlusion.

Case report: A 69-year-old male, with vascular risk factors, presented with a two-week-history of generalized muscle weakness resulting in gait loss and several syncope. On examination, there was evidence of left homonymous hemianopia, left upper neuron facial palsy and tetraparesis with left-sided predominant weakness. Urgent CT scan, CT angiography and cervical duplex ultrasound were performed. No acute ischemic lesions were identified, but the following was found: bilateral atherosclerotic occlusion of the right common carotid artery (CCA) and proximal left internal carotid artery (ICA); left vertebral artery hypoplasia, ending at the posterior inferior cerebellar artery; fetal pattern of the right posterior cerebral artery (PCA).

The patient was hospitalized for further investigation. Transcranial Doppler showed reduced flow velocities in all vessels except in the left PCA. Bilateral hemispheric acute ischemic lesions on junctional vascular territories were found on MRI and SPECT demonstrated hypoperfusion of the right cerebral hemisphere. Cerebral angiography confirmed the previous findings, identifying anastomotic circulation, but not a good donor vessel for bypass surgery.

After multidisciplinary discussion, an optimized medical management was decided.

Conclusion: We present a case of symptomatic atherosclerotic bilateral carotid occlusion with ineffective collateral circulation. The best therapeutic approach to this condition remains unclear, and an individualized decision by a multidisciplinary team should be considered.