Congenital Subclavian Steal Associated with Atresia of a Left Innominate Artery

A 22-year-old woman presented with a history of multiple spells of dizziness, difficulty speaking and occasional loss of consciousness lasting for up to one hour. The patient had been initially diagnosed with epilepsy and treated with Levatiracetam without success. The physical finding of decreased left carotid and radial pulses raised suspicion for Takayasu arteritis and the patient was referred to our center for further evaluation including cerebral angiography. Angiography was performed via two 5-French sheaths placed in the right femoral and left radial arteries. The patient was found to have only two great vessels originating from the aortic arch, while the left carotid and subclavian arteries shared a common origin and did not communicate with the arch. There was prominent subclavian steal through the vertebrobasilar junction and through hypertrophied spinal arteries. The right internal carotid artery supplied the left hemisphere through the anterior communicating artery and also provided flow to the posterior cerebral arteries. No vascular lesions were identified to support the diagnosis of vasculitis. Atresia of a left innominate artery is an extremely rare aortic arch variant which, as in this case can lead to symptomatic subclavian steal. Surgical options are being discussed with the patient.

Keywords: Subclavian steal, innominate artery, subclavian artery, atresia

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Figure 4, A and B. Right internal carotid artery injections, antero-posterior (A) and lateral (B) projections. The right internal carotid artery fills the posterior cerebral arteries via the posterior communicating artery (4A, 1). The left middle cerebral artery fills via the retrograde left anterior communicating artery (4B, 1).

References