

Retrograde Angioplasty and Stenting of Brachiocephalic and Common Carotid Artery Stenosis with Carotid Endarterectomy

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Purpose: To demonstrate the technique of carotid endarterectomy (CEA) combined with retrograde angioplasty and stenting of proximal innominate and intrathoracic common carotid artery (CCA) stenosis.

Methods: From 2003-2004, 13 patients presented with high grade (>75% by arteriography) symptomatic innominate (9, 70%) or left CCA (5, 40%) stenosis. Five (40%) of these patients also had concomitant high grade ipsilateral internal carotid artery (ICA) stenosis and one patient had an associated subclavian occlusion. Following heparinization, the distal CCA was clamped to prevent embolization of atherosclerotic debris prior to cannulation. All patients with concomitant lesions underwent retrograde innominate or left CCA angioplasty and stenting through a 7 French sheath in a distal common carotid artery free of disease. Subsequently, when a CEA was performed, the distal ICA, external carotid artery and the CCA were clamped. Embolic debris generated from the angioplasty/ stenting of the proximal lesion was removed. In patients with mild ICA stenosis (<50%), the mid-CCA was isolated via a cut down at the base of the neck. Innominate or left CCA angioplasty/ stenting were done with distal CCA occlusion to prevent cerebral embolization.

Results: All patients underwent successful CEA as well as angioplasty and stenting of the proximal tandem lesions, and were discharged home on postoperative day 1. At a mean follow-up of 12 months (range 3-24 months) none of the patients had nerve injury, stroke, or death. One patient with documented hypercoagulability required repeat angioplasty at 15 months and ultimately went on to surgical revascularization.

Conclusion: Retrograde intraoperative angioplasty and stenting of high-grade proximal innominate and CCA stenosis with and without concomitant CEA is safe and effective in short term follow-up.