We present a case of tandem stenosis of the great vessels (cervical internal carotid artery [ICA] and brachiocephalic trunk ostium [BTO]) treated with stenting and balloon angioplasty of both lesions under flow arrest. A 70-yr-old woman with a history of hypertension, hyperlipidemia, coronary artery disease, and previous strokes presented with recurrent transient ischemic attacks of the left upper and lower extremities over the last 6 mo. She underwent right cervical endarterectomy (CEA) 16 yr prior. Neurological examination was unremarkable. Carotid Doppler ultrasonography revealed severely increased velocities of the right ICA. Cervical magnetic resonance angiography demonstrated 80% right ICA stenosis and 50% BTO stenosis. Digital subtraction cerebral angiography showed 80% right ICA stenosis and 70% BTO stenosis. The patient was not a candidate for standard carotid artery stenting because the BTO precluded endovascular access or for CEA because of the previous CEA; therefore, direct carotid access and flow reversal was an alternative. Under general anesthesia and systemic heparinization, the patient underwent right carotid artery surgical exposure. Under flow reversal using the Enroute System (Silk Road Medical, Sunnyvale, California), antegrade right ICA stenting angioplasty and retrograde BTO stenting and angioplasty were performed. Successful revascularization of the right ICA and BTO was obtained. No procedure-related complications occurred. The patient was discharged home 2 d postprocedure, neurologically intact. Direct carotid access with flow reversal is a safe and effective therapeutic alternative for patients with ICA (or common carotid artery) stenosis who cannot undergo CEA or when endovascular access from the aortic arch is not possible.

Patient consent was obtained prior to performing the procedure. Institutional board approval is not required for the report of a single case.

**KEY WORDS:** Carotid artery stenosis, Brachiocephalic trunk, Carotid endarterectomy, Carotid artery stenting, Direct carotid access, Flow reversal
Disclosures

Dr Siddiqui has financial interests in Apama Medical, Buffalo Technology Partners Inc, Cardinal Health, Endostream Medical Ltd, International Medical Distribution Partners, Medina Medical Systems, Neuro Technology Investors, StimMed, Valor Medical; is a consultant for Amnis Therapeutics Ltd, Cerebrotech Medical Systems Inc, Cerenovus (formerly Codman Neurovascular, Neuravi, and Pulsar Vascular), CereVasc LLC, Clarot Medical Inc, Cortindus Inc, GuidePoint Global Consulting, Integra (formerly Codman Neurosurgery), Medtronic (formerly Covidien), MicroVention, Penumbra, Rapid Medical, Rebound Therapeutics Corporation, Silk Road Medical, Stryker, The Stroke Project Inc, Three Rivers Medical Inc, Toshiba America Medical Systems Inc, W.L. Gore & Associates; is the Principal Investigator/on the National Steering Committees for Codman & Shurtleff LARGE Aneurysm Randomized Trial, Covidien (now Medtronic) SWIFT PRIME, and Solitaire With the Intention For Thrombectomy Plus Intravenous t-PA Versus DIRECT Solitaire Stent-retriever Thrombectomy in Acute Anterior Circulation Stroke (SWIFT DIRECT) trials, MicroVention CONFIDENCE Study and FRED Trial: Flow Diversion Versus Traditional Endovascular Coiling Therapy, Penumbra 3D Separator Trial, Penumbra COMPASS, and INVEST trials, MUSC POSITIVE trial, Neuravi ARISE II Trial Steering Committee; and is a Board Member for the Intersocietal Accreditation Committee. The other authors have no personal, financial, or institutional interests in any of the drugs, materials, or devices described in this article. Dr Levy is a shareholder/has ownership interests in Intratech Medical Ltd, Blockade Medical LLC, NeXtGen Biologics; is Principal investigator for Covidien US SWIFT PRIME Trials; receives honoraria from Covidien; is a consultant for Pulsar, Blockade Medical; is on the Advisory Board for Stryker, NeXtGen Biologics, MEDX; and receives other financial support from Abbott for carotid training sessions.

COMMENT

In this video, the authors illustrate treatment of a challenging combination: symptomatic carotid artery stenosis and brachiocephalic stenosis. This case demonstrates how, with the various tools and techniques available to treat a given condition, planning and strategy have become as important as the actual execution of the procedure. After angioplasty and stenting of the carotid stenosis the authors proceeded with “post-dilatation” because of “residual stenosis” even though the stent appeared to be adequately opened. We and others1 have moved away from routine post-dilatation in order to minimize manipulation of the plaque. We perform post-dilatation only when strictly necessary.

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