Flow diversion device for the management of an extracranial internal carotid artery aneurysm

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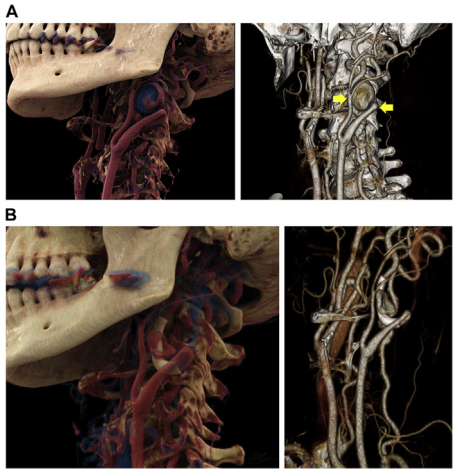

Our patient is a 60-year-old woman with a history of hypertension, hypothyroidism, and glossal hemangioma. She works as a standardized patient actor in our simulation center. A neck ultrasound scan performed during one of the simulation sessions demonstrated a left internal carotid artery aneurysm, which prompted a consultation with Vascular Surgery. She denied any symptoms associated with this aneurysm. On physical examination, there was a palpable pulsatile mass below the left mandibular angle. On computed tomography angiography, a 2.3 × 1.9 2.2 cm saccular aneurysm of the extracranial left internal carotid artery was noted (*A*). After multidisciplinary discussion, the decision was made to proceed with endovascular treatment using flow diversion due to the patient's desire of avoiding a scar in the neck, aneurysm size, and risk for thrombus formation and embolization. A 5.0 × 25 mm Pipeline flow-diversion device (PED; Medtronic) was deployed across the lesion with no event. The patient was observed overnight and discharged the following day with a normal neurological examination and on aspirin 81 mg and clopidogrel 75 mg daily as an antiplatelet regimen. On 1-month follow-up computed tomography angiography, the stent demonstrated excellent apposition to the wall of the artery and excellent flow through this vessel (*B*).

Extracranial carotid artery aneurysm has a prevalence of 0.4%-1% among all peripheral artery aneurysms.[1] The neurologic symptoms experienced by patients include transient ischemic attacks and ischemic strokes.[2] The first successful treatment for an aneurysm in this location was performed by Sir Astley Cooper in 1808 through ligation of the proximal carotid artery.[3] Then, in 1952, Dimtza[4] reported the first successful resection with end-to-end anastomosis. In the past 10 years, with the development of endovascular techniques, the treatment options of carotid artery aneurysms have included open surgery, endovascular procedures, and hybrid techniques.[1] A review published by Qiu et al[1] reports that the optimal management option for the treatment of carotid artery aneurysms is dependent on the morphology of the artery and the properties of the aneurysm. Recent advances in endovascular treatment allow for the utilization of flow diversion outside the skull, and treatment of extracranial internal carotid artery pseudoaneurysms with flow diversion has been shown to be safe and effective in selected patients.[5]

Informed consent was obtained from this patient for this publication.

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