

Endovascular Salvage of a Displaced Carotid Filter

A patient with multiple comorbidities undergoes successful carotid artery stenting.

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A 75-year-old man with a history of atrial fibrillation, hypertension, diabetes mellitus, coronary artery disease, and congestive heart failure was found to have a left carotid bruit. Duplex sonography revealed an 80% to 99% stenosis of the left internal carotid artery (ICA). This finding was confirmed on carotid arteriography, which revealed a high-grade stenosis of the left ICA with dystrophic calcification and shallow ulceration (Figure 1). Given these findings and the patient's multiple comorbidities, the patient was selected to undergo carotid artery stenting.

Arterial access was obtained via the right common femoral artery, and an 8-F sheath was subsequently inserted. The left common carotid artery was then selectively catheterized with a 5-F diagnostic HN1 catheter (Cook Medical, Bloomington, IN). This was followed by passage of a Wholey wire (Covidien, Mansfield, MA) to the external carotid artery followed by passage of the diagnostic catheter. The Wholey wire was then removed and replaced with a tapered Amplatz wire (Cook Medical). The diagnostic catheter was removed and replaced by the 8-F multipurpose guide catheter. After positioning of the guide just proximal to the bifurcation, the Accunet filter was then passed



Figure 1. Arteriogram obtained before stenting, demonstrating the high-grade stenosis of the left ICA with adjacent calcification.



Figure 2. Completion arteriogram with Acculink stent (Abbott Vascular, Santa Clara, CA) in satisfactory position with resolution of the high-grade stenosis.

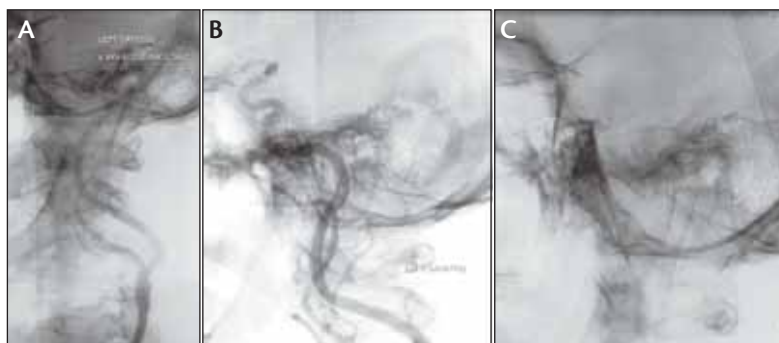


Figure 3. Accunet filter (Abbott Vascular) initially being removed (A). Accunet filter basket remaining in place in the distal ICA after removal of the filter wire (B, C).

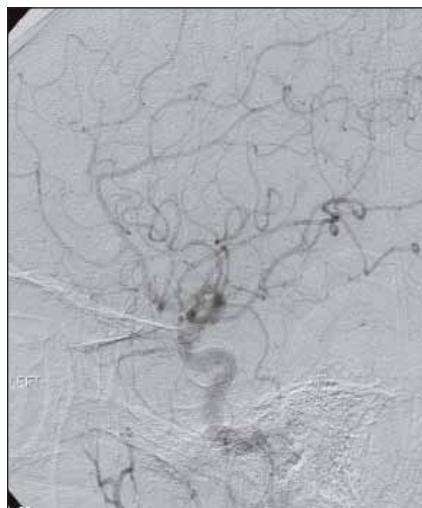


Figure 4. Intracranial arteriogram via the left common carotid artery with the displaced filter intact.



Figure 5. A PT2 steerable .014-inch wire positioned at the level of the cavernous sinus segment beyond the displaced filter. Note the detached basket (arrow)



Figure 6. Taxus stent deployment collapsing the displaced filter (A). Completion arteriogram demonstrating a patent ICA without any intracranial filling defects (B).

across the tight stenotic target lesion, and the filter was deployed in the high cervical segment of the ICA.

The lesion was then predilated with a 4-mm X 2-cm Maverick (Boston Scientific Corporation, Natick, MA) coronary balloon. A tapered 6-mm X 8-mm X 3-cm Acculink endovascular stent (Abbott Vascular) was then deployed, which was followed by postdilatation with a 5-mm, low-profile Maverick coronary balloon. At completion arteriography, there were satisfactory dimensions through the target lesion site with substantial improvement in flow (Figure 2).

The Accunet filter was in the process of being removed when detachment occurred, and the filter was displaced distally in the ICA (Figure 3). The filter wire was removed, and the patient was maintained on bivalirudin. The filter remained patent, and normal intracranial circulation was

noted on arteriography (Figure 4). Vascular surgical and neurosurgical consults were then obtained regarding potential removal of the filter; it was determined that the filter was in too distal a segment of the ICA for safe surgical removal. Snaring was not an option considering that the distal portions of the tines were not radiographically visible. The detached basket was at the base of the skull at the petrosal segment of the ICA.

The decision was made to proceed with endovascular treatment to compress and secure the filter. A PT2 steerable .014-inch wire (Boston Scientific Corporation) was subsequently passed outside of the basket around the lesion and positioned at the level of the cavernous sinus segment (Figure 5). A 32-mm X 3.5-mm Taxus stent (Boston Scientific Corporation) was then expanded to 18 atm at the filter site, with resultant collapse of the filter (Figure 6). There was no evidence of any compromise to the intracranial circulation. The patient tolerated the procedure satisfactorily with no untoward neurologic reactions.

The patient was discharged on hospital day 1 and recovered uneventfully. He remained without any neurologic sequelae at 1-year follow-up. ■

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