

*Peter A. Schneider, MD, Honolulu, HI*

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The essence of vascular surgery is patient selection, intimate knowledge of natural history and treatment options, meticulous technique, clinical management of complex patients, and vigilant longitudinal follow-up. The carotid stent procedure is a natural progression of these skills. This article reviews some of the key technical aspects of successful carotid angioplasty and stenting (CAS).

CAS is a technically sophisticated procedure with a number of potential pitfalls. As CAS is introduced with limited approval, a limited number of cases are being performed, mostly in patients with poor medical conditions. Although it may not be possible to perform a high volume of cases immediately, the learning curve may be traversed by making efforts to learn much from each case.

The following list is meant to stimulate ideas and thoughts on how best to hone in on the techniques of CAS:

1. Tortuosity is not your friend, whether it is in the arch or the carotid artery. Tortuosity does not go away, but may be made worse by passing a sheath or placing a stent. Tortuosity with calcification is worse. Note: When I first started CAS, I thought that the carotid lesion itself would be the major factor limiting stent placement, but tortuosity is more of an obstacle.
2. Be aware of the tension buildup by integrating the information from your fingertips (on the guidewire or catheter) and your eyes watching the fluoroscopic monitor.
3. Good cases to start CAS: Choose cases with a conventional non-angulated arch and ones with straight carotid and early recurrence. Select cases based on favorability of the arch and landing zone for filter and for stent.
4. Case preparation: Select patients with arteriography and do the arteriography ahead of time. This permits the fastest, safest, and smoothest CAS procedure with the least contrast and radiation (MRA is very often not good enough). Measure, select, flush, and prepare inventory ahead of time. A pre-operative head computed tomography is required for those ages > 80 years.
5. Carotid catheterization: Use a complex curve catheter for an arch branch that originates from segment III of the arch (way to the right and inferiorly) and for bovine left common carotid artery.
6. Pharmacologic management: Use atropine before angioplasty for native stenoses. Treat spasm early (with nitroglycerine) and keep moving.
7. Sheath placement: The more tortuous the approach, the more you need a stiff guidewire, a flexible sheath, and a longer length of guidewire past the last turn into the common carotid artery.
8. Don't forget to have the patient help you by taking a deep breath, changing neck position, and coughing. These maneuvers can be helpful with catheter advancement, exchange guidewire passage, sheath placement, and filter retrieval.
9. Do not underestimate the value of clinical experience in getting patients safely through CAS. If you are skilled in the clinical management of carotid occlusive disease, performing complex endovascular procedures and proficient in performing carotid arteriography, you are well suited to pursue CAS.
10. Stent placement: If the stent will not pass, use a buddy wire. Do not stent across kinks if it can be avoided. Stent across single kink and only if it is within a centimeter or two of the lesion. Do not overdilate the stent.
11. Advice on institutional politics: However bad you think it will be, it will be a little worse than that. Smile a lot. Realize that when people use personal attacks, it is because of a paucity of rationale for their approach. You owe it to your patients to be good at performing this procedure.