Response to Letter by Cohen

Response:
We thank Dr Cohen for his interest in our study and for his questions aiming at clarifying our data. Postprocedure strokes were considered minor if they increased the NIHSS by ≤3 at the end of 30 days.

Justly, Dr Cohen raises the concern that clinically silent diffusion-weighted imaging lesions after carotid angioplasty and stenting (CAS) might have an impact on cognitive functions, which unquestionably deserves to be tested in large studies. On the other hand, current data from small studies indicate neither that CAS carries a high risk of cognitive decline nor that there is a clear association between the incidence of new diffusion-weighted imaging lesions and cognitive parameters. In fact, the effects of CEA and carotid PTA on cognition were comparable in a small substudy of the Carotid and Vertebral Artery Transluminal Angioplasty Study (CAVATAS), despite a significantly higher embolic load during angioplasty as recorded by transcranial Doppler sonography. Although 40% of patients had new diffusion-weighted imaging lesions after CAS, in a recent study cognitive and memory performances even improved. Similarly, it has been shown that the incidence of new diffusion-weighted imaging lesions after either coronary artery bypass grafting (45%) or cardiac valve replacement (47%) is not related to cognitive function.

We definitely agree that the benefit of either carotid endarterectomy (CEA) or CAS is highly dependent on the risk of procedural neurological complications and is eliminated when the combined 30-day stroke and death rates exceed approximately 6% for patients with a symptomatic carotid stenosis and 3% for asymptomatic patients, respectively. The overall 30-day stroke and death rate in those patients included in our analysis was 2.2% in asymptomatic patients, which is below the 3% limit that the American Heart Association has established as acceptable upper limit for combined postprocedural stroke and death for asymptomatic patients who undergo CEA. In contrast, the 30-day stroke and death rate was 6.8% in symptomatic patients, which is slightly above the recommended upper limit of 6% (and not 5% as cited by Dr Cohen) for patients who undergo CEA. On the other hand, this series included many patients who had factors associated with an increased surgical risk, such as age ≥80 years (13%), contralateral carotid occlusion (19%), bilateral carotid disease (25%) and coronary artery disease (16%). It should also be emphasized that the recently published Stent-Supported Percutaneous Angioplasty of the Carotid Artery versus Endarterectomy (SPACE) trial reported similar 30-day stroke and death rates after CEA (6.51%). Finally, in CAVATAS the stroke and death rate within 30 days was even 10% after CEA, likely reflecting the general tendency to treat less fit patients outside the setting of the large surgical trials.

We are well aware of the fact that patients presenting with a transient ischemic attack or stroke attributable to a high-grade carotid artery stenosis have a high risk of early recurrent ischemia and should thus be treated as soon as possible, ideally within 2 weeks of a presenting event. In our study, the median (interquartile range) delay between symptom onset and CAS was 25 (13 to 42) days. It is noteworthy that this time period comprises the delay between symptom onset and initial presentation at our department and appears to be substantially shorter than the median time of 100 (59 to 137) days from presenting event to CEA found in a recent population-based survey.

Despite an acceptable complication rate of CAS at our institution, we agree that CAS needs to be evaluated further, ideally in a combined effort of neurologists, interventional neuroradiologists, and vascular surgeons.

Disclosures
None.

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