Letters to the Editor

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Combined Carotid Endarterectomy and Coronary Artery Bypass: a Still-Feasible Procedure?

To the Editor:

The recent article by Randall et al1 is of great interest and involves a large number of patients undergoing carotid artery stent (CAS) and staged myocardial revascularization with a low incidence of periprocedural neurological complication. However, we have some comments and report our own experience.

Regarding the AHA guidelines, we do not feel it appropriate to perform carotid/coronary surgery, as Naylor pointed out, with a staged procedure.2 Data on staged procedures taken from his meta-analysis are biased in that the authors do not indicate the number of patients initially enrolled and then submitted to the first procedure (carotid endarterectomy), and the number of patients who leave the study because of neurological or cardiac complications that would contraindicate the programmed staged heart surgery. Furthermore, any procedure, programmed or not, that leaves up to 6 months between the 2 operations was considered staged. By neurologic point of view, the comparison between staged and combined without any cerebral monitoring method is not correct. This is why, even though statistically correct, a postoperative stroke risk of 5.4 for a combined and 3.2% for a staged procedure and a mortality risk of 9.5 versus 6.6% would not seem comparable. Moreover there is no mention of which surgical team performs the combined operations.

In Randall’s study, no adverse events occurred in the first 30 days, but before myocardial revascularization, there were 3 cardiac death (5.7%) and an overall mortality rate at the end of the 2 procedures of 19.2%. We think that these results are too poor to suggest performing the hybrid carotid artery stent/coronary artery bypass graft (CABG), which necessarily requires staging, both for technical (interventional vascular radiology room) as well as medical necessity. We agree with Dalainas and Nano3 on antiplatelet therapy before and after carotid artery stent. The staged procedure makes it necessary to either suspend systemic antiaggregation with an increase in neurological risk or increasing surgical bleeding.

It would have been useful to understand the level of clinical involvement of Randall’s study patients undergoing this hybrid staged procedure by means of an improved characterization in severity rate of the heart disease (number of vessels involved, symptomatic cardiopathy, emergency) and the degree of carotid disease (contralateral carotid occlusion or neurologic symptoms). The presence of 7.7% symptomatic patients was limited. Furthermore, follow-up was performed only with neurological assessment and no mention was made of Duplex evaluation to reveal any eventual occlusion or intrastent restenosis.

In our institution between 1998 and May 2006, 152 combined carotid thromboendarterectomy/CABG (same anesthesiologic setting) were performed. Preoperative symptoms were TIA in 7.8% and stroke in 5.2%. According to AHA guidelines, stenosis was >80% in 53% of operated cases, and 8.5% had concomitant contralateral carotid occlusion. Three underwent coronary artery bypass; 22 patients were submitted to CABG and valve replacement, and in 2 cases the ascending aorta was also repaired. Cerebral monitoring was always performed, EEG initially and then Near Infrared Spectroscopy were used on the last 53 cases.

The incidence of ipsilateral postoperative ischemic stroke was 1.97% (2 major and 1 minor), and globally there were 5 stroke events (3.2%). There were 4 deaths at 30 days, of which 3 were caused by heart failure (1 perforated gastric ulcer on postoperative day 20). Overall stroke/death rate was 5.9% at 30 days.

Of the 148 patients entering follow-up, 10 were lost. Over the 8-year period, 31 deaths occurred (20.9%), of which 15 were caused by heart failure. All patients were submitted to supraortic echo color Doppler evaluation, which showed hemodynamic restenosis in 2.7% of cases. There was only one TIA and one case of hemorrhagic stroke during follow-up.

We therefore believe that combined surgery carotid endarterectomy/CABG, even though bearing high risk, when performed according to AHA guidelines, under neurological monitoring, and by 2 different surgical specialist teams (vascular and cardiac), is advantageous when compared with other techniques (staged carotid endarterectomy/CABG or staged carotid artery stent/CABG), from a patient comfort viewpoint and because the patient faces only one anesthetic and surgical risk despite good long-term results. We also agree on the necessity for a modern randomized controlled trial focusing on combined or staged approach and surgery or endovascular therapy.

Disclosures

None.

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