Moving on unconventional research fields for carotid endarterectomy in asymptomatic patients

We read with great interest the report by Paraskevas et al[1] published in the Journal on the comparison between the Society for Vascular Surgery[2] and the European Society for Vascular Surgery[3] guidelines regarding the use of carotid endarterectomy (CEA) in patients with asymptomatic carotid stenosis (ACS).

The authors concluded that both guidelines provide valid indications for offering prophylactic CEA to patients with a life expectancy of ≥3 to 5 years and perioperative combined death/stroke rate <3%.

CEA for patients with ACS continues to be a debated topic, with extreme differences in clinical practice.[4,5]

In particular, three topics were indicated as impending perspectives:

- Risk models to predict perioperative morbidity and mortality
- Patient-related characteristic that can affect the long-term survival rate
- Patient-related comorbidities that nullify the postoperative advantage in terms of the reduction in stroke/transient ischemic attack rates

These areas of interest all focus on patients' preoperative clinical status.

Although studies with definitive evidence have not been reported yet, pivotal research projects are ongoing to start answering these not-well clarified issues.

Several risk scoring systems have been developed to predict the postoperative short-term[6] and long-term[7] life expectancy of patients with ACS. These are rapid tools that could help clinicians in discriminating those patients who will benefit from CEA, starting from available clinical and routine blood test variables. Despite these advantages, external validation of the scoring systems is urgently needed to provide real utility.

Another support for patient enrollment could derive from geometric features and personalized computational fluid dynamics. Starting from patient-specific data imaging, it is possible to detect areas exposed to turbulent flow. If applied on a wide scale, these results could improve the outcomes of CEA, in particular in terms of the restenosis rates.[8] The limitations of engineering analysis remain the high computational costs and the current difficult applicability outside of academic studies. Collaboration between vascular surgeons and engineers will allow for the creation of simple, usable, and shareable forecast models.

Although some "old" controversies remain in defining the role of CEA for patients with ACS, attempts to provide an answer are alive and ongoing. Additional higher level studies would be useful for creating a literature core to be included in the guidelines.

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The painstaking search for the optimal management of patients with asymptomatic carotid stenosis

We thank Bissacco et al for their interest in our work.[1] The optimal management of patients with asymptomatic carotid stenosis (ACS) remains the subject of extensive debate. The Committee Members of both the 2011 Society for Vascular Surgery (SVS)[2] and the 2018 European Society for Vascular Surgery (ESVS) guidelines[3] worked meticulously towards the definition of the