

INTERVENTIONAL CARDIOLOGY

Guidance for carotid stenting

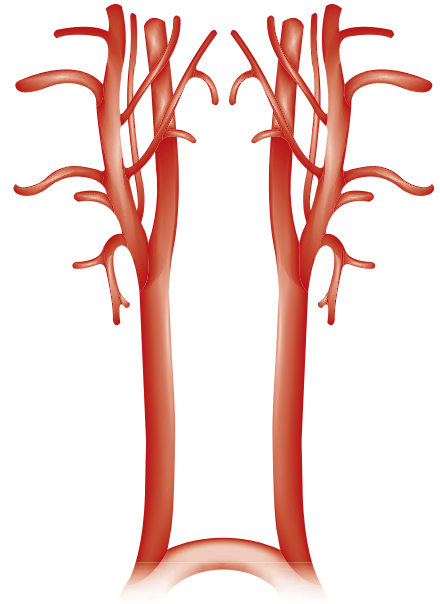
UK researchers have devised a ‘traffic light’ scoring system to aid operators in their selection of patients for carotid stenting. The expected difficulty of the procedure was categorized on the basis of anatomical characteristics to identify the risk level for patients being considered for the procedure.

Anatomical complexities can increase the difficulty of arterial catheterization, prolonging stenting procedures and increasing the risk of embolization and stroke. Although experienced operators can recognize features that present technical difficulties and modify their technique appropriately, inexperienced operators are less able to do so—it would be helpful if they could select patients in whom the carotid anatomy is straightforward, until they gain more experience. However, the importance of the carotid arterial anatomy in selecting patients for carotid stenting has not been objectively analyzed in a way that can be used to judge the feasibility of performing the procedure safely in a given patient. Researchers at the Freeman Hospital in Newcastle-upon-Tyne embarked on a project to categorize different levels of complexity and provide guidance for assessing the risks and feasibility of carotid stenting. “We wished particularly to reach inexperienced operators (that is, those with less than 50 cases of personal experience) who were unfamiliar with

the carotid arterial territory and carotid stenting,” comments Sumaira Macdonald, one of the researchers at the Freeman Hospital.

A multinational, multispecialty panel of 12 experts was convened and given the task of assessing varying levels of procedural difficulty on the basis of anatomical parameters. This was achieved through a consensus process in which panelists selected specific anatomical features relevant to carotid stenting, which they ranked on a scale of one to nine in order of increasing difficulty posed by each specific patient anatomy. A total of 96 different combination anatomies that are likely to be encountered were then identified and graded according to the level of complexity. These combinations were grouped into three bands and presented as traffic light colors: green for those deemed to be straightforward, amber for moderately difficult cases that are best performed with an experienced operator present, and red for very difficult cases that are best avoided, at least by inexperienced operators. “The intention is,” Macdonald says, “that the operator can score real patient anatomy using the traffic light scheme.”

Macdonald and her colleagues plan to evaluate the usefulness of their scoring system as an educational tool and to assess whether using the system to identify high-risk patients will lead to a reduction in the



rate of procedural stroke. Carotid stenting is “a valuable technique when performed by experienced operators in appropriately selected patients,” Macdonald adds, “but can be performed badly by inexperienced operators in unselected patients”. Thus, the ultimate aim of their work is to improve the safety profile of carotid stenting and reduce the incidence of adverse procedural outcomes.

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Original article Macdonald, S. *et al.* Towards safer carotid artery stenting: a scoring system for anatomic suitability. *Stroke* 40, 1698–1703 (2009).