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EDITORIAL COMMENTARY

Another approach to dissection involving the aortic arch

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See related article on pages 2132-8.

The best approach for surgery on an acute proximal dissection involving the aortic arch remains debatable. For example, should patients with dissection beyond the ascending aorta (Stanford type B) undergo surgery if the arch is involved? Most agree that surgery is not initially required for those patients with type B dissection beyond the left subclavian artery. Moreover, in those patients with type A dissection, involving the ascending aorta and arch (excluding DeBakey type II), should a more aggressive arch reconstruction be performed? Certainly, earlier literature from Stanford and Baylor College of Medicine concurred that arch replacement should not be performed unless there is a clear indication, such as arch rupture or a large

arch aneurysm. Also, even tears in the arch can be oversewn and the ascending and hemiarch replaced with minimization of the extent of surgery and circulatory arrest time. More recently, the "frozen elephant trunk" approach has been adopted, with various combinations of retrograde or antegrade delivery of stent grafts in the descending thoracic aorta. The general consensus is that this will reduce the risk of subsequent reoperations, and indeed there is some evidence for this. Nonetheless, this approach likely carries the risk of longer circulatory arrest time and more strokes, with a greater risk of death. There would be an expected number of patients who have gut ischemia also. In the German Registry of Acute Aortic Dissection Type A (GERAADA),¹ among 658 patients with ascending aortic tears, 518 underwent ascending hemiarch and 140 total arch replacement with or without elephant trunk or frozen elephant trunk. As expected, circulatory arrest time was 24.3 minutes versus 44.8 minutes ($P < .001$), mortality was 18.7% versus 25.7% ($P = .07$), and neurologic deficit was 13.6% versus 12.5% ($P = .78$); however, in those patients without preoperative neurologic deficits, there was a significant difference in mortality (14.1% vs 24%; $P = .02$). The multivariable logistic predictors of death were age, resuscitation, brain perfusion time, and circulatory arrest time, emphasizing the increased risk associated with the more complex repairs that may reduce later risk of reoperation.

In this issue of the *Journal*, Wu and colleagues report excellent results (mortality, 3.2%; stroke, 1.6%) with a

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Disclosures: Author has nothing to disclose with regard to commercial support.

Received for publication Sept 29, 2014; accepted for publication Oct 1, 2014.

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J Thorac Cardiovasc Surg 2014;148:2138-9

0022-5223/\$36.00

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<http://dx.doi.org/10.1016/j.jtcvs.2014.10.003>

prefabricated elephant trunk stent graft inserted in 252 patients with acute aortic dissection. The cooling strategy and brain protection methods were those most often used by other groups. There are some caveats. Wu and colleagues only selected patients who had acute dissection and bilateral antegrade brain perfusion (unilateral and retrograde excluded) and with no surgical “contraindications.” We thus do not know the total denominator and outcomes for the excluded patients. Of note, none of their reported patients had gut ischemia develop; only 2 had limb ischemia

(0.8%) and 1 had rupture (0.4%), highlighting the selected nature of the reported patients. Nevertheless, the results of this interesting series are good and add further to the debate about the role of more extensive arch repairs.

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