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# Commentary on “Multibranched Frozen Elephant Trunk with Left Subclavian Artery Cannulation” by Martinelli, G.L. et al.

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Dear Editor:

The paper by Martinelli et al. [1] presents a variant of the frozen elephant trunk procedure for repair of pathology in the ascending aorta, aortic arch, and proximal descending aorta. The authors take the approach of performing the distal anastomosis in an extra-anatomic location proximal to the innominate artery. Their other modification involves a side-arm graft to the subclavian artery, which is used initially for perfusion and subsequently for permanent anastomosis to the main graft.

This approach is well conceived and offers several potential advantages. First, this technique, like all frozen elephant trunk methods, aims to achieve thrombo-exclusion of the false lumen after introduction of an endoprosthesis into the descending aorta, with the purpose of reducing late aneurysm formation. However, this technique cannot overcome the impact of distal reentries below the bottom of the frozen elephant trunk, which can encourage late dilatation in those segments. Second, trans-

posing the proximal anastomosis to a more proximal extra-anatomic location certainly facilitates the anastomosis, is likely to reduce the circulatory arrest time, and avoids trauma to the recurrent laryngeal nerve.

A number of concerns arise regarding this technique, presented in this paper after experience in five patients:

1. The early surgical results (20% mortality) are concerning, with one death and one dialysis-requiring renal failure in this small, early series. Late results are completely unknown.
2. The patency and long-term fate of the multiple long grafts to the great vessels (innominate, left carotid, left subclavian) are entirely unknown. Especially, the patency over long intervals of the subclavian graft traversing the chest wall is entirely unknown.
3. The idea that perfusing the left subclavian artery and, in this way, the left vertebral artery and the anterior spinal artery, is purely

anatomical and speculative. There is no physiological or other evidence that this will produce actual benefit to the spinal cord. Since this series is so small, the argument that the authors had no spinal problems is not cogent.

4. Reoperation on patients having had such an operation would be formidable when we look at Figure 2 [1], showing the end anatomic result.

Despite the potential theoretical advantages of the proposed approach, strong caution is advised regarding its widespread adoption.

## Conflict of Interest

The authors have no conflict of interest relevant to this publication.

**Comment on this Article or Ask a Question**

## Reference

1. Martinelli GL, Vivacqua A, Braccio M, Cotroneo A, Greco P, Cassese M. Multibranched frozen elephant trunk with left subclavian artery cannulation. *Aorta* 2014;2:87–90. DOI: [10.12945/j.aorta.2014.13-057](http://dx.doi.org/10.12945/j.aorta.2014.13-057)

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