more experience with this technique, we expect them to enlighten us with additional insights and details about its efficacy and durability. Time will tell.

Until then, we may continue to use our classic and modified FET techniques based on individual patient characteristics.³

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Commentary: Doing the distal more proximal

Anthony L. Estrera, MD

Surgical reconstruction of the transverse aortic arch is burdened with the potential for debilitating complications and death. Graft reconstruction of the arch (with or without aortic root) is even more challenging in the setting of acute type A aortic dissection. To reduce these risks, surgeons have developed techniques and approaches with 2 goals: minimize organ ischemia, and reduce bleeding.

Li and colleagues¹ describe their technique of the frozen elephant trunk procedure for total arch replacement in the setting of type A aortic dissection. The authors use a trifurcated arterial line circuit to perfuse the common femoral artery and left and right axillary arteries. Depending on the sequence of clamping, arterial perfusion is maintained to all organs with only minimal interruption (about 2 minutes) when the frozen elephant trunk is deployed.

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CENTRAL MESSAGE

The authors describe an innovative technique for total arch replacement in the setting of type A aortic dissection. A larger series is required before wide adoption is recommended.

The aortic crossclamp is placed onto the frozen elephant trunk prosthesis and femoral perfusion is reinitiated. This approach is not novel as it has been described previously. At any rate, they address the first goal of minimizing organ ischemia.

What was interesting in their approach was the management of the great arteries. The left subclavian artery was ligated proximally—and would be bypassed after completion of the aortic reconstruction. The left common carotid and innominate arteries were left in situ, and sutured to a longitudinal opening on the polyethylene terephthalate portion of the elephant trunk graft with the native aortic tissue left in place. For lack of a better term, this may be considered an inclusion technique for this island anastomosis. The inclusion approach, according to the authors, reduced bleeding from that anastomosis (goal 2).

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To reduce bleeding, the authors also proximalized the distal anastomosis to zone 0. By performing the inclusion technique on the great arteries, they allowed the proximalization of the distal anastomosis to zone 0. This is easier to perform and much more accessible to correct bleeding, thus accomplishing goal 2.

A few points with their approach should be emphasized. When performing the clamping on the frozen elephant trunk graft, this was performed on the polyethylene terephthalate portion at the level of the ligated left subclavian artery, not the stent graft portion. This implied that the stent graft portion was deployed beyond the left subclavian artery. Leaving the inclusion portion of the great arteries may be more hemostatic but may also be susceptible to complications at that level, especially if bleeding occurs between the layers of the polyethylene terephthalate graft and native wall, leading to stenosis, occlusion, or redissection. Last,

with the trifurcated perfusion strategy, the vessels may be all dissected, leading to issues with new retrograde dissections, competitive retrograde flow, and potential new organ malperfusions.

In all, this was a small series of 5 cases. A much larger series, with longer follow-up, is required before wide adoption can be recommended. However, the authors are to be commended for continuing to improve techniques with total arch replacement in the setting of acute type A aortic dissection by doing the distal more proximal and potentially reducing ischemic time and bleeding.

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