MULTIFACTORIAL CONSIDERATIONS IN FROZEN ELEPHANT TRUNK SELECTION AND TREATMENT STRATEGIES FOR ACUTE TYPE A AORTIC DISSECTION

To the Editor:

The article by Kitada and colleagues[1] introduces a novel method for sizing the proximal descending aorta in the treatment of acute type A aortic dissection using the frozen elephant trunk (FET) technique. Their approach aims to enhance long-term aortic remodeling and reduce the risk of stent-induced new entry by accurately determining the FET size with a new equation that they claim outperforms other methods.

Etiology and genetic factors matter. In this research, only 2 patients with Marfan syndrome were enrolled. Hereditary connective tissue disease is a common reason for aortic dissection. The survivors always have a larger aorta diameter, and it will always continue dilating; even after FET of totally endoscopic aortic valve replacement, second-stage intervention is a high probability. In this scenario, FET contributes most to simplifying the second-stage operation. The sizing of the FET may not be that crucial. In addition, different pathogenic variants may have a variable prognosis of the dissected aorta.[2]

Tear characteristics matter. Total arch replacement with FET addresses the proximal tear. However, acute aortic dissection always presents multiple tear sites. The complexity of aortic dissection, characterized by the number, size, and location of tears, undoubtedly affects the optimal FET sizing and the strategy for achieving aortic remodeling. The presence of multiple tear sites can complicate the treatment and the expected remodeling process, underscoring the need for a more nuanced approach that considers these variables in FET sizing and placement. Some surgeons address this by performing septectomy during or after the procedure, which can significantly affect the remodeling process.[3]

True lumen dynamics matter. The authors mainly focus on the size of the entire aorta cross-section, whereas the true lumen varies from patient to patient, with some patients having very small true lumens with equal flow in both lumens and others having relatively larger true lumens with thrombosed false lumen. The status of the true lumen will affect the choice of FET size[4]; further,the true/false lumen ratio may affect the FET size from another perspective.

Local aortic pathology and perioperative factors matter. Local aortic conditions such as severe atherosclerosis and the management of perioperative blood control are also crucial considerations that can affect the choice of FET size and the long-term outcomes of the surgery.[5] These factors further emphasize the complexity of decision-making in FET procedures and the limitations of relying solely on a standardized sizing equation.

In conclusion, although the method of Kitada and colleagues marks a significant improvement in the treatment of acute type A aortic dissection, a holistic and individualized approach to FET sizing is crucial. This approach should incorporate factors such as etiology, tear characteristics, true lumen status, and local aortic pathology to optimize patient outcomes in the complex landscape of aortic dissection. From our experience, we advocate for a smaller stented graft size (26-30 mm) to balance the remodeling of the distal dissected aorta and to prevent malperfusion caused by rapid thrombosis in the false lumen.

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Conflict of Interest Statement

The authors reported no conflicts of interest.

The *Journal* policy requires editors and reviewers to disclose conflicts of interest and to decline handling or reviewing manuscripts for which they may have a conflict of interest. The editors and reviewers of this article have no conflicts of interest.

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https://doi.org/10.1016/j.xjon.2024.03.008