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Commentary: Thoracic endovascular aortic repair for uncomplicated acute type B aortic dissection: It's not a complicated decision

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The controversy regarding the optimal therapy for uncomplicated acute type B aortic dissection (uATBAD) remains unresolved. Thoracic endovascular aortic repair (TEVAR) is the undisputed gold standard for the treatment of complicated acute type B aortic dissection (cATBAD). However, there has not been widespread acceptance of the use of TEVAR for all patients with uATBAD due to the perceived excellent outcomes with optimal medical therapy (OMT) alone. While OMT provides excellent in-hospital and 1-year survival,¹ mortality significantly increases in the chronic phase due to false lumen aneurysm formation and rupture. A recent analysis of the Emory Aortic Database of 318 patients with uATBAD demonstrated that 46% of patients required intervention in the chronic phase, and intervention-free survival was only 49% and 31% at 5 and 10 years.² Therefore, TEVAR has been proposed as an adjunct to OMT, with the intent to remodel the dissected thoracic aorta and improve aortic-related mortality in the chronic phase, as demonstrated by the INSTEAD-XL (Investigation of Stent Grafts in Aortic Dissection with extended length of follow-up) data.³ The argument against the use of TEVAR for uATBAD includes subjecting patients to the periprocedural risks of stroke, retrograde type A dissection, device cost, and long-term adverse effects on arterial resistance and left ventricular remodeling. Since there has not been a large-scale, prospective, randomized

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CENTRAL MESSAGE

TEVAR for acute uncomplicated type B aortic dissection is a safe procedure with equivalent short-term outcomes to patients with acute complicated dissections.

trial comparing TEVAR with OMT for uATBAD, physicians are left with retrospective, observational data to guide their treatment.

The report from the GREAT (Global Registry for Endovascular Aortic Treatment) registry in this month's *Journal* by Spinelli and colleagues⁴ examines the real-world early outcomes of TEVAR for the treatment of 102 patients with cATBAD and 70 with uATBAD with the Gore TAG and comfortable TAG grafts from 2010 to 2016. The data from the patients with cATBAD confirm TEVAR as the optimal therapy for this high-risk group. However, the real value of this report lies in the data from the uncomplicated patients. In this group, the 30-day, 1-, and 3-year mortality rates were 1.4%, 3.2%, and 9.6%, which are equivalent or superior to OMT data at similar time points from other reports in the literature.^{3,5} Furthermore, the aortic event-free survival was 77% and 71% at 1 and 3 years, respectively, an end point that includes the need for reintervention, stroke, spinal cord ischemia, aneurysm growth, retrograde dissection, or persistent false lumen entry flow. These data establish the perioperative safety of TEVAR for patients with uATBAD and demonstrate that TEVAR is noninferior to OMT in the short term. Unfortunately, the median follow-up in this study was brief (2 years), and there are very few data available to assess the efficacy of aortic remodeling, including changes in true and false lumen and total aortic diameters and the extent of false lumen thrombosis.

Given the poor long-term results with OMT and the growing body of data demonstrating the safety and efficacy

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Disclosures: The author 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.

Received for publication Jan 22, 2021; revisions received Jan 22, 2021; accepted for publication Jan 25, 2021; available ahead of print Jan 30, 2021.

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J Thorac Cardiovasc Surg 2023;165:14-5

0022-5223/\$36.00

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<https://doi.org/10.1016/j.jtcvs.2021.01.092>

of TEVAR in patients with uATBAD, endovascular therapy should become the primary therapy for all patients with uATBAD with favorable anatomy who are not at the extreme ends of the age spectrum. It is time to move forward; this is not a complicated decision.

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Commentary: The 2-step strategy

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According to current guidelines, complicated type B aortic dissection (TBAD) requires endovascular therapy.¹ Nonetheless, the treatment of uncomplicated TBAD (uTBAD) remains controversial.¹ In this setting, thoracic endovascular aortic repair (TEVAR) has gained consensus over time; however, its recommendation remains in class IIa due to the lack of clinical trials.¹ Spinelli and colleagues² add evidence on the safety, efficacy, and usefulness of TEVAR in uTBAD. Analyzing Gore's Global Registry for Endovascular Aortic Treatment Registry, the authors report comparable outcomes between patients with complicated TBAD and uTBAD in terms of mortality, aortic complications, and reinterventions. The rationale of applying TEVAR in the treatment of TBAD is to seal the intimal tear, allowing the true lumen expansion and reducing the tension of the false lumen (FL) to promote its thrombosis. Moreover, endovascular aortic repair should reduce the risk of aortic remodeling and aortic-related complications (eg, aneurysm

Thoracic endovascular aortic repair.

CENTRAL MESSAGE

Stratification of uncomplicated type B aortic dissection and correct timing for TEVAR improves survival and prevents aortic-related adverse events.

formation, rupture, and organ ischemia).³ Nevertheless, this procedure may be complicated by retrograde aortic dissection and the rate of reinterventions for endoleaks is around 24%.⁴ The treatment of uTBAD with TEVAR should be carefully evaluated according to patient-specific presentation, weighting benefits and risks of the procedure. Reviewing preoperative computed tomographic images of uTBAD patients, Sailer and colleagues⁵ identified 5 risk factors: connective disorders, circumferential extension of FL, the maximal aortic diameter, FL outflow, and intercostal branches involved. Based on these characteristics, they were able to stratify patients in low, intermediate, or high risk for adverse events. Moreover, the concavity of the distal arch and entry tears >10 mm were associated

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Disclosures: 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.

Received for publication Feb 2, 2021; revisions received Feb 2, 2021; accepted for publication Feb 3, 2021; available ahead of print Feb 12, 2021.

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J Thorac Cardiovasc Surg 2023;165:15-6

0022-5223/\$36.00

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<https://doi.org/10.1016/j.jtcvs.2021.02.011>