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.

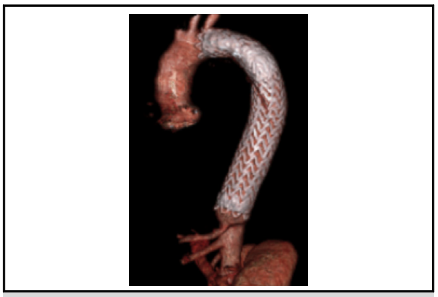
References

1. Fattori R, Cao P, De Rango P, Czerny M, Evangelista A, Nienaber C, et al. Interdisciplinary expert consensus document on management of type B aortic dissection. *J Am Coll Cardiol*. 2013;61:1661-78.
2. Lou X, Chen EP, Duwayri YM, Veeraswamy RK, Jordan WD Jr, Zehner CA, et al. The impact of thoracic endovascular aortic repair on long-term survival in type B aortic dissection. *Ann Thorac Surg*. 2018;105:31-9.
3. Nienaber CA, Kische S, Rousseau H, Eggebrecht H, Rehders TC, Kundt G, et al. Endovascular repair of type B aortic dissection: long-term results of the randomized investigation of stent grafts in aortic dissection trial. *Circ Cardiovasc Interv*. 2013;6:407-16.
4. Spinelli D, Weaver FA, Azizzadeh A, Magee GA, Piffaretti G, Benedetto F, et al. Endovascular treatment of complicated versus uncomplicated acute type B aortic dissection. *J Thorac Cardiovasc Surg*. 2023;165:4-13.e1.
5. Iannuzzi JC, Stapleton SM, Bababekov YJ, Chang D, Lancaster RT, Conrad MF, et al. Favorable impact of thoracic endovascular aortic repair on survival of patients with acute uncomplicated type B aortic dissection. *J Vasc Surg*. 2018;68:1649-55.

See Article page 4.

Commentary: The 2-step strategy

Lorenzo Di Bacco, MD,[a] Mattia Glauber, MD,[b] and Antonio Miceli, MD, PhD[b]



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.

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 colleagues[2] 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 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 colleagues[5] 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

From the [a]Cardiac Surgery Unit, University of Brescia, ASST Spedali Civili, Brescia, Italy; and [b]Department of Minimally Invasive Cardiac Surgery, Istituto Clinico Sant'Ambrogio, Milan, Italy.

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.

Address for reprints: Antonio Miceli, MD, PhD, Department of Minimally Invasive Cardiac Surgery, Istituto Clinico Sant'Ambrogio, Via LG Faravelli 16, Milano, Italy (E-mail: antoniomiceli79@alice.it).

J Thorac Cardiovasc Surg 2023;165:15-6
0022-5223/$36.00

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

with poor prognosis at either presentation or during hospitalization.[6,7] Finally, Sato and colleagues[8] reported that the shape of the true lumen was a predictor for aortic growth. Using these tools, a tailored approach can be hypothesized. In the study presented by Spinelli and colleagues,[2] it would have been of interest to stratify the risk of aortic adverse events of uTBAD patients receiving TEVAR. It is well known that optimal anti-impulse therapy (OMT) is effective in controlling symptoms and is associated with an intrahospital survival of 90%.[3] However, survival decreases to 64% and 29% in intermediate and high-risk patients, respectively.[9]

We recommend early TEVAR treatment in high-risk patients, whereas low-risk patients may follow a delayed 2-step strategy consisting of OMT first and TEVAR second.[10] OMT induces partial FL thrombosis, reduces aortic wall tension, and allows tissues thickening as result of inflammation. All of these factors are less likely to have aortic procedure-related complications.[11,12] However, chronicization reduces the tissue elasticity, lowering the possibility of effectively reducing the FL.[11,12] In light of these considerations, stratification and timing are essential to maximize TEVAR benefit and reduce postoperative complications. Despite this, the Interventional Stent Treatment Acute Dissection trial and Acute Dissection: Stent Graft or Best Medical Therapy trial failed to show lower mortality with TEVAR over OMT, and TEVAR was associated with higher rate of FL thrombosis and reduced aortic remodeling at follow-up.[13,14] Because a number of patients with uTBAD will develop postdissection aneurysms requiring surgery, we can conclude that OMT alone remains a suboptimal treatment and elective TEVAR may play an important role in preventing aortic wall remodeling.

References

1. Erbel R, Aboyans V, Boileau C, Bossone E, Di Bartolomeo R, Eggebrecht H, et al. 2014 ESC guidelines on the diagnosis and treatment of aortic diseases: document covering acute and chronic aortic diseases of the thoracic and abdominal aorta of the adult. The task force for the diagnosis and treatment of aortic diseases of the European Society of Cardiology (ESC). *Eur Heart J*. 2014;35:2873-926.
2. Spinelli D, Weaver FA, Azizzadeh A, Magee GA, Piffaretti G, Benedetto F, et al. Endovascular treatment of complicated versus uncomplicated acute type B aortic dissection. *J Thorac Cardiovasc Surg*. 2023;165:4-13.e1.
3. Schepens MAAM. Type B aortic dissection: new perspectives. *J Vis Surg*. 2018;4:75.
4. Hughes GC. Management of acute type B aortic dissection: ADSORB trial. *J Thorac Cardiovasc Surg*. 2015;149:S158-62.
5. Sailer AM, van Kuijk SM, Nelemans PJ, Chin AS, Kino A, Huininga M, et al. Computed tomography imaging features in acute uncomplicated Stanford type-B aortic dissection predict late adverse events. *Circ Cardiovasc Imaging*. 2017;10:e005709.
6. Weiss G, Wolner I, Folkmann S, Sodeck G, Schmidli J, Grabenwöger M, et al. The location of the primary entry tear in acute type B aortic dissection affects early outcome. *Eur J Cardiothorac Surg*. 2012;42:571-6.
7. Loewe C, Czerny M, Sodeck G, Ta J, Schoder M, Funovics M, et al. A new mechanism by which an acute type B aortic dissection is primarily complicated, becomes uncomplicated, or remains uncomplicated. *Ann Thorac Surg*. 2012;93:1215-22.
8. Sato H, Ito T, Kuroda Y, Uchiyama H, Watanabe T, Yasuda N, et al. New predictor of aortic enlargement in uncomplicated type B aortic dissection based on elliptic Fourier analysis. *Eur J Cardiothorac Surg*. 2017;52:1118-24.
9. Tsai TT, Fattori R, Trimarchi S, Isselbacher E, Myrmel T, Evangelista A, et al. Long-term survival in patients presenting with type B acute aortic dissection: insights from the international registry of acute aortic dissection. *Circulation*. 2006;114:2226-31.
10. Alfson DB, Ham SW. Type B aortic dissections: current guidelines for treatment. *Cardiol Clin*. 2017;35:387-410.
11. Yuan X, Clough RE, Nienaber CA. Management of uncomplicated type B aortic dissection. *Hearts*. 2020;1:14-24.
12. Thakkar D, Dake MD. Management of type B aortic dissections: treatment of acute dissections and acute complications from chronic dissections. *Tech Vasc Interv Radiol*. 2018;21:124-30.
13. Nienaber CA, Kische S, Rousseau H, Eggebrecht H, Rehders TC, Kundt G, et al. Endovascular repair of type B aortic dissection: long-term results of the randomized investigation of stent grafts in aortic dissection trial. *Circ Cardiovasc Interv*. 2013;6:407-16.
14. Brunkwall J, Kasprzak P, Verhoeven E, Heijmen R, Taylor P, Canaud L, et al. Endovascular repair of acute uncomplicated aortic type B dissection promotes aortic remodelling: 1 year results of the ADSORB trial. *Eur J Vasc Endovasc Surg*. 2014;48:285-91.