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Commentary: It's not how you drive—it's how you arrive!

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Although acute type A aortic dissection is a life-threatening event, dissection affecting the distal aorta—type B aortic dissection—is far less lethal in most circumstances. The traditional treatment paradigm for acute type B aortic dissection (ATBAD) stresses medical management for the vast majority of patients, who are without serious complication. However, for the few patients with ATBAD and complications (eg, malperfusion, rupture, rapid aortic expansion, severe pain, and other factors), action must be taken to avoid catastrophe. In previous decades, surgery was undertaken to treat patients with complicated ATBAD; however, early reports from the International Registry of Acute Dissection indicated that a surgical approach resulted in upward of 30% early mortality.¹ In 2013, endovascular repair of type B aortic dissection was approved as an on-label indication by the US Food and Drug Administration. Since then, a dramatic increase has occurred in the use of thoracic endovascular aortic repair (TEVAR) to treat patients with ATBAD; data from the International Registry of Acute Dissection indicate that such use has more than quadrupled.² Despite the widespread use of TEVAR to treat patients with ATBAD, questions remain regarding its long-term effectiveness.³

In the current issue of *The Journal of Thoracic and Cardiovascular Surgery*, Bavaria and colleagues⁴ present their 5-year outcomes of endovascular repair using the Valiant Captivia (Medtronic Inc, Dublin, Ireland) in patients with complicated ATBAD. Of the original cohort of 50 patients (with an average age of 57 years),⁵ 23 patients remained in the study through 5 years, with 18 in compliance with

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CENTRAL MESSAGE

Remodeling occurs after TEVAR for acute type A aortic dissection, but unknowns remain in the long term.

imaging studies. Undoubtedly, the original cohort of 50 patients represented a complex group of patients; nearly all patients had extensive aortic dissection ($n = 46$), most patients ($n = 43$) had malperfusion, and one fifth ($n = 10$) had presented with aortic rupture. Nearly all the patients survived early treatment ($n = 46$), and only 2 patients had experienced an acute retrograde type A aortic dissection (on days 5 and 56). Furthermore, for most patients ($n = 16$) with imaging studies conducted at 5 years, the stent-graft had completely thrombosed the false lumen and had stabilized or improved the flow within the true lumen within the segment of the aorta directly covered by the stent-graft. This is the true success of TEVAR when applied to patients with ATBAD—the ability to successfully remodel the aorta when treatment is performed in the acute phase.

But, we need to tell the whole story. A couple of key lessons can be learned here. First, it was exceedingly difficult to follow the original cohort of Bavaria and colleagues⁵ out to 5 years—many patients died, several were lost to follow-up, and a couple withdrew.⁴ This reflects the reality of TEVAR—the long game remains unknown, although we can be comforted that the most compliant patients were doing well. Second, the treatment did not work well for everyone; nearly one half of all deaths were adjudicated to be related to dissection, several patients underwent endovascular reintervention, and 2 patients with postoperative paraplegia underwent amputation. In this very sick group of patients presenting with ATBAD, it is impossible to know with certainty whether these patients would have fared better or worse if the action undertaken had been open rather than

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endovascular repair, but one should at least entertain this thought. Finally, the outcomes of contemporary open repair of ATBAD are improving.⁶ Today, we have good news, bad news, and the remaining puzzle of determining the long-term scenario after endovascular repair of ATBAD. Remember that it's not how you drive, but how you arrive—these typically young patients need repairs that will be stable for a lifetime.

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Commentary: Are the early benefits of thoracic endovascular aortic repair in complicated type B dissection durable through time?

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The introduction of thoracic endovascular aortic repair (TEVAR) procedures have revolutionized the treatment of complicated type B aortic dissection. Perioperative mortality rates have declined from 30% to 50% for a classic open repair to 10% in the TEVAR era.¹ Although the benefits of TEVAR to decrease early morbidity and mortality are indisputable, data on late outcomes remain limited. Bavaria and colleagues² report good clinical outcomes at 5 years in a multicenter nonrandomized trial of 50 patients with acute

CENTRAL MESSAGE

Long-term outcomes of TEVAR for complicated type B are promising but require more complete follow-up. Long-term clinical and imaging assessments are mandatory to identify device-related complications.

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type B aortic dissection with malperfusion treated with the Valiant Captivia device (Medtronic, Minneapolis, Minn).

The initial objective of TEVAR in treating complicated type B aortic dissection is to rapidly reperfuse the true aortic lumen by covering the primary intimal tear. This objective was feasible in all 50 patients of the present study, confirming the high success rate of TEVAR in alleviating the dynamic malperfusion associated to complicated type B dissection. Late TEVAR goals after treatment of acute