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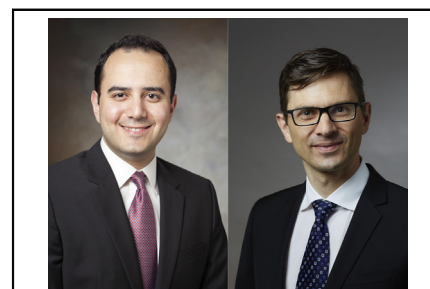
## Commentary: Where and when do we land—Thoracic endovascular aortic repair for retrograde type A aortic hematoma?

Roland Assi, MD, MMS, and Arnar Geirsson, MD

Nishi and colleagues<sup>1</sup> report a case of acute type B aortic dissection with retrograde type A dissection complicated by spinal malperfusion resulting in paraparesis. The primary tear was located in the mid-descending thoracic aorta and was successfully excluded with a covered stent and extended distally with an uncovered stent to preserve intercostal blood flow. The proximal landing zone was in the aortic arch zone 3. The patient had a good clinical outcome, with partial resolution of his neurologic deficits and remodeling of the ascending aorta during follow-up.

In our opinion, this is a classic case of type B dissection associated with retrograde intramural hematoma (IMH), not dissection. The nuance between a dissection with a thrombosed false lumen and an intramural hematoma without a flap is relatively new; sometimes it is difficult to tell the difference. In the presented case, the ascending aorta had a thick semicircumferential wall up to 7 mm without compression of the true lumen, the hallmark of IMH. The authors describe similar findings in the aortic arch. The descending aorta had a crescent-shaped false lumen with a compressed true lumen and visible tear and intimal flap, the hallmark of dissection.

The question then becomes: what is the safest treatment for retrograde type A dissection and IMH? In the case of retrograde type A dissection, the aorta is already dissected



Roland Assi, MD, MMS (left), and Arnar Geirsson, MD (right)

### CENTRAL MESSAGE

TEVAR for retrograde type A IMH is feasible but should be reserved for prohibitive surgical risk patients. Open proximal repair and debranching remains the safest management strategy.

and the risk of stent-induced new entry tear does not necessarily escalate the severity of the presentation. It is generally safe to proceed with standard thoracic endovascular aortic repair (TEVAR) covering the primary tear.

In the case of retrograde type A IMH, few similar cases of a TEVAR-only strategy have been described elsewhere,<sup>2,3</sup> but in general the safest approach is to perform an open proximal aortic repair and debranching in conjunction with an antegrade or retrograde TEVAR landing proximally in the Dacron graft. In addition to the risk of stent-induced new entry tear, landing a stent in an acute IMH poses the real risk of aortic rupture due to total disruption of the extremely weakened aortic wall by the stent.<sup>4</sup>

For prohibitive operative risk patients who are stable and without malperfusion, it is reasonable to start with “anti-impulse” therapy with serial computed tomography imaging at close intervals while allowing for the extremely weakened proximal aorta to heal. TEVAR could be offered then after an interval of 4 to 8 weeks.

We reserve a TEVAR-only approach in the acute setting for retrograde type A IMH in prohibitive operative risk patients with signs of malperfusion or rapidly enlarging IMH on serial imaging.

In brief, TEVAR for retrograde type A IMH is feasible but its safety unknown. We need to better understand the pathologic characteristics of IMH and understand the dynamic interaction with a rigid stent-graft. Until then,

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the safest TEVAR landing zone in the proximal thoracic aorta with IMH is inside a Dacron graft.

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