TEVAR: Myriad Considerations


Thoracic endovascular aortic repair (TEVAR) has been widely and increasingly practiced for more than a decade, with data indicating its utility in many patients with aneurysmal disease or dissection, as well as various states of trauma and injury.

However, despite its rapid rise, one of the most challenging questions aortic specialists still regularly weigh is whether the endovascular approach is optimal for the patient in front of them. Common is the patient who falls outside device instructions for use (IFU) yet is also a suboptimal surgical candidate, and a complex series of pros and cons must be considered. Concerns such as quality of life and cost-effectiveness are among them, but at a great distance behind binary feasibility and, ultimately, our expectations regarding mortality.

In other words, in the thoracic aorta, decisions aren't merely based on general open versus endo predilections or exposure-based preference of one device over another (although these are indeed among the factors), with easy on-table touch-ups or 30-day follow-up redos to fall back on.

Our focus in most instances begins with mapping out the structural scenario. A four-dimensional blueprint identifies the location and involvement of the compromised aorta. Sac shapes and sizes. Entry tears. True and false lumens. Potential proximal and distal landing zones or anastomoses, both viable and compromised. The organ-feeding vessels requiring bridging or bypass. Seal-confounding angles and diameters. The locations of intercostals ensuring basic mobility and motor function.

We consider how much worse the progressive degeneration will get and how rapidly. The amount of contrast the patient's kidneys can reasonably endure. The cumulative radiation exposure of everyone in the room. How soon a family provider can return to work. The patient's overall health and preferences. How many birthdays they'll see.

From a practical standpoint, we consider the devices and configurations we'd most likely select if employing TEVAR. This anatomy-to-device match ranges from falling perfectly within IFU to the global lack of anything remotely fitting the patient's unique needs.

Particularly in nonemergent cases, the health of past generations and other patient-related factors may be the best starting point once the pathology has been clearly imaged. Genetic elements can and likely will confound even the otherwise best laid plans if not properly accounted for.

These are just a few of the many factors that should inform every clinical decision in the thoracic aorta. In this issue of *Endovascular Today,* we have invited trusted voices to describe their experiences and the evidence they weigh in efforts to match therapy to patient. As you will read, we continue to see promising advancement in TEVAR platforms, but there is still considerable opportunity for further research and device development.

We hope this edition helps to inform the challenging decisions you face in your practice and to learn from your experiences in the years ahead. ■

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