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Commentary: Branches of life

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“I’d rather die.”

—Michael E. DeBakey, MD¹

With accumulating experiences, the contemporary open repair for both acute and chronic aortic dissection has yielded favorable outcomes. On the other hand, about 10% of the candidates for emergency aortic operation are considered “inoperable” because of age and comorbidities.² The postoperative major complication risks might also affect the patient’s decision, as in Dr DeBakey’s own experience as a patient.¹ Meanwhile, the in-hospital mortality of the patients with medically managed type A aortic dissection ranged from 48.6% to 64.9% according to the International Registry of Acute Dissection database during the last 2 decades.³ In this context, the development of the interventional treatment for the ascending aorta and the aortic arch pathology will be of great value, especially to these inoperable patients.

In this issue of the *Journal*, Zhang and colleagues⁴ report the long-term results of the customized, branched stent-graft insertion for the patients with aortic arch dissection who had been classified as being at “high risk for open

Jihoon Kim, MD, PhD (left), and Joon Bum Kim, MD, PhD (right)

CENTRAL MESSAGE

Despite the challenging pathoanatomy, the ascending aorta and the aortic arch interventions are constantly developing and opening doors for patients previously considered inoperable.

surgery” (n = 51) between 2009 and 2014, as a follow-up to their initial 5-year outcome reports published in 2015.⁵ The most frequent procedure was a single-branched stent-graft insertion (n = 22) in which the branch of the graft was placed to the left subclavian artery (n = 18). The rest of the patients were treated with various modifications, such as fenestrations and overlapping 2 grafts. Concomitant cervical bypass operations were also performed in 11 patients.

During the follow-up period (median of 92 months), the aorta showed positive remodeling, with no type I or III endoleak, and the incidences of complication (0.035%/patient-y), reintervention (0.015%/patient-y), all-cause mortality (0.020%/patient-y) and aorta-related mortality (0.010%/patient-year) were acceptable. There were 4 deaths in total, and the causes were retrograde type A

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dissection (n = 2), cerebral infarction (n = 1), and cancer (n = 1).

The excellent results in this study, however, require cautious interpretation for some reasons. First, although the patients had presented with acute symptoms, it took more than a month until the index procedure to allow for the customization of the stent grafts (median preparation time of 22 days). Accordingly, the procedures were performed in the chronic phase, in which the dissection flaps and the aortic walls are not so fragile. Surprisingly, all the patients with acute type A dissection survived the acute phase with successful medical treatments. Second, the exclusion criteria for open surgery used in this study may not be generalizable in the current era, in which perceived poor baseline characteristics such as advanced age, history of median sternotomy, severe chronic obstructive pulmonary disease, and renal insufficiency are no longer regarded as contraindications for open surgery in many centers. Interestingly, the patients were younger than expected (age, 65.5 ± 6.9 years) and seemed not to be that fragile, as all of them were able to tolerate general anesthesia for the procedures described in the study by Zhang and colleagues.⁴

Despite all these caveats, there are always patients who are considered to be unable to tolerate standard open aortic repairs, and these interventional approaches may be a heroic option. From this view, we believe that information shared in this report is valuable, and Zhang and colleagues⁴ are to be commended for their excellent work. Until the day when the ultimate intervention is available, patients carefully selected according to their pathoanatomy would benefit from currently available devices.

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