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RISKS AND BENEFITS OF EARLY AORTIC REPAIR: “YOU STILL CANNOT UNRING THE BELL!”

Reply to the Editor:

We welcome the open discussion that the article, “Decision-making algorithm for ascending aortic aneurysm—effectiveness in clinical application?,” by Dr Saeyeldin and colleagues has stimulated.¹ Unfortunately, the current system for peer review denies the reader of the sometimes animated discussion between editors, reviewers, and authors before the article gets finally published. The editorialists as well as the authors in their discussion touch on several issues discussed throughout the review process.

The Yale group has been setting standards for the treatment of patients with aortic disease for decades. Nevertheless, we share Dr Sundt’s concerns that the recommendations by the Yale group will lead to a large number of patients being exposed to the risk of surgery whereas the true risk for aortic events in this patient population is largely unknown. As Dr Sundt has eloquently put it during his talk on guidelines in aortic surgery at the 2018 American Association for Thoracic Surgery Aortic Symposium: “You can’t unring the bell.”

The authors have chosen to recommend surgery to patients with bicuspid aortic valves (BAVs) with aortic diameters from 4.0 to 4.9 cm. In their hands, the surgical results are excellent. Unfortunately, this recommendation encompasses a very wide range of patients. Previous studies have already shown that there are differences in the risk for aortic events in BAV patients who initially present with aortic diameters of 4 cm or less compared with patients with diameters from 4.5 to 4.9 cm at the time of aortic valve replacement.² This led to the recommendation in the current guidelines to replace the ascending aorta at the time of aortic valve replacement if it is larger than 4.5 cm.

The strength of the publications by the Yale group has always been the fact that Dr Elefteriades and colleagues were able to provide data not only on patients who underwent surgery but also on the natural history of those who did not undergo surgery. We have learned from the Yale groups’ published data that the aorta grows throughout our lifetime. We learned that it grows faster in patients with BAVs.³ The age at which the patient is diagnosed with a moderately enlarged aorta is therefore most probably another important predictive factor besides diameter itself.

To make an informed decision in a patient with BAV and a moderately enlarged aorta we have to look prospectively at a representative sample population of BAV patients with moderately enlarged aorta to estimate the true risk for aortic events. Although this is certainly a difficult task, it previously has been tried.⁴ There is evidence that suggests that patients with a known aortic aneurysm have a lower risk of aortic events than those in whom the presence of an aneurysm is not known. Although there is no causative medical treatment for aortic aneurysms (except for certain inflammatory conditions), blood pressure control, repeated imaging, and clinical follow-up in specialized centers have the power to modify the natural history of the disease. In a large study from Toronto following young patients with BAV, the risk for an aortic event was 0.1% per year.⁵ The patients in the Toronto study are young and healthy; the perioperative risk for stroke or other complications is low. Because many of these patients will have to undergo surgery at some point anyway, one might ask why not eliminate the risk for acute dissection by just being more proactive regarding surgical intervention?

But the truth is that the patients presented in the Toronto study are only a small proportion of patients who presented with BAV. The risk/benefit ratio in an older patient with relevant comorbidities is certainly different. Over the past decade, we have slowly come to accept that BAV is not one disease but many. An 80-year-old patient with a 4-cm aorta in the presence of severe aortic stenosis with a raphe between the left and right aortic cusp can hardly be compared with a 20-year-old patient with a 4-cm aorta and beginning aortic regurgitation in a Sievers type 0 situation.

Within this plethora of clinical presentations of patients with BAV there are certainly patients who have a higher risk for aortic events than others. Unfortunately, it seems that we are not yet at the point where we can identify those patients with the certainty required to expose all patients with BAV and moderately enlarged aortas to the risk of surgery.

We thank Dr Elefteriades and colleagues again for sharing their invaluable data with us.

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