The authors reported no conflicts of interest.

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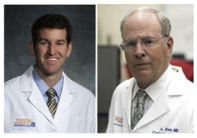

REPLY: CONCOMITANT AORTIC REPLACEMENT: HOW PROACTIVE SHOULD WE BE?

Reply to the Editor:

There is a growing body of literature demonstrating that concomitant aortic replacement at the time of elective cardiac surgery can be safely performed. In a recent article by Idrees and colleagues[1] in the *Journal*, they compare a cohort undergoing combined cardiac and aortic procedures with those undergoing cardiac surgery alone and found no difference in rate of in hospital stroke (1.4% vs 1.1%) or mortality (0.93% vs 0.46%). Current guidelines recommend concomitant replacement of the ascending aorta with dilation measuring greater than 4.5 to 5.5 cm diameter depending on risk factors.[2] The majority of patients in the study by Idrees and colleagues were within this range (mean 4.8 cm).[1]

In a recent letter to the editor, Acharya and Jahangiri[3] suggest that "diameter is not the sole determinant of aortic risk" and that by using only this lens we could be missing an opportunity to concomitantly intervene on smaller "benign" aneurysms that may ultimately progress requiring future correction or result in dissection. For example, they present findings from Paruchuri and colleagues[4] that even mild proximal aortic dilation (4.0-4.4 cm) carries an 89-fold increased risk of dissection. We read this letter with interest as it brings up an important question—how proactive should we be? Certainly, diameter is not the only determinant of risk. The likelihood of disease progression incorporates multiple factors including, but not limited to, valvular anatomy, aneurysm location, presence of genetic disorder, and presence of connective tissue disease.

We agree that consideration of these factors is important for surgical decision-making. This is reflected, to some degree, in current guidelines, as replacement is indicated for aneurysms larger than 4 to 5 cm in the presence of a bicuspid aortic valve or one of several genetically mediated disorders, including Marfan syndrome, vascular Ehlers–Danlos syndrome, or Turner syndrome.[2] However, as described in the letter, the risk of operating must be balanced against the risk of continued observation. In the absence of one of these factors, we feel that current indications for concomitant repair (4.5-5.5 cm diameter) must apply. Although operative risk is not markedly increased, proximal aortic replacement at the time of elective cardiac surgery increases operative time and complexity, and this must be balanced against the risk of disease progression. While mild ascending aortic dilation (4.0-4.4 cm) carries an 89-fold increased risk of future dissection, dilation to 4.5 cm carries a stark 346-fold increase in risk.[4] It is likely at this inflection point that the risk of continued observation outweighs the risk of operative intervention. While mean aortic dilation in the study by Idrees and colleagues was 4.8 cm,[1] It would be interesting to evaluate outcomes within a smaller diameter (<4.5 cm) subgroup for comparison.

Acharya and Jahangiri[3] propose an alternative strategy using an indexed measure of aortic dimension relative to patient height to identify aneurysms that may be at greater risk for dissection. Although there is emerging evidence that this measurement may aid in prediction, we feel that it should not supersede diameter—a parameter that has been rigorously studied for decades. Additional, diligent study of this indexed measurement is needed to understand its predictive power. At current, its primary utility in concomitant aortic replacement should be as an adjunct in surgical decision making within the constraints of accepted guidelines.

This letter brings to light important considerations for concurrent aortic replacement at the time of elective cardiac surgery. Namely, it raises the question if we should be more proactive in our approach. We agree with the authors that risk of disease progression is multifactorial and there is some opportunity for nuanced surgical decision making; however, we should proceed within current guidelines to optimize the benefit to risk ratio.

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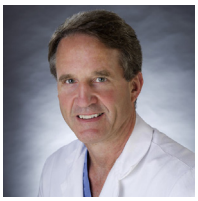

REPLY: SHOULD SMALL AORTAS BE REPLACED?

Reply to the Editor:

Acharya and Jahangiri[1] write to support the inferences from Idrees and colleagues,[2] and perhaps to politely disagree with the points I tried to make in my Commentary on that manuscript.[3] A variety of arguments have been made over many years in favor of replacing aortas below the guideline threshold of 4.5 cm. One of the most popular has been the height-indexing approach cited by the authors of this letter that was originally proposed by Svensson and Khitin,[4] and on which Acharya has also published.[5] I will only mention that height-indexing has not achieved a determinative role in the guidelines in the 18 years that have passed since it was proposed.

It is also important to remind readers that Idrees and colleagues analyzed patients in whom the enlarged aorta was a secondary or incidental feature and who had another clear indication for open heart surgery. I suggest that drive-by resection of aortas <4.5 cm clears a lower bar than aortic resection done as the primary indication for operation. I will also remind readers that Idrees and colleagues justified operating outside guidelines based entirely on overall outstanding results, the great majority of which were in patients done within guidelines. Quoting myself, "While it indirectly implies that risk is low, the benefit side of the equation can only be addressed by comparing long-term outcomes in the <4.5 cm subgroup to similar patients untreated."[3]

Finally, the authors argue for "89-fold increased risk of dissection" in aortas that are 4.0 to 4.5 cm, citing Paruchuri and colleagues.[6] In that rather curious manuscript ("Ours is not a typical study") the authors combine 2 completely unrelated clinical series and "apply a commonsense statistical approach." Without belaboring the commonsense statistics, suffice it to say that the 89-fold increase applies to a ratio of relative risks, not an absolute risk. Furthermore, they conclude "To recommend surgery at smaller sizes [<4.5 cm] would dangerously—and unnecessarily—expose individuals with minimal risk of dissection to the small but real risk of open-heart surgery. Vigilance should be augmented from the point that an aorta reaches 4.5 cm, with periodic imaging and risk factor modification (blood pressure control)."

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