The author reported no conflicts of interest.

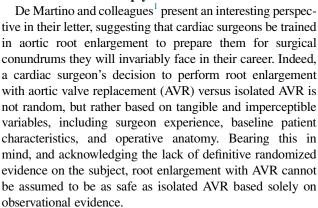
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 Antunes MJ. Commentary: aortic root enlargement, a useful and reproducible way to a larger prosthesis. J Thorac Cardiovasc Surg. 2020;160:924-5.

https://doi.org/10.1016/j.jtcvs.2020.10.143



REPLY: FACT OR
FICTION: THE BENEFIT
OF AORTIC ROOT
ENLARGEMENT
DURING AORTIC
VALVE REPLACEMENT
Reply to the Editor:



In their study of 53 patients, Celiento and colleagues² found enlargement of the aortic annulus with AVR to be associated with an actuarial survival of 37% at a mean follow-up of 8.9 years. Tam and colleagues³ reported the safe addition of root enlargement to isolated AVR in terms of early mortality (root replacement with AVR vs isolated AVR: 2.0% vs 2.1%; P = 1.00) and late mortality (73.1% vs 75.4%; P = .17). Despite rigorous propensity matching, however, their data remain observational and thus must be interpreted in the context of important limitations. An environment of clinical and personal equipoise cannot be assumed in observational studies. Surgeons performing root enlargement are typically more experienced, and treatment allocation and performance biases are important hidden confounders. Preoperative aortic valve area and annular size are other important variables influencing the choice of technique, and in the absence of echocardiographic data, as in the study of Tam and colleagues, it is difficult to state whether root enlargement was performed only in patients who needed it for the placement of a larger valve. Other factors that may have influenced the choice of

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operation include patient activity level, age, sex, and left ventricular function. For instance, the risk-to-benefit ratio of root enlargement would be more acceptable in a younger patient with a long life of vigorous physical activity ahead compared with an elderly, sedentary patient. As Bortolotti and colleagues remark, root enlargement itself is a heterogeneous procedure, and the observations of Tam and colleagues could not factor this in. Based on the current evidence, considering root enlargement with AVR to be associated with similar outcomes as isolated AVR is at best a hypothesis.

Although every effort must be made to avoid significant patient–prosthesis mismatch in AVR, the addition of root enlargement can lead to important complications and requires experience and careful planning. Only randomized allocation of sufficient number of patients to root enlargement with AVR and isolated AVR groups can allow equal baseline distribution of known and unknown confounders. Thus, it must be reiterated that it is only under these conditions that differences in outcomes between the groups can be attributed to true treatment effect and conclusions can be drawn. Until such evidence is available, each patient requires careful subjective and objective assessment to guide the choice of operation.

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