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degeneration in patients with BAV after supracoronary graft repair.

In our opinion, replacing the NC sinus in every patient with BAV is not justified. One must be selective, and the data to guide these decisions continue to evolve. Careful reporting of the histopathology of resected aortic segments would improve our understanding of the aortic root structure in these patients. Furthermore, novel imaging markers, such as the metabolic or biomechanical properties of the aortic wall by 4-dimensional flow magnetic resonance imaging or positron emission tomography magnetic resonance, may aid in identifying those patients with a vulnerable aorta who may benefit from a prophylactic partial root repair. For now, the decision to replace none, part of, or the entirety of the aortic root remains part of the art and craft of aortic surgery.

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UNDERSTANDING WHY ARE WE DOING WHAT WE ARE DOING

Reply to the Editor:

I agree with Dr Pradegan and colleagues¹ that replacement of the non-coronary sinus at the time of separate valve and supracoronary ascending aortic replacement is a useful technique. We and others have used it

selectively for many years and would add that the tongue of graft into the noncoronary sinus is also particularly useful when implanting a bioprosthetic valve. Such a tongue of graft can simplify reoperation for structural valve deterioration by affording the surgeon the option of extending a standard “hockey stick” opening in the neo-aorta past the neo-sinotubular junction to improve access to explant the degenerate prosthesis without disrupting the proximal suture line.

But does it need to be done? The data from Milewski and colleagues² as well as our earlier study³ and that of as well as that of Peterss and colleagues⁴ referenced by Dr Pradegan indicate that progressive dilatation of the noncoronary sinus occurs extremely rarely, if at all. Dr Pradegan argues that “an isolated removal of NCS [noncoronary sinus]... reduces the need of late reoperation for aneurysmal recurrence.” Although surely such intervention must eliminate the potential for such dilatation, the clinical data indicate that the risk of aneurysmal recurrence is essentially zero regardless of whether the noncoronary sinus is replaced. How then can one say that the need has been reduced?

There is a logical fallacy here. Dacron cannot become aneurysmal. True. The noncoronary sinus can be replaced with Dacron. True. Therefore, dilatation of the noncoronary sinus can be prevented by replacing it with Dacron. True. So what’s the problem?

Prophylactic procedures are all about balancing the risk of the treatment and the risk of the disease. Inattention to the latter is, in my opinion, just what has led to an overly aggressive approach to ascending aortic replacement in the setting of bicuspid aortic valve “even in the presence of a seemingly normal aorta”⁵ with enormous clinical implications. Indeed, total pancreatectomy would eliminate the potential for developing pancreatic cancer—but this is not an argument for prophylactic Whipple operations. The validity of the statement that the risk can be reduced by intervention depends on the probability of the threat. In our study, replacement of the noncoronary sinus was performed in less than 10% of cases³ and in a subsequent review of more contemporary experience from the same institution in less than 5% of cases.⁶

I do not mean to trivialize the argument or present myself as a linguistic nit-picker, but our language influences our thinking. The way we frame questions impacts our conclusions. Let’s be sure we really understand why we are doing what we are doing and recognize the evidence base supporting it—or the lack thereof.

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TOTAL ARCH REPLACEMENT FOR REPAIR OF PORCELAIN AORTA

To the Editor:

There is no doubt that surgery of a porcelain aorta (PA) is a surgical challenge, and I read the article by Jacob and colleagues¹ with great interest. The authors cross-sawed the severely calcified ascending aorta with an oscillating saw and replaced its proximal part with a Dacron graft after drilling multiple holes in the calcified distal aorta to allow suturing. Even if the technique described can be an alternative in the elderly, especially when the entire aorta is calcified, I would like to remind the community of our previous publication,² especially because neither Jacob and colleagues¹ nor the editorial commentary mentioned it in their comments.^{1,3} In this report, we had already indicated that calcification of the proximal aorta most frequently ends just below the left subclavian artery, making a complete aortic arch feasible.² This is especially characteristic for younger patients or those with radiation-related calcifications (Figure 1). The figures provided by Jacob and colleagues¹ demonstrated exactly the same, namely, that the PA was limited only to the ascending aorta and aortic arch. The authors reasoned their approach with abandonment of a “major aortic surgery,” but would a complete arch replacement performed using sophisticated methods of cerebral perfusion have been more complex than a sole ascending aorta replacement for which a deep hypothermia with 45 minutes of circulatory arrest was needed? On the contrary, as

FIGURE 1. Volume rendering technique reconstruction of contrast-enhanced computed tomography angiography scans of a 63-year-old male patient demonstrating a typical extent of calcification in proximal PA. The demonstrated patient was one among several who underwent complete root and arch replacement for aortic valve defect combined with a PA, reported in detail by Urbanski and colleagues.²

demonstrated in our previous study: A complete arch replacement can be performed under mild-to-moderate hypothermia, without any interruption of cerebral perfusion and any intraluminal manipulations on the supra-aortic arteries (insertion of perfusion catheters can be avoided when unilateral cerebral perfusion is used) and within a total cerebral perfusion time of less than 45 minutes, which is usually necessary for performing 4 anastomoses with a non-calcified arterial wall.² Moreover, the atherosclerosis of the proximal aorta (resulting in a rough inner aortic wall, which is clearly visible in the figures provided by Jacob and colleagues) has been recognized for decades as one of the main sources of cerebral embolism⁴; therefore, a complete arch replacement minimizes the risk of late neurologic complications, which was zero during a 45-month follow-up-duration in our study.² I am convinced that surgical therapy in relatively young patients should not only aim for operative survival but also focus on improvement of the late results and the feasibility of any aortic surgeries in