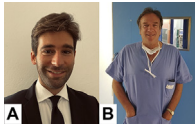


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REPAIR OR REPLACE THE AORTIC ROOT: THE ETERNAL UNSOLVED DILEMMA



To the Editor:

We read with interest the paper by Urbanski and colleagues¹ reporting their long-term outcomes after anatomic restoration of the aortic root. During an 18-year period, 669 patients underwent valve-sparing root repair using selective sinus replacement (including both bicuspid and tricuspid aortic valve) and were retrospectively revised. Excellent outcomes in terms of native aortic valve durability were found (>90% of freedom from aortic valve reintervention at 15 years of follow-up), with greater risk of developing moderate-to-severe aortic insufficiency only in patients with cusp prolapse/pseudoprolapse at the time of operation.

These results highlight the concept that sinuses of Val-salva (SoV) repair does not impact negatively native aortic valve function and root dimension. The authors affirm that “a similar approach strives for restoration of the patient’s anatomy and physiologic relationships between anatomic parts of the valvular apparatus.” The authors describe that 209 (31%), 234 (35%), and 226 (34%) patients underwent 1, 2, or 3 SoV replacements, respectively. However, they did not make a comparison analysis between these 3 groups, which might have revealed any clinical and echocardiographic differences in terms of preoperative characteristics and postoperative outcomes as well as postoperative aortic valve and root evolution. In fact, it is likely that patients requiring ≥ 1 sinus replacement will also require a coronary button reimplantation, with longer crossclamp times and a greater risk of coronary-related complications.

In addition to current cut-offs for aortic root replacement,² we think that intraoperative evaluation of the aortic wall and aortic symmetry should also play a role in defining the most suitable strategy. This has been previously stressed in bicuspid aortopathy, where isolated noncoronary sinus replacement can be a valid surgical alternative to David or Bentall procedures when asymmetric root dilation is present since 2007.³ In our most recent experience,⁴ patients

with bicuspid aortopathy undergoing ascending aortic replacement extended to noncoronary sinus receive a significant reduction in root diameter immediately after surgery, but the residual root does not dilate over time. Despite the small number ($n = 14$), patients who underwent an isolated aortic replacement extended to noncoronary sinus were not at increased risk of residual root dilation, and we observed reoperation at follow-up on the native aortic valve in only 1 case. Even if fluid dynamics studies are still missing to analyze the shear stress effect on aortic root walls, the histologic phenotype with an excess of collagen fibers surrounding coronary ostia in bicuspid valve might explain the preferential asymmetric dilation involving the noncoronary sinus and the major root stability achieved after isolated noncoronary sinus replacement.⁵

In conclusion, recent studies confirm that selective SoV replacement is a safe and feasible option in patients with dilated aortic root (regardless of aortic cusps number). However, we still need additional data to establish whether a less-invasive approach (limited to noncoronary sinus replacement instead of touching the coronary sinuses) is sufficient to prevent postoperative aortic valve or root disease.

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