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The Ross Procedure: A Rekindled Relationship



INVITED COMMENTARY:

Over the last few years, there has been renewed interest in aortic valve replacement with a living pulmonary autograft. The reason is simple: studies have shown that long-term survival after the Ross procedure mirrors that of the general population,¹ results that have not yet been achieved with prosthetic aortic valves. During the preceding decades, we also identified mechanisms of failure, such as autograft root, annular, or sinotubular junction dilation, as well as cusp prolapse. These conditions can occur in isolation or in combination.

Preoperative risk factors for failure were also identified, such as aortic valve regurgitation and bicuspid aortic valves, conditions that are often associated with a larger native aortic valve annulus and root or ascending aorta dilatation.

To prevent some of the known mechanisms of failure, such as cusp prolapse resulting from distortion of the root, a simple miniroot technique was often used that respected the integrity of the root and valve. Nonetheless, this technique was associated with progressive root enlargement, which gave rise to newer surgical approaches such as inclusion in the native aortic root or a Dacron (Invista, Kennesaw, GA) graft.² In patients with known risk factors, we therefore perform a Dacron-inclusion Ross procedure, which also supports the aortic annulus. We have thus moved away from using pericardial reinforcements of the annulus because this technique does not prevent annulus

dilatation in our experience, and it induces heavy calcifications with possible compromise of valve function. Moreover, it may also preclude future valve-sparing reinterventions, if needed.

In this issue of *The Annals of Thoracic Surgery*, Varrica and colleagues³ describe an original Preclude (W.L. Gore and Associates, Newark, DE)-wrapped Ross procedure in patients with a mean age of 15 years. With a mean follow-up period of 15 years, Varrica and colleagues³ showed satisfactory long-term results with no significant changes in aortic annular, aortic root, or sinotubular junction diameters at follow-up. The loose, tailor-made autograft wrapping seems to provide adequate support for the small and still growing neoroot of adolescent patients. Despite the promising outcomes, the results were obtained from a small cohort of 15 patients, and the study lacked a control group. We encourage Varrica and colleagues³ to continue follow-up beyond the second and third decade and to provide a larger patient cohort, as well as a more comprehensive analysis, to validate their findings further.

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