

Complex aortic root surgery at the University Hospital Center Zagreb

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KEYWORDS: valve sparing root replacement, Ross procedure, aortic valve repair.

CITATION: *Cardiol Croat.* 2024;19(11-12):459. | <https://doi.org/10.15836/ccar2024.459>

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The ideal substitute in young and middle-aged adults requiring aortic valve replacement (AVR) remains a matter of debate and poses a challenge for the heart team.

In patients with good-quality cusps and aortic root dilatation, valve-sparing root replacement (VSRR)-David procedure / Florida sleeve modification, has become a standard for preserving native aortic valve when aortic root replacement is needed. In young patients with aortic valve disease the Ross procedure offers a potential alternative to the prosthetic AVR.

We retrospectively identified all patients with aortic root dilatation, aortic insufficiency, aortic stenosis or mixed aortic valve disease who underwent David procedure, Florida sleeve modification, isolated aortic valve repair and the Ross procedure at our department between September 2022 and October 2024.

From 59 consecutive patients, 34 patients (57%) underwent David procedure, 4 patients (6%) Florida sleeve modification, 11 patients (18%) isolated aortic valve repair and 10 patients (16%) underwent the Ross procedure. There were no in-hospital mortalities.

In young patients with aortic valve disease, complications from prosthetic valves necessitate a better approach. In addition to alleviating the need for anticoagulation, the VSRR procedure and the Ross procedure offer a hemodynamic profile similar to the native aortic valve and carry a low risk of endocarditis. Contemporary advancements and experience acquired in complex aortic root surgery highlighted the importance of reinforcing the annulus and sinotubular junction of the pulmonary autograft. Thus, the Ross procedure was revived as an intriguing alternative to prosthetic AVR. Furthermore, recent data shows that the Ross procedure is the only AVR procedure that restores the life expectancy of the general population.¹

RECEIVED:
October 13, 2024

ACCEPTED:
October 31, 2024



LITERATURE |||||

1. El-Hamamsy I, Toyoda N, Itagaki S, Stelzer P, Varghese R, Williams EE, et al. Propensity-Matched Comparison of the Ross Procedure and Prosthetic Aortic Valve Replacement in Adults. *J Am Coll Cardiol.* 2022;79(8):805-815. <https://doi.org/10.1016/j.jacc.2021.11.057>