

Physician - Valvular Diseases and Surgery

[MSB-66]

Does Balloon Dilatation Increase the Need for A Permanent Pacemaker in Sutureless Aortic Valve Replacement?

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Objective: This study aimed to present the results of balloon dilatation in sutureless valves considering the temporary and permanent need for a pacemaker.

Methods: Thirty-eight patients (27 females, 11 males; mean age: 69.42 ± 4.85 years; range, 61 to 82 years) who underwent surgical aortic valve replacement with a sutureless aortic valve bioprosthesis between January 2019 and June 2024 and received balloon dilation at 4 atm (standard atmosphere) pressure for 30 sec during the procedure were retrospectively evaluated. Demographic data, preoperative and postoperative echocardiographic data, and postoperative follow-up data of the patients were collected.

Results: On preoperative echocardiographic evaluation, the mean aortic root diameter was 20.99 ± 2.24 mm, the ejection fraction was $59.29 \pm 9.57\%$, and the mean preoperative aortic valve gradient was 38.08 ± 7.31 mmHg. Isolated aortic valve replacement was performed in 22 (57.9%) patients, concomitant coronary bypass was performed in 14 (36.8%) patients, and ascending aorta replacement was performed in two (5.3%) patients. A small valve was inserted in six patients, a medium valve in 13 patients, a large valve in 17 patients, and an extra-large valve in two patients. The mean postoperative aortic valve gradient was 11.52 ± 3.36 mmHg. After surgery, three (7.9%) patients were transferred to the intensive care unit with temporary pacemakers. Permanent pacemaker implantation was required in three (7.9%) patients due to complete atrioventricular block.

Conclusion: Although the clinical results with sutureless aortic bioprostheses are satisfactory, the use of balloon dilatation increases the need for permanent pacemakers.

Keywords: Aortic, balloon, pacemaker, sutureless.

References

1. Bilkhu R, Borger MA, Briffa NP, Jahangiri M. Sutureless aortic valve prostheses. *Heart* 2019;105(Suppl 2):s16-20. doi: 10.1136/heartjnl-2018-313513.
2. Charles Blouin M, Bouhout I, Demers P, Carrier M, Perrault L, Lamarche Y, et al. Tackling the issue of high postoperative pacemaker implantation rates in sutureless aortic valve replacement: Should balloon inflation be removed from the implantation method of the perceval prosthesis? *J Heart Valve Dis* 2017;26:247-54.
3. Vogt F, Moscarelli M, Nicoletti A, Gregorini R, Pollari F, Kalisnik JM, et al. Sutureless aortic valve and pacemaker rate: From surgical tricks to clinical outcomes. *Ann Thorac Surg* 2019;108:99-105. doi: 10.1016/j.athoracsur.2018.12.037.
4. Mikus E, Calvi S, Tavazzi L, Brega C, Tripodi A, Pin M, et al. Pacemaker need after sutureless aortic valve replacement: The role of the learning curve. *J Cardiovasc Med (Hagerstown)* 2021;22:133-8. doi: 10.2459/JCM.000000000001095.