Authors have nothing to disclose with regard to commercial support.

Authors have nothing to disclose with regard to commercial support.

Jeremy Robbins, MD
Eli Gelfand, MD, FACC
Division of Cardiovascular Disease
Beth Israel Deaconess Medical Center
Harvard Medical School
Boston, Mass.

References

1. Temporary aortic valve tested. *JAMA*. 1966;198:53.
2. Berger RL, McCormick JR, Stetz JD, Klein MD, Ryan TJ, Carr J, et al. Successful use of a paracorporeal left ventricular assist device in man. *JAMA*. 1980;243:46-9.
3. Berger RL. Nazi science—the Dachau hypothermia experiments. *N Engl J Med*. 1990;322:1435.

<http://dx.doi.org/10.1016/j.jtcvs.2016.04.046>

TECHNICAL CHANGES IN THE IMPLANT OF SUTURELESS AORTIC VALVES: THE SENSE OF BEING PIONEERS

To the Editor:

Although the Perceval sutureless aortic valve (LivaNova PLC, London, UK) is currently routinely used in many European cardiac surgery centers,¹ concerns remain regarding the need for postoperative permanent pacemaker implantation.² In this regard, we read with great interest the article by Yanagawa and colleagues,³ who presented a simple technical modification to lower the rate of pacemaker implantation in patients undergoing aortic valve replacement with the Perceval sutureless bioprosthesis.

From 2010 to date, we have implanted 380 Perceval valves, with 10% of patients requiring postoperative pacemaker implant up to August 2015. Since then, we have implemented several changes trying to refine the implant technique. In particular, attention to the appropriate depth of suture placement in relation to the annulus is critical to ensure adequate valve functioning without additional risks for the conduction system. These sutures are placed at the nadir or midpoint of the leaflet insertion line. Use of a semi-circular needle facilitates the placement of the guiding sutures, beginning no more than 2 mm below the annulus and exiting approximately 2 mm above the annulus. Passing these sutures from below to above the annulus was found to be helpful to control suture insertion depth. Inappropriately deeper placement of the guiding sutures into the left ventricular outflow tract carries the risk of damage to the

conduction system after valve placement. During valve deployment, special attention should be paid to the angle of the holder with regard to the seating of the valve in the noncoronary sinus. Inappropriate tension of the guiding sutures may cause the valve to be seated too deeply, particularly at the commissure between the right and noncoronary cusps, with potential for damage to the underlying conduction system.

With the adoption of these measures, since September 2015 only 1 additional patient (3.3%) has required pacemaker implantation postoperatively in our institution. Our comment is intended to help centers starting to implant the Perceval valve, showing that the unique position of being pioneers in the use of a new device should contribute to the standardization of the technique by accurate monitoring of the results.

Theodor Fischlein, MD, PhD
Angelo M. Dell'Aquila, MD
Giuseppe Santarpino, MD, PhD
Department of Cardiac Surgery
Paracelsus Medical University
Nuremberg, Germany

References

1. Fischlein T, Meuris B, Hakim-Meibodi K, Misfeld M, Carrel T, Zembala M, et al. The sutureless aortic valve at 1 year: a large multicenter cohort study. *J Thorac Cardiovasc Surg*. 2016;151:1617-26.
2. Vogt F, Pfeiffer S, Dell'Aquila AM, Fischlein T, Santarpino G. Sutureless aortic valve replacement with Perceval bioprosthesis: are there predicting factors for postoperative pacemaker implantation? *Interact Cardiovasc Thorac Surg*. 2016; 22:253-8.
3. Yanagawa B, Cruz J, Boisvert L, Bonneau D. A simple modification to lower incidence of heart block with sutureless valve implantation. *J Thorac Cardiovasc Surg*. March 10, 2016 [Epub ahead of print].

<http://dx.doi.org/10.1016/j.jtcvs.2016.03.035>

THE TIPPING POINT: WHEN SHOULD A MODIFICATION BECOME THE STANDARD TECHNIQUE?

Reply to the Editor:

We appreciate the commentary by Fischlein et al¹ from one of the largest single-center experiences with the Perceval valve (LivaNova, Milano, Italy) and the authors of several important publications, including a recent large multicenter cohort study.² Similar to our experience, they also found that deeper placement of the guiding sutures into the left