

Predicting the ideal Valve Size during Aortic Valve Replacement with Rapid Deployment Bioprosthetic Valves. Is Intraoperative Transesophageal Echocardiography reliable?

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Abstract

Sutureless/rapid deployment valves provide surgeons with a new tool for aortic valve replacement (AVR) therapy, which can simplify the procedure. A main concern being the development of a paravalvular leak. We retrospectively reviewed our Aortic Valve Replacement database, were able to identify 25 rapid deployment aortic valves (INTUITY Valve System, Edwards Life Sciences LLC, Irvine, Calif) that had documented intraoperative Transesophageal Echocardiographic Annular measurements. All valves were implanted in the Aortic position. In this cohort, only patients that had their native aortic valve replaced either isolated or as part of any additional procedure were included. Patients that underwent Intuity valve implantation for Redo Aortic valve replacement were excluded from this study. After review of 25 patients who underwent rapid deployment valve implantation in the aortic position, 36% of patients had the same size valve as the measured aortic annulus, 48% of patients had a valve implanted that was 1 mm different, and 16% of patients had 2 mm difference. The mean annular size based on intraoperative TEE was 22.4 mm (range: 21-28 mm). The mean valve size that we implanted was 23.3 mm (range: 21-27 mm). No statistically significant difference between the mean annular measurement and the valve size selected (0.9 mm , $p = 0.8$) were found. TEE is perhaps remains as one of our most important tool to further enhance valve sizing and appropriately guide one through a proper and safe deployment.

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Intuity Valve Sizing TEE.docx available at <https://authorea.com/users/322282/articles/451414-predicting-the-ideal-valve-size-during-aortic-valve-replacement-with-rapid-deployment-bioprosthetic-valves-is-intraoperative-transesophageal-echocardiography-reliable>

Age	
➤ 55-75 (68.3)	
Diagnosis	
AS	11/25
AS+CAD	9/25
AI+ATAA	2/25
AS+MR	1/25
AI+CAD	1/25
Approach	
Sternotomy	21/25
Upper sternotomy	2/25
Rt thoracotomy	2/25
Procedure	
Isolated AVR	11/25
AVR+CABG	11/25
AVR+MVR	1/25
AVR+ Ascending root replacement	2/25
Outcomes	
30 days Mortality	0/25
30 days stroke	0/25
Major bleeding	0/25
Valve thrombosis	0/25
Valve explant	0/25
Major post op PVL	0/25
Trace post op PVL	5

