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Abstract 17048: Fifteen Year Follow-Up After Aortic Root Replacement with Stentless Biological Valve Conduits: Homograft versus Freestyle

Sandro Sponga, Francois Dagenais, Jean Perron, Pierre Voisine, Vincent Tchana-sato, Daniel Doyle and Siamak Mohammadi Originally published 26 Mar 2018 | Circulation. 2011;124:A17048

Abstract

Objectives: The choice of biologic aortic valve substitute for aortic root replacement is multifaceted. Herein, we report the compared long-term outcome of two type of stentless biologic valve conduits namely homograft and Fresstyle bioprosthesis used to replace the aortic root and followed prospectively up to 15 years.

Methods: Between 1993 and 2011, 188 patients underwent elective primary aortic root replacement with a stentless bioprosthetic aortic valve with (n=38) or without (n=150) CABG. Among these patients, 98 Freestyle and 90 homografts were implanted. All clinical and echocardiographic data were collected prospectively. Mean overall follow-up was 8.5±3.9 years (range: 0.1-15). It was 8.4±3.8 years for Freestyle, and 8.5±4.0 years for homografts, and complete in all patients.

Results: Patient characteristics were comparable between groups except for age and number of pre-operative diagnosis of endocarditis (p<0.0001) and moderate/severe aortic insufficiency (p<0.008). The mean age was significantly higher in the Freestyle (65.4±8.5years) compared to homograft (48.1±13.0 years) group (p < 0.0001). Hospital mortality was comparable between the Freestyle and the homograft group (5.1% versus 7.8%, p=0.6). Ten and 15-years survival was 66.7% and 53.0% in the Freestyle versus 89.9% and 69.1% in the homograft group, respectively (p<0.001). Freedom from reoperation due to structural valve deterioration (SVD) at 10 and 15 years was 98.8% and 92.7% for the Freestyle compared to 87.4% and 68.6% in the homografts group, respectively (p=0.009). Independent risk factors for reoperation for SVD were age (OR:1.1, CI: 1.02-1.1, p=0.002), and use of homograft (OR:7.7, CI: 1.7-35.5, p=0.008). Independent risk factors for poorer long-term survival were age (OR 1.2, CI: 1.1-1.3, p=0.001), and length of hospital stay (OR 2.9, CI: 1.5-3.8, p=0.0003). Mean pressure gradient at the end of follow-up was 8.5±6.2 mm Hg for the Freestyle and 9.9±9.1 mm Hg for the homograft patients.

Conclusion: The choice of stentless biologic valve for aortic root reconstruction have no influence on early and long-term survival. The use of biologic root reconstruction with Freestyle bioprostheses provides a better freedom from reoperation due to SVD compared to homografts.

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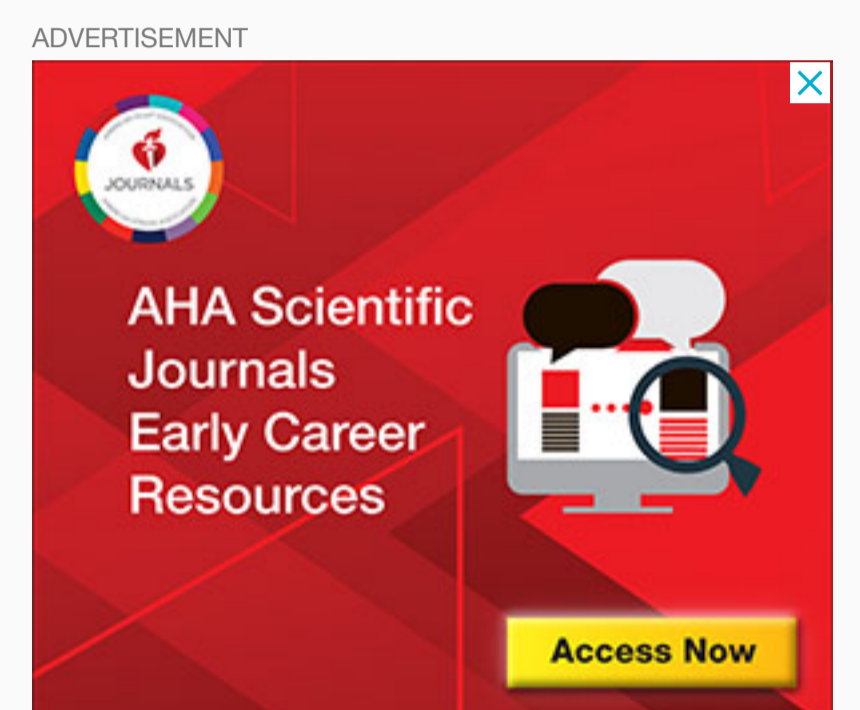
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November 22, 2011 Vol 124, Issue suppl_21



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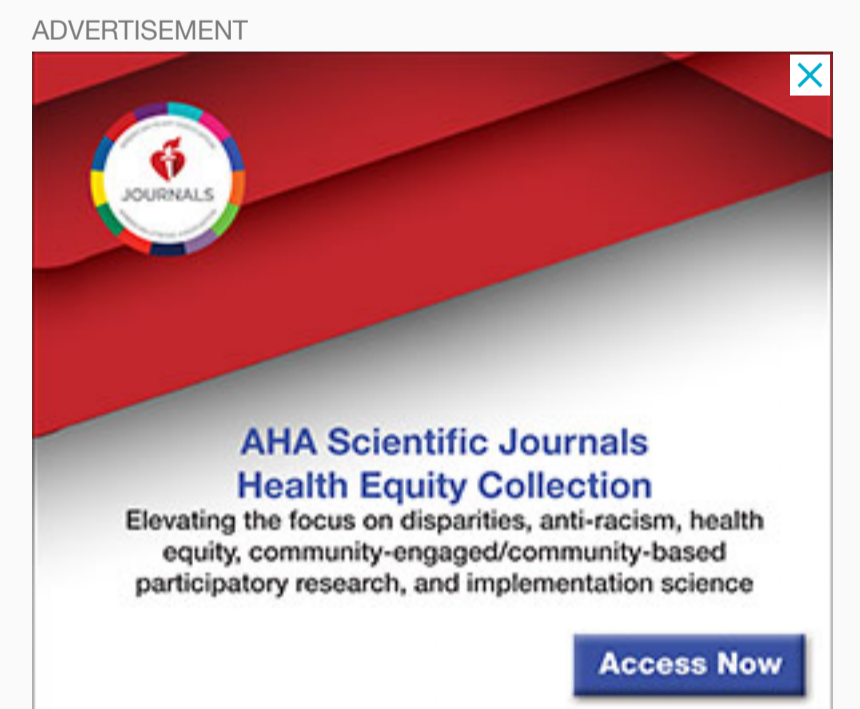
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Originally published March 26, 2018

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Keywords

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