International Journal of Medical and Health Research
ISSN: 2454-9142; Impact Factor: RJIF 5.54
Received: 22-05-2019; Accepted: 23-06-2019
www.medicalsciencejournal.com
Volume 5; Issue 7; July 2019; Page No. 165-166

Residual post-operatvive trans valvular gradients post bioprosthetic aortic valve replacement an unanswered tale

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Abstract
An observation was made over a period of two years, that the patients who underwent aortic valve replacement with bioprosthetic valve had post-operative moderate trans valvular gradients with NYHA CLASS II.
Observation: There were total of 30 patients who underwent bioprosthetic aortic valve replacement over a period of 2 years. All patients were above 50 years. Mostly St.judes and Perimount bioprosthetic valves were used. In the post-operative period it was observed that 5 patients in their first post-operative day, developed hemodynamic unstabiliity. Post-operative echo was done it revealed moderate to severe stenosis. Patients were managed conservatively and discharged and kept on follow up. On follow up ECHO it was seen that there was moderate stenosis in all 5 patient and out of other 25 patient, it was observed that 6 patients had moderate stenosis with NYHA class II.
Conclusion: Bioprosthetic aortic valve replacement was standard treatment, but in patients it was observed that they remained in moderate stenosis and NYHA class II in early post-operative period and follow up. Reason remained unidentified.
Limitation
As it is an institutional study and small number of patients were included. More over duration of study was short over period of 2 years.

Keywords: very preterm infants, Intraventricular hemorrhage, umbilical cord milking, early cord clamping, blood transfusion

Introduction
Aortic valve replacement is the treatment of choice for patients with severe symptomatic aortic stenosis [1]. Surgical aortic valve replacement (SAVR) reduces morbidity and mortality related to aortic stenosis and has been the procedure of choice for younger, low to intermediate risk patients, typically defined by the Society of Thoracic Surgeons predicted risk of mortality (STSPROM) score of 8% or less. 1 Because such patients require lifelong treatment with oral anticoagulants [2]. Use of mechanical valves has decreased and most SAVR procedures now use bioprosthetic valves. Crucial to this decision is mortality after SAVR and structural valve deterioration resulting in heart failure, with possible need for a second valve replacement It has sometimes been observed that if there are many solutions to a problem, then it is probable that none is exactly correct. Such is the circumstance for young, adult-sized patients facing surgical aortic valve replacement (AVR). For their much younger and smaller counterparts, in whom somatic growth is incomplete, the pulmonary autograft (Ross procedure) is certainly the correct solution [3]. At the other end of the age spectrum, for patients >70 years of age, a stented bioprosthesis is virtually always the best choice unless high surgical risk would favor transcatheter AVR.1 For patients <60 years of age, a mechanical prosthesis is appropriate, although current American College of Cardiology/American Heart Association guidelines of the management of patients with valvular heart disease include the following hedge: "A bioprosthesis is recommended in patients of any age for whom anticoagulant therapy is contraindicated, cannot be managed appropriately, or is not desired [3]. Therein lies the rub: Virtually no young adult desires anticoagulation, and adherence to complex medication regimens in this age group is notoriously poor, rendering the "appropriate" management of vitamin K antagonist (VKA) medication dosage problematic [4]. Furthermore, a substantial number of young, adult-sized patients facing AVR are female and may wish to avoid VKA during childbearing years, despite recent reports describing favorable outcomes in women with carefully supervised VKA-based anticoagulation during pregnancy [5]. Thus, for young, adult-sized patients (and their parents), the contemplation of which valve is the best, or least worst, choice is based on multiple factors, with the final selection based on the combination of risk assessment and lifestyle preferences unique to each young patient.

Observation
There were total of 30 patients who underwent bioprosthetic aortic valve replacement over a period of 2 years. All patients were above 50 years. Mostly St.judes Epic and CE Perimount valve were used. In post-operative period it was observed that 5 patients in their first post-operative day, developed hemodynamic unstabiliity. Post-operative echo was done, it revealed moderate to severe stenosis. Patients were managed conservatively and discharged and were kept on follow up. Sizes of valve which were used included 21mm St.judes Epic in 3 patients, 19 mm size in single patient, CE Perimount 21 mm sized valve was there in single patient. On follow up ECHO it was found that there was moderate stenosis in all 5 patients and in remaining 25 patients, it was observed that 6 patients had moderate stenosis with NYHA class II. There was no evidence of thrombosis or degeneration of valve despite which gradients

were observed. Amongst these most patients were class II symptomatic. It was hard to understand why gradient persisted, as such no patient was overweight and effective orifice area index was near normal in all patients.

Conclusion

Bioprosthetic aortic valve replacement was standard treatment, but in patients it was observed that they remained in moderate stenosis and NYHA class II in early post-operative period and follow up. Reason remained unidentified. It need further evaluation and infer to come to the conclusion why these gradients persisted post operatively.

Limitation

As it is a institutional study and small number of patients were there and duration of study was over period of 2 years only.

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