

P28. Mitral Valve Replacement With The Quattro Stentless Pericardial Bioprosthesis: Mid-term Clinical And Echocardiographic Follow-up

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OBJECTIVES: The Quattro stentless mitral valve bioprosthesis is sutured to both annulus and papillary muscles heads to preserve the sub-valvular apparatus. We report our mid-term results.

METHODS: Seventy-six patients received Quattro bioprosthesis (1998-2005). Competing-risks methodology determined time-related prevalence of 3 mutually exclusive end-states: death, prosthesis replacement, survival without reoperation. Serial echo data (n=282) were collected and regression models were used to model longitudinal progression of prosthesis orifice area (MVA), peak (PG) and mean (MG) gradients, regurgitation (MR) and ejection fraction (EF) over time.

RESULTS: Mean age was 37 years, 56 (74%) were females, and mean NYHA functional class was 2.5. Majority (65%) had underlying rheumatic etiology and 38 (50%) had undergone prior mitral surgery (18 repair, 20 replacement). Competing-risks analysis predicted that 5-years from Quattro implantation, 13% had died without subsequent replacement, 23% underwent prosthesis replacement, and 64% remained alive without reoperation. Overall, 20 valves were explanted: endocarditis (6), degeneration/structural failure (8), malfunction without degeneration (6). Prior mitral surgery was risk factor for explantation (p=0.05). Five-year freedom from endocarditis was 92% and from bleeding/thrombo-embolic complications 100%. Serial echo data showed progressive increase in PG and MR, decrease in MVA and stable MG and EF.

CONCLUSIONS: In a fairly young population, Quattro longevity was limited by relatively high endocarditis risk and reoperation requirement. Despite comparatively low structural degeneration rate; malfunction without structural changes was frequent cause for prosthesis replacement. This may be due to unpredictable geometric ventricular adaptation to prosthesis with subsequent development of sub-valvular stenosis or prosthesis insufficiency due to retraction of coaptation line.

ECHO follow-up

Variable	1 year	5 years	8 years	p value
MR	0.7	1.3	2.1	<0.0001
PG	13.3	14.9	16.3	0.02
MG	6.7	6.9	7	0.6
MVA	2.2	1.8	1.5	<0.0001
EF	58	59	60	0.38

