ABSTRACT NO. 20

MINIMALLY INVASIVE MITRAL VALVE SURGERY WITHOUT AORTIC CROSS CLAMP: THE NASHVILLE VETERANS AFFAIRS EXPERIENCE

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Background: Through collaborative efforts with Vanderbilt University Medical Center we developed a technique for mitral valve surgery through a 5 cm right antero-lateral thoracotomy without aortic cross-clamp. We report the Nashville Veterans Affairs Medical Center experience.

Methods: The cardiac surgery operative log was used to identify all patients who underwent minimally invasive mitral valve surgery between May 2007 and December 2007. A database was created to record age, New York Heart Association (NYHA) class, ejection fraction (EF), and previous coronary artery bypass (CABG), cardiopulmonary bypass (CPB), and fibrillatory arrest times. Under cold fibrillatory arrest without aortic cross-clamp, mitral valve surgery was performed with cardiopulmonary bypass instituted through femoral or axillary cannulation (87% vs. 13% respectively). Concomitant procedures included MAZE (47%) and patent foramen ovale closure (27%). Summary data are presented as mean ± SD.

Results: We identified 15 male veterans with an age of 61±8 years who underwent minimally invasive mitral valve repair or replacement (40% vs. 60% respectively). Mean NYHA class was 3.1±0.3, and mean EF was 42.3±14.1. Four patients (27%) had an EF < 25% and five patients (33%) had a previous CABG. Thirty-day mortality was 6.6% (one patient died due to a ruptured AAA). Mean hospital stay was 9.3±5.7 days. Fibrillatory arrest, CPB, and operative times, were 96±31, 125±26, and 217±29 minutes respectively. No patient required conversion to sternotomy. There was no incidence of stroke, low cardiac output syndrome, renal failure requiring hemodialysis.

Conclusions: This simplified technique of minimally invasive mitral valve surgery is safe and reproducible. Fibrillatory arrest without aortic cross clamping in a perfused empty heart provides good myocardial protection and does not increase the risk of stroke or low cardiac output. It may be particularly useful in higher risk veteran patients in whom sternotomy with aortic clamping is less desirable.