Reinforced Aortic Root Reconstruction in Type A Aortic Dissection: A Prospective Study

Background: Type A aortic dissection is a challenging surgical emergency associated with high morbidity and mortality. Many techniques have evolved to repair the dissected sinus segments and restore aortic valve dynamics. Herein, we evaluate the early outcome of a novel technique for reconstruction of dissected aortic root.

Methods: A prospective study was conducted on 300 patients to evaluate the early results of repair of dissected root in type A aortic dissection. The mean age was 59.65±8.52 years, and 76% of patients were males. All patients had four standard steps for aortic reconstruction: 1) commissural resuspension; 2) right coronary sinus reinforcement with pericardial and Dacron bands; 3) non-coronary sinus reinforcement using external Dacron patch; 4) circumferential inversion of adventitial layer of the root. Patients were followed up clinically, echocardiographically, and by CT scan.

Results: The in-hospital mortality was 8%. The mean cross-clamp time was 120±30 minutes, and circulatory arrest time was 25+10 minutes. Twenty-seven patients (9%) experienced postoperative complications, including bleeding and acute kidney injury. During a mean follow-up time of 48±12 months, there were no recurrent aortic dissection, aortic dilatation, pseudoaneurysm, or progression of aortic regurgitation during the entire study period.

Conclusions: This reconstructive technique technically is undemanding, feasible, safe, and durable with good early results. A larger cohort of patients with longer period of follow up should generate a more powerful evaluation of this technique.

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