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The Role of Aortic Root Remodeling with Annuloplasty for the Management of Patients with Connective Tissue Disorders

Background

Valve-sparing aortic root replacement is the operation of choice in selected patients with connective tissue disorders. Root reimplantation has traditionally been the approach of choice because it stabilizes the aorto-ventricular junction. In recent years, root remodeling with annuloplasty has emerged as an alternative that combines the benefit of aorto-ventricular junction stabilization and optimal aortic valve and root dynamics. To date, there are limited data on the role of root remodeling in patients with connective tissue disorders (1). The aim of this study is to examine the role of aortic root remodeling with annuloplasty on aortic valve function, reoperation and survival in patients with connective tissue disorders.

Hypothesis

We hypothesize that addition of an aortic annuloplasty (extra-aortic ring or suture annuloplasty) to aortic root remodeling will result in stabilization of the aorto-ventricular junction and a low incidence of recurrent aortic regurgitation and/or reoperation.

Methods

Using the AVIATOR registry, retrospective analysis of all patients with a diagnosis of connective tissue disorder (Marfan syndrome, Loeys-Dietz syndrome, Ehlers Danlos syndrome and Turner syndrome) will be performed. Long-term actuarial survival, freedom from reoperation and freedom from 2+ or greater aortic regurgitation will be assessed. In addition, mixed effect models will be used to evaluate changes in aortic annular diameters measured by echocardiography. We will seek to determine predictors of reoperation, recurrent aortic regurgitation or expansion of aortic annular diameters in these patients.



References

- (1) Kuniyama T, Aicher D, Rodioncheva S, et al. Outcomes after valve-preserving root surgery for patients with Marfan syndrome. *J Heart Valve Dis* 2012;21:615-22.
- (2) David TE, David CM, Manlhiot C, et al. Outcomes of Aortic Valve-Sparing Operations in Marfan Syndrome. *J Am Coll Cardiol* 2015;66:1445-53.