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Extent of Degenerative Changes in Ascending Aorta of Patients with Bicuspid Aortic Valve (BAV)—A Histopathological Study

PDF (Size: 1283KB) PP. 66-72 DOI: 10.4236/wjcs.2012.24014

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ABSTRACT

Objective: To find out, whether the degenerative process of ascending aorta is limited to the aortic sinuses only or is extending to mid and distal ascending aorta of Bicuspid Aortic Valve patients. **Method:** A prospective consecutive study on 25 patients of BAV (undergoing aortic valve with \pm ascending aortic surgeries) was conducted from 1st Jan 2010 to 30th Dec 2011. Morphological and anatomical data of root and ascending aorta were recorded from echocardiography and computed tomography angiography. Intra-operatively, aortic tissue biopsy taken from three sites: sinus, mid, and distal ascending aorta. Histological evaluation of the aortic wall was based on criteria adapted from Schlatmann and Becker and from de Sa *et al.* The presence and degree of the 5 variables of degeneration were studied: Linear regression and correlation were used to get relationship between histopathological scoring (HPE-T) and aortic diameter for each site of ascending aorta. **Results:** Significant linear relation was found between aortic sinus diameter and HPE T score with R value = 0.590 (p value 0.001) and variance of 37.5%. Analysis suggests that HPE T Score = $-5.139 + (0.188 \times \text{Ao. Sinus Diameter in mm})$. No significant linear relation could be established between mid and distal ascending aorta diameter and HPE T scoring. **Conclusion:** In BAV patient's, a definite relationship between degenerative changes of aortic media and aortic diameter was found and was limited up to the sinus level only. Thus, the study reinforces the thought of replacing aortic sinus too while dealing with aortic valve, even without significant dilatation. By this aggressive management of aortic root, progression of aortic dilatation or dissection can be prevented in bicuspid aortic valve patients.

KEYWORDS

Bicuspid Aortic Valve; Ascending Aorta; Degenerative Changes

Cite this paper

M. Kumawat, S. Choudhary, S. Talwar, V. Devagourou, M. Hotte, N. Makhija and R. Ray, "Extent of Degenerative Changes in Ascending Aorta of Patients with Bicuspid Aortic Valve (BAV)—A Histopathological Study," *World Journal of Cardiovascular Surgery*, Vol. 2 No. 4, 2012, pp. 66-72. doi: 10.4236/wjcs.2012.24014.

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