

Natural History of Ascending Aortic Aneurysms (40-50 mm): Impact of Bicuspid Aortic Valves

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Abstract

Background: Growth of ascending aortic aneurysms in bicuspid aortic valve (BAV) patients is controversial. Methods: To evaluate the natural history of medically treated ascending aortic aneurysms and the impact of BAV, 572 patients (104 pts BAV; 468 pts with tricuspid aortic valve(TAV) with 40-50mm ascending aortic aneurysms were followed prospectively in a dedicated thoracic aortic clinic. Results: Patients with BAV were younger (BAV: 56.5±10.6 vs. TAV: 66.9±9.9; p<0.0001) and less high blood pressure (BAV:54.4% vs. TAV:69.2%; p=0.01). Maximal ascending aortic diameter was significantly larger in BAV vs. TAV patients (46.5±2.3 vs. 45.2±3.0; p<0.0001). Mean follow-up was 3.9±2.5 years. Significantly more patients were operated during follow-up for the ascending aorta or the aortic valve in the BAV group (BAV:32.7% vs. TAV:7.3%; p<0.0001). Only one patient with TAV was operated emergently for an acute aortic syndrome. Operative mortality was 0% and overall mortality was 10.3%. Five- and ten-year freedom from ascending aortic aneurysm progression >2 mm was comparable for both groups BAV vs. TAV (86.5% vs. 83.9%) and (36.0% vs. 29.4%); (log rank=0.51). Five- and ten-year survival for both groups was BAV vs TAV (96.7% vs 96.6%) and (91.2% vs 90.8%) years (p=0.94). Conclusions: Medically treated 40-50mm ascending aortic aneurysms show slow growth rate comparable for BAV and TAV patients. Freedom from acute aortic-related events and survival are very high in both BAV and TAV patients.

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