Should root replacement with aortic valve-sparing be offered to patients with bicuspid valves or severe aortic regurgitation?

To examine the results of root replacement with aortic valve-sparing in patients with bicuspid aortic valve (BAV) or severe aortic regurgitation (AR). Between 2000 and 2009, 102 patients (mean age 47±17.5 years) underwent aortic valve-sparing procedures for ascending aortic aneurysm or dissection. Patients were assigned to three different groups according to the aortic valve pathology: BAV (n=11), tricuspid aortic valve (TAV) with AR less than severe (n=51), and TAV with severe AR (n=40). Remodelling of the aortic root was performed in 28 (27.5%) patients, reimplantation of the aortic valve in 74 (72.5%) and a concomitant cusp repair in 30 (29.4%). All patients were prospectively studied with annual clinical assessment and echocardiography. The overall actuarial 5-years’ survival was 97.8±1.5% without differences between the groups. Actuarial 5-years’ freedom from aortic valve-related re-operation was 92.2±3.2% in all patients, 100% in patients with a BAV, 98±1.9% in patients with a TAV and AR less than severe, and 82.7±7.5% in patients with a TAV and severe AR (p=0.07). The overall actuarial freedom from AR, which was more than mild at 5 years was 73.3±7.7%, being significantly (log-rank test: p=0.005) lower for patients presenting with TAV and severe AR (49.9±16.4%). The outcome in terms of survival is excellent for all patients.
after aortic valve-sparing operations. There is no significant difference in terms of re-operation between patients, who presented with BAV or TAV. Re-operation rates are higher for patients who presented with severe AR but these rates do not reach statistical significance. Hence, root replacement with aortic valve-sparing should be offered even in the presence of a BAV or severe AR.