

Image in cardiology

Surgical Treatment for Complex Coarctation of Aorta

Tratamiento quirúrgico de la coartación de aorta compleja

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Figure 1.

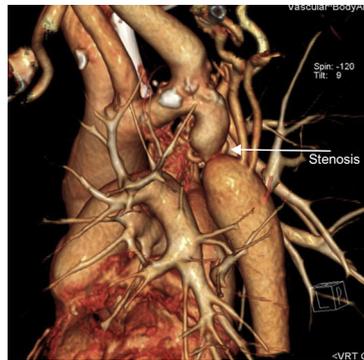


Figure 2.

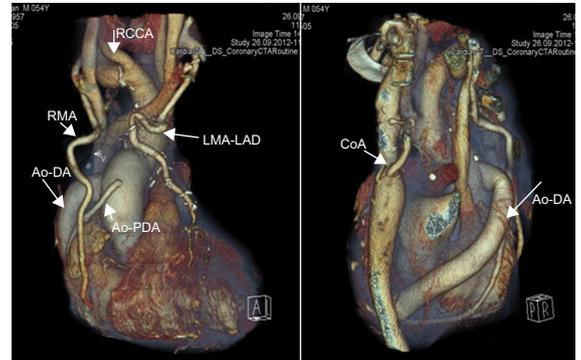


Figure 3.

A 54-year-old male patient was admitted due to exertional dyspnea and hypertension. The echocardiography indicated severely calcified bicuspid aortic valve stenosis. Unexpectedly, his chest X-ray showed obvious rib notching and typical 3 sign on aortic isthmus (Figure 1). The computed tomography angiography demonstrated coarctation of aorta (CoA) concurrent with hypoplasia of aortic arch distal to left subclavian artery (Figure 2). The coronary artery angiography showed 60% and 70% occlusion within right coronary artery and left anterior descending artery (LAD), respectively.

The procedure was done by median sternotomy under cardiopulmonary bypass. Firstly, the thoracic aorta behind pericardium was partially clamped and the end-to-side Dacron graft to thoracic aorta anastomosis was made. The graft was then inserted between inferior vena cava and right inferior pulmonary vein. Secondly, the left internal mammary artery (LIMA) was anastomosed with LAD and the posterior descending artery (PDA) was anastomosed with saphenous vein (SV). Then the heart was arrested and the calcified aortic bicuspid valve was replaced by mechanical valve. After de-airing, the heart was perfused to beat. Finally, the proximal part of the Dacron graft and saphenous vein were end-to-side anastomosed with ascending aorta. Post-operative computed tomography angiography demonstrated satisfactory repairs by posterior pericardial ascending-to-descending aortic bypass and coronary artery bypass (Figure 3).

Older patients with CoA are prone to other acquired heart diseases. Complex CoA will pose difficulty for the cardiac surgeon to tackle. Therefore, we aim to provide an effective option to simultaneously treat the complex CoA in order to make the cardiac surgeon aware of this method and improve the survival rates of patients.

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Available online 22 July 2014