Clinical vignette

Thirty-seven-year follow-up of a 'less known' aortic valve prosthesis

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A 60-year-old woman with anginal symptoms and effort dyspnoea was referred for coronary arteriography. She had a history of rheumatic heart disease and had aortic valve replacement 37 years ago in South Africa for aortic valve regurgitation. Now she was found to have moderately severe mitral valve stenosis with a calculated orifice of 1.2 cm² and good function of the mechanical aortic valve with a 30 mmHg gradient and no incompetence on echocardiography.

Chest X-ray and fluoroscopy during cardiac catheterization revealed a University of Cape Town (UCT) aortic prosthesis (Panels A and B) and aortography (Panel C) showed competent function.

The UCT aortic prosthesis was a modification of the lenticular mitral prosthesis by Barnard. It was first used in the early 60s and consisted of a fixed and mobile portion (Panel D). The fixed portion was a stainless-steel ring covered with Teflon cloth. It carried two arms, the one above projecting into the aorta and the one below projecting into the left ventricular outflow area, each ending in a small ring. The mobile portion was hemispherical on the ventricular aspect and cone-shaped on its aortic aspect, with flexible guide rods moving through the two rings and holding it in position. The first five patients with this aortic prosthesis with a follow-up of a few months were reported by Barnard et al. (Lancet 1963;2:856–859). In our patient, the UCT aortic prosthesis was functioning perfectly well 37 years after implantation.

Panel A. Cranial PA view of the valve.

Panel B. LAO view of the valve.

Panel C. Aortography without any valve incompetence.

Panel D. Fixed portion (left), mobile portion (middle), and assembled prosthesis (right) (reprinted from Barnard C, Shrire V, Goosen C. Total aortic valve replacement. Lancet 1963;2:856–859, copyright with permission from Elsevier).