Drug Trends in Cardiology

Cryoballoon ablation for atrial fibrillation is now possible in South Africa

Dr Razeen Gopal, head of the Mediclinic Panorama electrophysiology laboratory, recently discussed various successful procedures performed in their cardiac unit over the past three years that have radically changed the lifestyle of patients with serious cardiac conditions. ‘Over 1 000 people, including children, have benefitted from the advances in complex ablation procedures as the unit has become established as a centre of excellence, keeping pace with what is happening in the rest of the world’, he said.

The first person to undergo cryoballoon ablation for atrial fibrillation was 35-year-old Hein Pieterse from Malmesbury, who suffered from paroxysmal atrial fibrillation. Dr Gopal mentioned that what touched him deeply was that although Hein is a young man, he had difficulty playing with his children because he was never sure when a chaotic heart rhythm might begin. He is now able to play golf, as well as romp with his children, with a regular heartbeat. The procedure was done 18 months ago and he has remained well.

The cryoballoon ablation was the first operation of its kind performed in Africa. Extremely low-temperature ablation (effectively freezing) limits the activity of the heart tissue at the base of the pulmonary veins, which was triggering fibrillation by means of additional electrical signals.

The procedure involves insertion of two catheters (first a sheath and then the balloon inside it) from the groin through the femoral vein into the right atrium, then via small incisions, through the septum to the left atrium. The cryoballoon is placed at the base of one of the pulmonary veins.

Dye provides a good contrast to show whether occlusion is complete, once the balloon has been inflated and before cooling. Freezing ablates the heart tissue in a circular band exactly where the malfunctioning cells are situated, thus blocking the faulty electrical signals. The procedure is repeated for the other pulmonary veins.

As a surgeon who has experience with both radiofrequency (heat) ablation and cryotherapy, Dr Gopal explained that in his personal opinion, cryoballoon technology is safer because there is less perforation (so less healthy heart tissue is damaged), and the complication of induction of new rhythm disturbances is considerably reduced.

Both methods are used in the unit as frozen balloon therapy is not suitable for all conditions. Although it is not possible to claim zero risk with any procedure, patients in the unit have had no serious complications and there have been no deaths. Dr Gopal attributes this success to the immense support of the dedicated cardiac team.

Children with life-threatening congenital cardiac conditions have also been treated. Dr Gopal stressed that drugs to regulate irregular heartbeat are always the first-line treatment but if this is unsuccessful, then ablation is considered.

Sarah Sallie (15) of Woodstock had ventricular tachycardia and was unable to manage the five-minute walk to school without feeling exhausted. She now plays hockey and netball and recently completed a 10-km fun walk. Three children with Wolff–Parkinson–White syndrome, Geatwin Riddles (11) of Riversdale, Zanelle Francken (9) of Brackenfell and Braydon Kilroe (8) of East London, have undergone successful ablations to correct the accessory electrical pathway defect, and are now able to indulge in normal activities such as cricket, rugby and ballet.

Another first for the unit was the implant of a quadripolar left ventricular pacemaker. Gerhardus van Zyl, who had advanced heart failure, was the first person in Africa to benefit from this most up-to-date procedure, and remains well almost a year later.

Dr Gopal, who trained in Belgium and the UK, is actively involved in electrophysiology training in South Africa, as well as other African and Middle East countries.

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