EXTENDED DURABILITY OF NONCRYOPRESERVED AORTIC ALLOGRAFTS

To the Editor:

We read with interest the description by El-Hamamsy and colleagues¹ of a young woman who received a homovital homograft aortic root replacement that remains in situ with preserved function 32 years later. The description of this patient echoes our experience with noncryopreserved aortic homografts. In the mid to late 1970s at Southampton General Hospital, we too favored homografts for aortic valve replacement, especially in young women. Our preference was antibiotic-sterilized homograft valves that remained in storage refrigerated at 4°C. The majority of homografts were implanted within 8 weeks, but storage extended to as long as 17 weeks. For isolated valvular pathology, implantation was ordinarily subcoronary using the techniques described by Ross² and Barratt-Boyes.³ Subcoronary implantation, although technically challenging, lends itself to a significantly less hazardous reoperation than root or mini-root replacement.

In our experience, the durability of subcoronary antibiotic-sterilized refrigerated homografts has exceeded

that of tissue prostheses or cryopreserved allografts, particularly in children and young adults. Among our cohort of 200 consecutive young adults receiving subcoronary homografts, 7 were alive with their original homograft in situ between 25 and 29.8 years later at the time of our last report in 2007.⁴ Since the time of our last report, 1 of these 7 patients underwent reoperation 32.3 years after the original valve implantation. The other 6 patients remain alive and free from reoperation (maximum of 30 years with the latest echocardiogram reporting mild regurgitation, peak instantaneous gradient of 27 mm Hg, and normal ventricular function and dimensions). Overall freedom from reoperation in survivors was approximately 40% at 20 years.

Together with our experience, the case reported by the London group¹ adds credence to the suggestion that noncryopreserved allograft prostheses may outperform present-day cryopreserved allografts (and indeed perhaps modern tissue bioprostheses). Limited availability of allografts provided the impetus for the widespread introduction of cryopreservation with its potential for longer (perhaps indefinite) storage. Nevertheless, limited availability relates primarily to logistics of

procurement and consent, which may be mutable hurdles. Perhaps it is time to reexamine the biologic properties of noncryopreserved allograft implants with a view to addressing the logistics of donor acquisition and valve procurement if necessary.

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