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### Personalized Aortic Root Support With Mesh Provides Optimal Valve Conservation

*To the Editor:*

Gamba and colleagues [1] report a tissue-sparing procedure for aortic root ectasia which conserves the valve and the coronary ostia. We agree with them that current forms of aortic root replacement are technically demanding and time-consuming and that simplified ways of achieving the same objectives should be considered.

For sleeve procedures, stiff low-porosity vascular graft materials are used, and there is still a need to incise the aorta to support the valve. Another approach is computer modelling a soft pliant macroporous mesh that becomes incorporated in the adventitia to form a neo-aortic wall. Personalized external aortic root support has been used in 50 patients since its introduction in 2004. The morphology of the root, and the support of the aortic valve, remain unchanged to beyond 10 years [2]. In the only patient to die with a support in place (of arrhythmia), there was evidence of healing of the aortic media [3].

It should be noted that the “intention to treat” of valve-sparing root replacement cannot always be achieved, and there is a subsequent re-operation rate of 13% per decade of life, predominately for aortic valve failure [4]. Operations on the aortic root entail intraoperative hazard, and a careful consideration of risk and benefit is implicit and should be made explicit to patients. There is room for improvement in what we have to offer them, particularly for those with congenitally determined aortic root aneurysm who have root surgery in their thirties and may have four or five decades of life, preferably free of further surgery or anticoagulation.

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surgical approach for those patients with an aortic root disease already clinically relevant. Wrapping a diseased aortic wall, instead of replacing it, is less radical and thus may appear a less comprehensive approach, with possible drawbacks, than a classic valve-sparing approach (ie, the David and Yacoub operation). We are well aware of the personalized aortic support procedure that has showed, so far, encouraging results, as reported in the personalized aortic root support (PEARS) trial results [2]. The main differences with the sleeve procedure are a personalized computer modeling graft, made of soft macroporous mesh, and an earlier time for intervention. What the two procedures have in common is the wrapping of the aorta. According to both our data and the PEARS study, the external support may really prevent further enlargement of the aorta, avoiding the disastrous events related to the excessive dilatation. Besides, leaving the entire aortic root unit reduces stress both at the leaflet's belly and the commissures than the David operation (unpublished data). After our recent appraisal of the sleeve procedure [3] and the results of the PEARS study, we began to address moderate aortic root dilation (from 40 mm) with the sleeve technique when the surgical indication is a severe dilatation of the ascending aorta. Thus, the sleeve technique appears to be more versatile than other valve-sparing procedures. Because most patients in our study are relatively young, with still a long life expectancy, only time will answer the question whether wrapping the aortic root provides a stable and durable result. In the meantime, we are approaching the 10-year follow-up of our first patients operated on.

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## Reply

To the Editor:

We would like to thank Dr Austin and colleagues [1] for their comments. The sleeve procedure was conceived to simplify the

## References

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