Is re-modification of Ross operation necessary?†

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This is an interesting article [1]. We enthusiastically support the use of Dacron graft in Ross operation to prevent aortic dilation in long term. The diameter of sinus of Valsalva increases by 16% during systole in native aorta [2] (although thicker than native pulmonary artery). As the Dacron graft could not change its diameter during systole, we think that this may cause an increase in incidence of aneurysm/dissection formation. To overcome this problem, would it be more convenient to insert Dacron graft between coronary buttons?

†The corresponding author of the original article [1] was invited to reply but did not respond.

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Tackling reperfusion injury after cardiopulmonary bypass with tetrahydrobiopterin: new therapeutic potentials for this phenylketonuria drug?†

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Szabo et al. [1] demonstrated that administration of tetrahydrobiopterin (BH4) during early reperfusion improves cardiopulmonary recovery after cardioplegic arrest and extracorporeal circulation in dogs. Application of BH4 restored myocardial, endothelial, and pulmonary function and increases plasma cyclic guanosine monophosphate (cGMP) levels.

Szabo et al. concluded that the beneficial effect of BH4 on reperfusion injury after cardiopulmonary bypass can be explained by recoupling of endothelial nitric oxide synthase (eNOS), as supported by increased cGMP levels measured by radioimmunoassay. However, there are many factors that can cause induction of cGMP other than NO, such as carbon monoxide and natriuretic peptides [2], which are also released in ischemia/reperfusion damage [3]. In addition, plasma arterial cGMP is correlated with atrial natriuretic peptide levels, and its production is secondary to an enhancement of the local tissue cGMP of the vascular bed [4]. It is required to measure natriuretic peptide to exclude this as another factor of cGMP production. Moreover, there are several more direct ways to evaluate eNOS coupling, such as eNOS monomer/dimer analysis, eNOS activity, eNOS- dependent superoxide generation, and quantification of BH4 and BH2 levels [5].

In addition, it is not clear whether the dose of BH4 that is used in the study of Szabo et al. increases myocardial and endothelial levels of BH4. Subsequently, it is unclear whether the improved left-ventricular function is due to improved myocyte function or is

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