


eComment. Aortic valve conduit should not be performed in the presence of severe aortic regurgitation

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doi: 10.1093/icvts/ivh426

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I read with great interest the paper by Fragomeni et al. [1], in which they evaluated, by computational analysis, the effect of the severity of aortic regurgitation on cerebral perfusion in the setting of apicoaortic conduit (AAC). They showed that perfusion of epi-aortic vessels after AAC, in cases of mixed aortic valve disease, was achieved by blood flow through the native aortic valve.

Interposition of a valve conduit between the apex of the heart and the descending aorta has been an established method for almost 50 years, and is an effective alternative to conventional aortic valve replacement in patients with porcine ascending aorta or previous heart operations with patent bypass grafts, for patients with severe aortic valve stenosis [2]. Even in the era of transcatheter aortic valve implantation (TAVI), AAC gained a renewed interest, especially with the development of surgical tools (automated coring and apical connector insertion device) that facilitate the safe and effective performance of AAC [3]. High-risk patients who are amenable neither for conventional aortic valve replacement nor for TAVI (small aortic annulus, previous prosthetic valve in the aortic or mitral position) are good candidates for AAC.

Many authors with vast experience in AAC have previously recommended against the performance of this technique in the presence of severe aortic insufficiency [4]. After reviewing the literature, I have found one case of AAC in a patient with severe aortic valve regurgitation [5]. The patient was a 77-year-old woman with an ACC inserted for severe aortic valve stenosis three years earlier. She presented with pulmonary oedema secondary to diastolic overload of the left ventricle. Echocardiography revealed a well functioning valve conduit and severe aortic regurgitation. The authors of this paper had to perform an aortic valve replacement in this high-risk surgical patient and remove the previously implanted valve conduit. Recently, the relative distribution of blood flow after the insertion of an AAC was analyzed using cardiac magnetic resonance imaging. In this study, the authors found that 65% of ventricle outflow was directed through the conduit valve and the remaining 35% through the native diseased aortic valve [2]. The same group also noted the lack of progression of the native valve over time. However, none of their patients had aortic valve regurgitation. To date, there is no haemodynamic evaluation by cardiac magnetic resonance imaging in patients with AAC and aortic valve regurgitation.

The authors are to be commended for this analysis in the setting of AAC and for reminding us of additional techniques in the surgical armamentarium for the treatment of patients with severe aortic stenosis.

Conflict of interest: none declared.

References


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