I read with great interest the excellent paper by Dr Sponga et al. [1]. This is the first study to show that periprosthetic aortic regurgitation (pAR) after surgical aortic valve replacement (AVR) was independently associated with higher long-term mortality and reintervention. It echoes several recent studies of transcatheter aortic valve implantation (TAVI) that also found pAR to predict worse outcomes [2–4].

Cerebrovascular event is an important complication after aortic valve intervention because of its significant impact on quality of life, cost and risk of mortality. It is also an important consideration when deciding on intervention, given that the PARTNER trial [5] showed that TAVI have higher rates of stroke or transient ischaemic attack than AVR, at 30 days and 1 year.

Although several mechanisms for cerebrovascular events after TAVI are well recognized and intuitive, there may also be an association between pAR and stroke.

Regurgitation around the prosthetic valve implies an increased surface area of foreign material for thrombosis formation. There will be increased turbulence and stasis of blood flow around the altered anatomy of valve replacement when pAR is present. The rate of pAR being higher after TAVI than AVR, for example, 12.2% vs. 0.9% at 30 days in the PARTNER trial [5], similar to cerebrovascular events, supports this assumption. The paper by Sponga et al. [1] also reported the rates of in-hospital stroke to be higher among those with residual AR >1, although not reaching statistical significance (5.2% vs. 3.2%, P = 0.20).

In view of this, I wondered whether Dr Sponga et al. had longitudinal data regarding incident cerebrovascular events after AVR, at least to 1 year, which could support or refute the hypothesis above. Further studies are required to definitively answer this question, which is important because if the association is true, clinicians would need to weigh the benefits and risks of taking a more aggressive approach to intervening or anticoagulation upon any significant pAR after both AVR and TAVI to reduce the rates of stroke over time, while accepting the additional stroke risk of any form of reintervention or bleeding risk from over-anticoagulation.

REFERENCES


LETTER TO THE EDITOR RESPONSE

Reply to Wang

Sandro Sponga* and Pierre Voisine

Quebec Heart and Lung Institute, Laval University, Quebec City, Quebec, Canada

* Corresponding author. Quebec Heart and Lung Institute, Laval University, Quebec City, 2725 Chemin Ste-Foy, Quebec, Canada G1V 4G5. Tel: +1-418-6568711; fax: +1-418-6568711; e-mail: sandro_sponga@yahoo.com (S. Sponga).

Received 4 March 2013; accepted 7 March 2013

Keywords: Aortic valve replacement • Stroke • Neurological events • Aortic regurgitation • Paravalvular leak

We are thankful to Dr Wang [1] for his positive comments on our manuscript as well as his very pertinent question. As he pointed out, we observed a higher rate of stroke in the immediate postoperative period in the group with residual aortic regurgitation (AR), which, however, did not reach statistical significance [2]. Our study was aimed at assessing the impact of residual AR on long-term mortality, for which we have complete data accessible through the Quebec Civil Registry. Unfortunately, long-term rates of complications such as strokes are less readily available, but we do have long-term follow-up data for 64.6% of the AR ≤1 group (median follow-up 4.6 years) and 76.3% of the group with AR >1 (median follow-up 4.7 years). Analysis of those sub-groups revealed no statistically significant difference in freedom from neurological events at 1 (97.3 vs 97.9%), 3 (95.5 vs 95.5%), 5 (93.2 vs 95.5%) and 10 years (89.1 vs 90.3%), respectively (P = 0.72). Of note, a similar incidence of stroke was observed despite a higher percentage of patients receiving mechanical valves in the AR >1 group than in the AR ≤1 group (28.4 vs 6.4%, P < 0.01). The mechanism suggested by Dr Wang to explain potentially higher rates of stroke in patients with residual AR in transcatheter aortic valve implantation [3] remains intuitive and, although not supported by this post hoc sub-group analysis with its inherent limitations, should be verified in a larger study.
REFERENCES


LETTER TO THE EDITOR

The optimal z-score for transannular patch

Ismail Yurekli*, Mert Kestelli and Habib Cakir

Department of Cardiovascular Surgery, Izmir Katip Celebi University, Ataturk Training and Research Hospital, Karsiyaka-Izmir, Turkey

* Corresponding author. Department of Cardiovascular Surgery, Izmir Katip Celebi University, Ataturk Training and Research Hospital, 6436 sok. 82/3, Karsiyaka-Izmir 35540, Turkey. Tel: +90-505-5251202; fax: +90-232-2431530; e-mail: ismoyurekli@yahoo.com (I. Yurekli).

Received 25 February 2013; accepted 21 March 2013

Keywords: Tetralogy of Fallot • Pulmonary valve • Congenital heart disease

Congratulations to the authors for this valuable study [1]. We wish to emphasise some issues. In this study, the authors did not attempt to resect the partial extension of the septomarginal trabecula. Why is that so? Ventricular hypertrophy due to jet flow through the ventricular septal defect (VSD) and the development of secondary infundibular stenosis are significant processes occurring in tetralogy of Fallot. The ventricular wall thickens into the ventricular cavity in ventricular hypertrophy. Ventricular hypertrophy regresses after the closure of the VSD. Thus, the need for a transannular patch diminishes or disappears. We think that the absence of dextroposition of the aorta in many of the tetralogy of Fallot (TOF) diagnoses [2] is the key point in diminishing the need for a transannular patch. We wonder what the opinion of the authors is on this issue.

REFERENCES


LETTER TO THE EDITOR RESPONSE

Reply to Yurekli et al.

Mark Nelson Awori*

Department of Surgery, Division of Cardiothoracic Surgery, University of Nairobi, Nairobi, Kenya

* Corresponding author. Department of Surgery, Division of Cardiothoracic Surgery, University of Nairobi, PO Box 14677-00800, Nairobi, Kenya. Tel: +254-707-366336; e-mail: mnawori@yahoo.com (M.N. Awori).

Received 14 March 2013; accepted 21 March 2013

Keywords: Tetralogy of Fallot • Pulmonary valve • Congenital heart disease

We thank Yurekli et al. [1] for their questions and comments relating to our publication, where we examined how the postoperative pulmonary annular gradient related to pulmonary valve annular size after total correction of tetralogy of Fallot [2]. We examined the patients who did not have significant postoperative right ventricular outflow tract obstruction (RVOTO).