

Prof. Pierluigi Stefano: new options for the surgical treatment of aortic valve

Submitted Dec 12, 2017. Accepted for publication Dec 15, 2017.

doi: 10.21037/jtd.2017.12.80

View this article at: <http://dx.doi.org/10.21037/jtd.2017.12.80>

Editor's note

Prof. Stefano gave lectures in the Guangdong Provincial Cardiovascular Institute, Guangzhou in November 21st, 2017. We were honored to invite Prof. Stefano (*Figure 1*), who is the Director of Cardiac Surgery Department of Careggi University Hospital in Florence, sharing his experience in the field of cardiac surgery.

Expert's introduction

Prof. Stefano is Director of Cardiac Surgery Department of Careggi University Hospital in Florence, the most important University Hospital in Italy.

Prof. Stefano performed as first operator more than 14,000 cardiac surgery procedures (personally performs 600–700 procedures per year). Together with his Team, he reached first place in Italy in terms of number of cases per year, outcome level and specializations such as mitral & aortic valve repair, minimal invasive surgery, transcatheter aortic valve implantation (TAVI), endovascular treatment of valve disease, robotic surgery.

Prof. Stefano is managing an educational and fellowship program in China with lectures, procedures, live cases & seminars in many Hospitals and Universities. He is Honorary Professor at Tianjin Chest Hospital and Visiting Professor at Nanjing First Hospital, Kunming Yan'an Hospital and Jinan Provincial Hospital.

Prof. Stefano has been spokesman and moderator at more than 200 National and International congresses. In China he has been spokesman at SCICC-Guangzhou, SISMICS—Shanghai and International Symposium on Cardiovascular Surgery-Nanjing.

Interview

JTD: Would you briefly introduce the new options for the surgical treatment of aortic valve?

Prof. Stefano: After the first years of the substitutive valve



Figure 1 Prof. Pierluigi Stefano.

surgery era, a renewed interest in reconstruction of the proper function and morphology of valve structures ensued, with increasingly good results.

To preserve a substantially normal or mildly diseased native aortic valve in patients with aortic root or ascending aorta aneurysm has become a valid alternative to replacement with a valved conduit.

There are basically two type of valve sparing operations: the remodeling of the aortic root and the reimplantation of the aortic valve; the latter can provide a better annulus stabilization and prevent further dilatation of the native structures; cusp pathology can be corrected as well in selected cases; long term results proved to be excellent.

However, these are technically demanding procedures, with most failures related to technical errors, and should be performed by surgeons with specific experience and specially devoted to apply the principles of functional anatomy.

JTD: In your opinion, compared with traditional treatment of aortic valve, what are advantages of these new techniques?

Prof. Stefano: In the carefully selected patients, and

when the operation is carried out with respect of the geometry and relationships of the native structures, a proper functionality of the aortic apparatus and rheology is restored, with all the long term advantages related to a smooth blood flow in a completely native valvular environment instead of a rigid prosthetic stent; the dynamics of the left outflow tract are respected, prosthesis-related complications are fully avoided, and an oral anticoagulation regimen is not necessary. The return to a completely normal day-to-day activity is rapid and durable, with an excellent quality of life and satisfaction. Moreover, the need for reoperation appears to be reduced when compared with replacement surgery with mechanical or biological prostheses.

JTD: *From the perspective of physiopathology and technique, how do you consider aortic root replacement with preservation of the aortic valve?*

Prof. Stefano: In the case of remodeling, the technique is less time consuming and more physiologic, since the aortic root is replaced and sutured to the native wall in such a way that the geometric alignment of the commissures is completely restored; on the other side, this operation lacks of annulus stabilization, and this can lead to failure with residual aortic regurgitation in a rather high number of cases.

When performing reimplantation, the commissures are resuspended inside the new aortic wall; this imposes a challenging tridimensional vision to the surgeon; this time, a perfect alignment should be newly obtained, by calculating proper height and sufficient cusp coaptation in order to avoid distortion and consequent valve regurgitation; the native structures are prevented from dilating in the future and a better long time outcome is guaranteed; in many cases, a mid term survival similar to a matched general population is observed, with no need for reoperation in a proportion as high as 90% or more at 10 years.

However, each of these procedures, when correctly carried out in patients with the right characteristics, can restore the functional anatomy of the aortic apparatus and

offer excellent results to frequently young patients.

JTD: *Any suggestions for medical students?*

Prof. Stefano: I would say that a young practicing surgeon of our era should develop an attitude to a conservative, rather than substitutive, approach to the anatomical structures. Nature provided us with a lot of complex yet perfectly adaptive mechanisms; when facing pathology, only the diseased portion of the functional anatomy should be corrected, not necessarily the whole apparatus *en bloc* without a sound and critical reasoning. And I would suggest as well that a particular attention be paid since the beginning to basic sciences, because this effort will be paid when practicing with patients with a more profound knowledge and consciousness.

JTD: *What you would like to do in the upcoming years both in life and in work?*

Prof. Stefano: I hope I will be given the opportunity to share the expertise gained with these long years of surgical practice, and transmit a lot of tips, tricks and in general a surgical vision to the generations of physicians to come. This will be a completion of a pathway, for both my personal and professional life.

Acknowledgements

On behalf of the editorial office of *Journal of Thoracic Disease (JTD)*, I would like to extend my gratitude to Prof. Stefano for sharing his opinions and Mr. Simmi for polishing the content.

Footnote

Conflicts of Interest: The author has no conflicts of interest to declare.

(Science Editor: Julia Wang, JTD, jtd@amepc.org)

Cite this article as: Wang J. Prof. Pierluigi Stefano: new options for the surgical treatment of aortic valve. *J Thorac Dis* 2018;10(1):E11-E12. doi: 10.21037/jtd.2017.12.80