cases (‘borderline’ annulus, important discrepancy between TEE and CT measurements, massive and/or eccentric calcifications), we proceed to a ‘calibrated’ balloon valvuloplasty. A convention-
al valvuloplasty balloon (Cristal Balloon, Balt, Montmorency, France) is inflated with a diluted contrast agent through a three-
way stopcock. When the waist generated on the balloon profile
by the aortic annulus is stretched, the stopcock is closed and an
aortography is performed to exclude the presence of aortic
regurgitation. The amount of contrast agent used to inflate the
balloon is carefully recorded, and the balloon is deflated and
withdrawn. On the bench, the balloon is inflated again to the
same volume, and is then sized with a sizing plate (Amplatzer
sizing plate, AGA Medical Italia, Milan, Italy). This simple
manoeuvre allows us to accurately measure the aortic annulus,
to estimate the risk of postoperative paraprosthetic leakage and
to check the relationships between the dislocated aortic valve
leaflets and the coronary arteries ostia. In our experience, this
procedure has led to a change in the size of the percutaneous
prosthesis in three patients, and to the conversion to transapical
approach in two patients needing a 29 mm prosthesis.

In conclusion, we believe that the CT protocol described by
Blanke could greatly enhance our ability to evaluate the
anatomy of the aortic root preoperatively. In doubtful cases,
however, calibrated balloon valvuloplasty could add fundamental
dynamic information, allowing us to ‘feel’ the aortic annulus
while measuring it [3].

REFERENCES

Assessment of aortic annulus dimensions for Edwards SAPIEN transapical
heart valve implantation by computed tomography: calculating average
diameter using a virtual ring method. Eur J Cardiothorac Surg 2010;38:
750–8.
Preoperative assessment of aortic annulus dimensions: comparison of
noninvasive and intraoperative measurement. Ann Thorac Surg 2011;91:
709–14.
imaging of aortic root for transcatheter aortic valve implantation. More
et al. Dislocation of a transapically implanted aortic valve prosthesis with
a functionally bicuspid aortic valve and ascending aortic aneurysm.

LETTER TO THE EDITOR RESPONSE

Reply to Cerillo et al.

Philipp Blanke* and Matthias Siepe

* Department of Diagnostic Radiology, University Hospital Freiburg, Freiburg, Germany
b Department of Cardiovascular Surgery, University Hospital Freiburg, Freiburg, Germany

* Corresponding author. Department of Diagnostic Radiology, University Hospital Freiburg, Hugstetter Str. 55, 79104 Freiburg, Germany. Tel. +49-761-2703806; fax: +49-761-27038380; e-mail: philipp.blanke@uniklinik-freiburg.de (P. Blanke).

Received 7 August 2011; accepted 11 August 2011

Keywords: Transcatheter aortic valve implantation • Aortic valve stenosis • Computed tomography • Aortic annulus

We appreciate Dr Cerillo’s comments [1] on our work [2] and
agree with most of the conclusions. Up to now, no ‘gold stan-
dard’ for sizing the aortic annulus prior to transcatheter aortic
valve implantation has been defined. The approach presented
by our working group is now fully implemented in our working
routine and was also, independently reported by other
European centres [3]. In addition to commenting on our work,
Cerillo et al. report an invasive attempt of annulus sizing by
means of a conventional valvuloplasty balloon with intracorporal
and extracorporal inflation. Extracorporal inflation with identical
balloon filling should allow for diameter measurements. Cerillo
et al. recommend this approach for doubtful cases. However,
this approach, especially its accuracy, has to be evaluated in a
formal study. If the results demonstrate reliability of this method,
this approach may also be conceivable for patients with renal
insufficiency where contrast media exposition with computed
tomography is clearly unfavourable. Nevertheless, interven-
tionalists have to be aware of the clinical relevant aortic insufficiency
after valvuloplasty, calling for immediate valve implantation. It is
not justified exposing the patient to the additional risk of a pro-
longed period of severe aortic insufficiency after ballooning
whenever accurate measurements can be made well in advance.
A CT-based assessment is mandatory for most patients in the
preoperative work-up for any TAVI procedure.

In summary, we thank Dr Cerillo et al. for their valuable rec-
ommendation which might be of great value in selected
patients. However, we still believe that the CT-based preopera-
tive assessment is the most reliable routine diagnostic feature for
annulus sizing and operation planning.

REFERENCES

[1] Cerillo A, Mariani M, Glauber M, Berti S. Sizing the annulus for transcath-
eter aortic valve implantation: More than a simple measure? Eur J
et al. Assessment of aortic annulus dimensions for Edwards SAPIEN
Transapical Heart Valve implantation by computed tomography:
We read with interest the recent paper of Go Watanabe et al [1], regarding awake off-pump coronary artery bypass grafting (OPCAB) under thoracic epidural anaesthesia (TEA). They compared 72 patients who underwent awake OPCAB under only TEA with 67 patients who underwent OPCAB under general anaesthesia (GA) and found that the time to drink water, the time to walk, and hospital stay were significantly shorter in awake OPCAB group. However, whether awake OPCAB is contrary to the concept of fast recovery surgery (FTS)?

FTS using multimodal perioperative rehabilitation programs was introduced in the early 1990s, including preoperative optimization and information, ‘stress reduced’ surgery, efficient postoperative pain treatment, adjustment of perioperative care principles to existing evidence, and nursing care focusing on early mobilization and oral nutrition to enhance recovery, decrease morbidity and hospital stay [2]. The ultimate goal of FTS is to provide the ‘stress, pain and risk-free’ operation, its centre is to minimize stress. The reduction of stress during an elective surgical procedure, as characterized by attenuation of the neurohormonal response to the operation, not only provides a rational basis for increased recovery but also diminishes the risk of organ dysfunctions and complications [3].

During awake OPCAB, the tension and anxiety which will increase the patients’ stress and reduce the patients’ comfort and satisfaction are inevitable because the patients remain conscious. It is contrary to the concept of fast recovery surgery. We think the main benefit of awake OPCAB is achieved by the TEA, but not keeping conscious during operation. TEA recently gained popularity because of its potential beneficial effects on the perioperative stress response, analgesia and postoperative pulmonary function. Studies had shown that intraoperative use of TEA combined with GA will allow decreased use of opioids and permit earlier extubation [4], will alleviate perioperative stress and enable effective postoperative epidural analgesia which have favourable effects on pulmonary function parameters [5], and will have beneficial effects in cardiac risk patients [6]. In addition, there is a lack of evidence-based data that patients who have a risk of cerebral ischaemia or chronic pulmonary diseases are benefit from awake OPCAB.

Whether it is the optimal method to use propofol or dexmedetomidine keeping patients sedation during OPCAB under TEA?

REFERENCES