Highlights from this issue

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A challenge for the clinician caring for patients with heart disease is keeping up to date with new guidelines — there are several national and international societies writing guideline documents, there are many different types of heart disease, and the guidelines tend to be long with a multitude of recommendations and a plethora of additional details in the accompanying text. Digital approaches for accessing guidelines are helpful for finding the specific information needed for a specific clinical situation, but do not provide an overview of the basic principles underlying the recommendations or the major changes in updated guidelines. To address this gap in dissemination of knowledge, *Heart* will periodically publish short editorials about new or updated guidelines to provide the clinician with the key elements needed to understand the new recommendations. In this issue of *Heart*, the 2014 AHA/ACC Guidelines for Valvular Heart Disease are explored with editorials on new recommendations for aortic stenosis (see page 902) and mitral regurgitation (see page 905), including the new concept of valve disease stages which uses an integrative approach to provide clearer definitions of disease severity. Readers are encouraged to send us comments about this format and suggestions for future guideline oriented editorials.

The Editor's Choice in this issue is a retrospective study by Dr Höke and colleagues (figure 1) that compared echocardiographic severity of tricuspid regurgitation before and after placement of a permanent right ventricular pacer lead. Significant tricuspid regurgitation was present in more than 1/3 of patients after pacer lead placement even though

Figure 1 Kaplan–Meier survival curves for the time to the secondary endpoint (all-cause mortality and heart failure related events) in patients with and without significant lead-induced TR with the follow-up onset at time of the follow-up echocardiography.

tricuspid regurgitation was absent or only mild at baseline. The presence of significant lead-associated tricuspid regurgitation was associated with a lower survival (HR 1.687, $p=0.04$) and higher rate of heart failure events (HR 1.631, $p=0.019$) compared to those with less severe tricuspid regurgitation.

In the accompanying editorial, Drs. Lin and Brady (see page 900) remind us that “tricuspid valve regurgitation, whatever the mechanism, is not benign and negatively impacts survival. Knowledge of this should spur further study and vigilance in the follow-up of the once ‘forgotten valve’.” Be sure to share your thoughts about the controversial issue of device associated valve dysfunction using the “Submit a Response” option in the online full text version of the article.

Another area of current innovation and controversy is the surgical approach to treatment of aortic dilation in patients with Marfan syndrome. Prof Treasure and colleagues (figure 2) present the mid-term followup in the first 30 patients treated with an external aortic root macroporous polymer mesh support that is customized for each patient based on computer aided design using clinical tomographic images. Over a total of 133 patient-years there were no deaths or major valvular or vascular events, which compares favorably with previous series of Marfan patients undergoing a standard aortic root replacement with stabilization of the annulus.

The editorial by Dr Duke Cameron (figure 2) takes an opposing point of view, pointing out that current medical and

Figure 2 Technical aspects of the support. The panels from left to right show the measurements made on the MRI and the model created from it by computer aided design. The next panel shows the former, a replica of the aorta in thermoplastic, made by rapid prototyping (commonly called 3-D printing) and the soft macroporous mesh sleeve supported by it. The schematic shows the relationship of the support to the aortoventricular junction (below) and to the coronary and brachiocephalic arteries. Finally, the before and eight years after MRI scans showing complete conservation of the aortic root architecture and, therefore, the aortic valve support.

surgical therapy has already led to a life expectancy that is near normal in patients with Marfan syndrome, particularly when aortic root replacement is combined with a valve-sparing surgical approach. In the series of patients receiving external support, aortic size was smaller than previous surgical series; thus longer term followup is needed to ensure durability the disease progresses and patients get older. Marfan syndrome is a complex condition with some patients diagnosed early in whom elective repair is possible at a relatively small aortic size; whereas other patients are diagnosed only when they present with aortic dissection or a massively dilated aorta. Clearly, the surgical

approach will differ in these different clinical situations and perhaps optimal outcomes might depend on using the right procedure in the right patient.

In addition to the Education in Heart section, which is aimed toward providing a competency based comprehensive educational curriculum, with this issue *Heart* is publishing the first of many topic-based series of review articles; our current series on aortic disease is introduced by Prof. Gavin Murphy (*see page 897*), along with review articles on the genetic basis for aortic disease (*see page 916*) and on imaging aortic aneurysmal disease (*see page 909*). These review series will interpret recent scientific development in

light of our current knowledge base with the goal of providing clinicians with the information needed for evidence-based patient care and pointing researchers towards new areas of scientific inquiry. Watch for new topic-based review series over the next several months!

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