

60th Annual Scientific Session & Expo

E712

JACC April 5, 2011

Volume 57, Issue 14



IMAGING AND DIAGNOSTIC TESTING

UTILITY OF 3D ECHOCARDIOGRAPHY FOR VISUALIZATION OF THE TRICUSPID VALVE: LEAFLETS AND PAPILLARY MUSCLES

ACC Poster Contributions

Ernest N. Morial Convention Center, Hall F

Sunday, April 03, 2011, 3:30 p.m.-4:45 p.m.

Session Title: Echocardiography: 3-D, TEE, and Intracardiac Echo

Abstract Category: 32. Echocardiography: 3-D, TEE, and Intracardiac Echo

Session-Poster Board Number: 1059-221

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Background: As interest in correcting tricuspid regurgitation (TR) is increasing, so are attempts to better visualize the tricuspid valve (TV) in the hopes of improving diagnosis. Recent advances in 3D echocardiography provide for optimal visualization of the TV, for both normal and diseased patients, including its valvular and subvalvular apparatus.

Methods: Images were acquired at the Emory University Hospital using a GE Vivid 7 ultrasound system, on both normal (n=17) and diseased patients (n=20). 2D slices along the apical 4-chamber and para-sternal short axis views were extracted from the 3D echo using GE EchoPAC. 3D transthoracic images focusing on the right ventricle were used to visualize leaflet motion and identify the papillary muscles (PM).

Results: TV leaflets, anterior (A), posterior (P) and septal (S), were visualized throughout the cardiac cycle (Fig. A). While leaflet motion can be observed in the 3D image, it was necessary to interrogate the 3D images along the long axis to identify the PMs. PMs were identified in the 4 chamber view through visualization of the chordae, which were traced back to their PM insertion location (Fig. B). In addition, a central regurgitant orifice was observed in cases of severe tricuspid regurgitation in patients with right ventricular dilatation.

Conclusions: 3D echocardiography provides a useful tool for visualizing the tricuspid valve apparatus in its entirety. Such 3D imaging has the potential to provide better diagnosis and possibly treatment of TR.

