

Insights of tricuspid regurgitation mechanisms in patients with right ventricular apical pacing by three-dimensional echocardiography.

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Abstract

Objective: Device lead-induced tricuspid regurgitation (LITR) mechanisms are well-defined by 3D transthoracic echocardiography (3D-TTE). There is a lack of data on the Latin-American population. The objective of this study was to describe the prevalence of several mechanisms and insights in patients with permanent right ventricular (RV) implanted devices by 3D-TTE examination. **Methods:** We performed a cross-sectional analysis of 101 patients with permanent cardiac devices such as pacemakers or defibrillators. 3D-TTE was obtained on all patients in RV-focused apical views to perform a complete tricuspid valve (TV) evaluation: leaflets, subvalvular apparatus, precise lead location, and functional assessment to evaluate possible mechanisms of tricuspid regurgitation (TR). **Results:** In a total of 101 patients, the leads did not interfere with TV function in 53 p. (59%), while LITR was observed in 38 (41%) patients. Adherent, impinging, entangled, and mixed lead-induced mechanisms were observed. Time in years since device implantation was significantly higher in patients with LITR. **Conclusions:** LITR was present in a high proportion of our population. LITR is the result of damage to the TV as well as its subvalvular apparatus due to the fibrotic and inflammatory response over time when leads are situated in unfavorable locations.

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