Prevalence of new-onset tricuspid regurgitation after leadless Micra pacemaker implantation

V. La Fazia¹, C. Gianni², N. Pierucci², D.G. Della Rocca³, S. Mohanty¹, G. Torlapati¹, A. Al-Ahmad¹, M. Bassiouny¹, G.J. Gallinghouse¹, R. Horton¹, J.D. Burkhardt¹, D. Lakkireddy⁴, G.B. Forleo⁵, L. Di Biase⁶, A. Natale¹

¹Texas cardiac Arrhythmia, Austin, United States of America
²Polyclinic Umberto I, Clinical Internal, Anesthesiologic and Cardiovascular Sciences, Rome, Italy
³Heart Rhythm Management Centre, Brussels, Belgium
⁴Kansas City Heart Rhythm Institute, Overland Park, United States of America
⁵ASST Fatebenefratelli Sacco, Milano, Italy
⁶Montefiore Medical Center Albert Einstein College of Medicine, New York, United States of America

Funding Acknowledgements: None.

Background: Tricuspid regurgitation (TR) has been reported as a complication of transvenous pacemaker lead implantation. However, the potential risk of TR is not known in case of leadless devices.

Purpose: We describe a case series of moderate to severe TR following implantation of the leadless Micra device.

Methods: We performed a multicenter (n=6) cross-sectional survey across the United States and Italy. Patient data were obtained by chart review and only patients with baseline and follow-up echo Doppler data were included in this analysis. All images were reviewed by the first author.

Results: A total of 158 patients receiving Micra implant were screened of which 6 (3.8%) cases of moderate to severe TR were identified by the Doppler echo. The most common presenting symptom were shortness of breath (6/6, 100%) and fatigue (5/6, 83.3%). Prominent jugular venous pulsation was observed in 1/6 (16.7%) patients indicating severe TR. Median time to development of symptoms and detection of TR was 9±3 months. None of the 6 patients developed symptoms immediately after the procedure.

Figure 1 illustrates severe TR in one of the six patients included in the study (off axis view).

Conclusion: In this small series, we observed new-onset moderate-severe TR following implantation of leadless device in approximately 4% of patients. Whether this is related to the positioning of the device, needs to be ascertained by future studies.

Severe TR after Micra implant