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

V. La Fazia1, C. Gianni1, N. Pierucci2, D.G. Della Rocca3, S. Mohanty1, G. Torlaiapati1, 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