**Abstract**

**Introduction:** Catheter ablation (CA) has emerged as an effective treatment modality for atrial fibrillation (AF). However, CA for AF is a very complex procedure and is associated with several major complications including neurologic events (stroke and transient ischemic attacks), pulmonary vein (PV) stenosis, atrioesophageal fistula and pericardial effusion/tamponade. Stress cardiomyopathy (Tako-tsubo) is a unique form of reversible left ventricular (LV) dysfunction which is known to be related to conditions associated with marked sympathetic nervous activation. It is characterized by reversible LV dysfunction in the absence of coronary artery disease. Although the other complications are well recognized, to the best of our knowledge, only 2 cases of Tako-tsubo following AF CA have been reported so far. We are reporting a female patient who had Tako-tsubo cardiomyopathy following CA of AF.

**Case Report:** A 58 years old woman with history of symptomatic paroxysmal AF was admitted for CA. She had been experiencing AF episodes during 2 years despite propafenone treatment. Her medical history was positive with hypertension and panic disorder. Physical examination and biochemical tests were unremarkable as well as her coronary angiography that was done 3 months ago. Transthoracic echocardiography revealed normal LV function with an LV ejection fraction (EF) of 68% and slightly enlarged left atrium (diameter: 42 mm). Initial electrocardiogram, X-ray and computer tomography of the heart and lungs were normal. CA procedure was performed with the patient under sedation, using intravenous midazolam. Following transseptal catheterization, electroanatomical mapping of the left atrium and the PVs was performed using the CARTO system (BiosenseWebster, Inc., Diamond Bar, CA, USA). PVs were isolated by ablating circumferentially at the antral portion of the PVs with an externally irrigated cooled-tip catheter at 35 W. 10000 units heparin was administered intravenously after transseptal puncture and additional doses were given to keep ACT level over 350 msec. At the end of the procedure, there was no complication. Next day, her examination and ECG were normal and she was discharged from hospital. The same evening, she was re-admitted to hospital with dispnea and fatigue. On examination, her blood pressure was 70/40 mmHg and heart rate was 130 beats/min. Oxygen saturation was 70%. Inspiratory rales over both lungs were remarkable by auscultation. ECG showed sinus tachycardia and negative T waves in precordial leads. Transthoracic echocardiography revealed normal LV function with an LV ejection fraction (EF) of 68% and slightly enlarged left atrium (diameter: 42 mm). Initial electrocardiogram, X-ray and computer tomography of the heart and lungs were normal. CA procedure was performed with the patient under sedation, using intravenous midazolam. Following transseptal catheterization, electroanatomical mapping of the left atrium and the PVs was performed using the CARTO system (BiosenseWebster, Inc., Diamond Bar, CA, USA). PVs were isolated by ablating circumferentially at the antral portion of the PVs with an externally irrigated cooled-tip catheter at 35 W. 10000 units heparin was administered intravenously after transseptal puncture and additional doses were given to keep ACT level over 350 msec. At the end of the procedure, there was no complication. Next day, her examination and ECG were normal and she was discharged from hospital. The same evening, she was re-admitted to hospital with dispnea and fatigue. On examination, her blood pressure was 70/40 mmHg and heart rate was 130 beats/min. Oxygen saturation was 70%. Inspiratory rales over both lungs were remarkable by auscultation. ECG showed sinus tachycardia and negative T waves in precordial leads. Transthoracic echocardiography revealed normal LV function with an LV ejection fraction (EF) of 68% and slightly enlarged left atrium (diameter: 42 mm).

**Discussion and Conclusions:** In conclusion, we report a case of acute heart failure following radiofrequency CA of AF which was most probably due to Tako-tsubo cardiomyopathy. Radiofrequency CA in the PV antrum may damage autonomic ganglionated plexi, leading to vagal withdrawal, thus resulting in enhanced sympathetic tone. Furthermore, considering her panic disorder, it is possible that the increased stress level of the patient had triggered the cardiomyopathy.