



LETTER TO THE EDITOR

Radiofrequency ablation and predictors for faster recovery for tachycardia-induced cardiomyopathy in the pediatric population



Ablação de radiofrequência e os preditores para uma recuperação mais rápida para miocardiopatia induzida por taquicardia na população pediátrica

Dear Editor,

We read with great interest the paper by Rodríguez-Mañero et al.¹ entitled “Permanent junctional reciprocating tachycardia in a patient with an atypically located accessory pathway in the left lateral mitral annulus” published in the January 2016 issue of the *Journal*. We congratulate the authors on the successful management of this patient.

We had an experience with a premature newborn who had multi-drug resistant permanent junctional reciprocating tachycardia (PJRT) resulting in tachycardia-induced cardiomyopathy. At the age of 29 days, she underwent radiofrequency ablation, after which sinus rhythm was established. Ablation was repeated at the age of 56 days because of recurrence. Medical treatment including amiodarone, propranolol and propafenone was stopped after the ablation. The patient has had no symptoms or medication for two years.²

PJRT is a rare form of reentrant supraventricular tachycardia featuring a long R-P interval and incessant tachycardia ranging from 120 to 250 bpm. Inverted P waves in the inferior leads on the surface electrogram and an accessory pathway with slow, decremental retrograde conduction can be seen on electrophysiological study during the tachycardia.³ The diagnosis of PJRT is usually incidental or due to tachycardia-induced cardiomyopathy, as in our case. PJRT usually does not respond to antiarrhythmic drugs. Femenia et al.⁴ described successful radiofrequency ablation of PJRT in a newborn. Vaksman et al.⁵ reported

85 pediatric patients (<21 years old) with PJRT, of whom 24 (28%) had heart failure at admission. In their study, 18/85 (21%) patients underwent radiofrequency ablation.

Recently, Moore et al.⁶ described 81 children with tachycardia-induced cardiomyopathy, 23% of whom were diagnosed with PJRT. In this study, the authors listed the predictors of left ventricular systolic functional recovery as younger age, higher heart rate or ejection fraction at admission, and use of mechanical circulatory support including extracorporeal membrane oxygenation or ventricular assist device. Baseline left ventricular end-diastolic diameter was the only predictor for normalization of left ventricular dimensions. This study shows the importance of early diagnosis, especially before the onset of left ventricular systolic dysfunction, and of proper mechanical circulatory intervention in tachycardia-induced cardiomyopathy.

Clinicians should consider tachycardia-induced cardiomyopathy due to PJRT in children and adults with low ejection fraction. Radiofrequency ablation may be a curative treatment for this tachycardia and improvement in left ventricular systolic function is possible after ablation.

Conflicts of interest

The authors have no conflicts of interest to declare.

References

- Rodríguez-Mañero M, Fernández-López XA, González-Melchor L, et al. Permanent junctional reciprocating tachycardia in a patient with an atypically located accessory pathway in the left lateral mitral annulus. *Rev Port Cardiol*. 2016;35:59.e1–5.
- Gülgün M, Karagöz T, Aykan HH, et al. Transjugular approach for radiofrequency ablation of permanent junctional reciprocal tachycardia in a newborn with bilateral femoral vein thrombosis. *Türk Kardiyol Dern Ars*. 2015;43:182–4.
- Bordalo AD, Ferreira D, Bordalo e Sá AL, et al. A case of incessant junctional tachycardia in a female patient with aneurysm of the interauricular septum. *Rev Port Cardiol*. 1992;11:561–81.
- Femenia F, Sarquella-Brugada G, Brugada J. Single-catheter radiofrequency ablation of a permanent junctional reciprocating tachycardia in a premature neonate. *Cardiol Young*. 2012;22:606–9.
- Vaksman G, D’Hoinne C, Lucet V, et al. Permanent junctional reciprocating tachycardia in children: a multicentre study on clinical profile and outcome. *Heart*. 2006;92:101–4.

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6. Moore JP, Patel PA, Shannon KM, et al. Predictors of myocardial recovery in pediatric tachycardia-induced cardiomyopathy. *Heart Rhythm*. 2014;11:1163–9.

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