Permanent junctional reciprocating tachycardia in a young female patient: a case report

Ante Komazin*, **Gordana Hursa**, **Sanja Keleković**, **Tomislav Pijetlović**

University Hospital Centre „Sestre milosrdnice“, Zagreb, Croatia

KEYWORDS: supraventricular tachycardia, pediatrics, ablation.

CITATION: Cardiol Croat. 2025;20(11-12):302. | https://doi.org/10.15836/ccar2025.302

***ADDRESS FOR CORRESPONDENCE:** Ante Komazin, Klinički bolnički centar Sestre milosrdnice, Vinogradska 29, HR-10000, Zagreb, Croatia. / Phone: +385-1-378-7933 / E-mail: ante.komazin23@gmail.com

ORCID: Ante Komazin, https://orcid.org/0009-0003-9515-4319 • Gordana Hursa, https://orcid.org/0000-0001-9118-9707 Sanja Keleković, https://orcid.org/0000-0003-4951-876X • Tomislav Pijetlović, https://orcid.org/0000-0002-4499-4428

Introduction: Supraventricular tachycardias are among the most common symptomatic arrhythmias in childhood. Within this group, permanent junctional reciprocating tachycardia (PJRT) is rare but potentially life-threatening. PJRT typically presents in children and adolescents and is characterized by a concealed decremental accessory pathway with slow retrograde conduction. On electrocardiography, it manifests as a narrow QRS complex with a long RP interval and retrograde P waves. Unlike other supraventricular arrhythmias such as atrioventricular nodal reentrant tachycardia or atrioventricular reentrant tachycardia (AVRT), PJRT is often incessant and highly recurrent, carrying an increased risk of heart failure and tachycardiomyopathy. Clinical presentation is often nonspecific, ranging from palpitations and fatigue to reduced exercise tolerance and signs of cardiac decompensation. Definitive diagnosis relies on electrophysiological testing, while radiofrequency catheter ablation of the accessory pathway has emerged as a safe and highly effective treatment, providing definitive arrhythmia control and preventing long-term complications[1-3].

Case report: We report the case of an 11-year-old girl who had been under cardiology follow-up since birth due to a muscular ventricular septal defect and intermittent Wolff-Parkinson-White syndrome. Her first symptomatic tachycardia episode occurred at the age of four, when ECG revealed intermittent atrial tachycardia with features of PJRT. Clinical examination and initial investigations excluded structural heart disease, while multiple ECG recordings confirmed the presence of supraventricular tachycardia. A 48-hour Holter monitor demonstrated persistent delta waves without paroxysmal supraventricular tachycardia episodes. Despite antiarrhythmic therapy, tachycardia persisted. Electrophysiological study confirmed the presence of both AVRT and PJRT, and radiofrequency ablation of two accessory pathways successfully terminated the arrhythmia.

Conclusion: This case highlights the importance of timely recognition and treatment of PJRT in pediatric patients. Radiofrequency catheter ablation proved to be a safe and highly effective therapeutic option, preventing the development of secondary dilated cardiomyopathy or tachycardiomyopathy.

RECEIVED:
October 1, 2025

ACCEPTED:
October 22, 2025

LITERATURE

1. Kylat RI, Samson RA. Permanent junctional reciprocating tachycardia in infants and Children. J Arrhythm. 2019 May 15;35(3):494-498. https://doi.org/10.1002/joa3.12193
2. Katritsis D, Morady F. Clinical Cardiac Electrophysiology. Elsevier. Netherlands, 2021. Available at: https://www.perlego.com/book/2937934/clinical-cardiac-electrophysiology-ebook-a-practical-guide (accessed September 3, 2025).
3. Ergül Y, Sulu A, Çaran B, Kafalı HC, Akdeniz C, Tuzcu V. Clinical Course and Electrophysiological Characteristics of Permanent Junctional Reciprocating Tachycardia in Children. Anatol J Cardiol. 2022 Dec;26(12):880-885. https://doi.org/10.5152/AnatolJCardiol.2022.1948