

Double-pace tachycardia and pseudo-pacemaker syndrome as potential precursors of atrial fibrillation and flutter. A curious manifestation

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Introduction: Ectopic foci of the pulmonary veins are the primary triggers of atrial fibrillation (AF). However, extra-pulmonary triggers are identified in 5 to 10% of the patients with AF. **Methods and Results:** We reported the case of a man, 20 years old, with persistent AF and symptomatic atrial flutter (AFa), resistant to the use of drug treatment. There was no structural heart disease identified. The indexed left atrial volume on the echocardiogram was XX ml/m², and the ventricular ejection fraction was XX %. He was referred for radiofrequency ablation (ABI). At the beginning of the procedure, he was in peri-tricuspid AFa, and ABI of the cavo-tricuspid isthmus was performed, interrupting the tachycardia and obtaining a bidirectional lock line. The cardiac rhythm underlying the interruption of AFa was sinus-driven to the ventricles in a double nodal pathway atrioventricular (AV) conduction pattern, sometimes manifesting itself in the curious form of double-step tachycardia. Which is characterized by each sinus beat generating two ventricular complexes, one led by the slow pathway. Conduction via the fast pathway was intermittent, with periods of exclusive AV conduction occurring via the slow pathway with an ultra-long PR interval, with atrial systole simultaneous to the ventricular systole of the preceding beat. Ablation of the slow pathway was not performed due to the potential risk of the AV block nor of the fast pathway, considering the potential risk of the occurrence of “pseudo-pacemaker syndrome” due to an ultra-long AV interval. The pulmonary veins were isolated. Postoperatively, the patient was kept under continuous electrocardiographic monitoring via telemetry, frequently manifesting a “frog sign” concomitant with moments of AV conduction with ultra-long PR intervals and simultaneous atrial and ventricular systoles. Characteristically, this symptomatology was identified in a long-standing history, preceding the occurrence of AF itself. The patient refused a new session to attempt ablation of one of the nodal pathways, as he did not accept the possibility of needing a pacemaker implant. **Conclusion:** AF has a diverse etiopathogenic externalization. Dual nodal pathways manifested in the form of double-step tachycardia or ultra-long PR interval are included in this spectrum of externalization