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A cold success, a hot complication: the journey from cryoablation to transient AV block: a case report

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Introduction: Cryoablation of accessory pathways is one of the catheter-based treatment methods for supraventricular tachycardias, in which the application of low temperatures interrupts electrical impulse conduction through the accessory pathway.[1] One of the advantages of this method is the ability to assess the effects of cooling during the procedure, allowing for a timely response if undesirable changes in cardiac conduction occur. Despite its favorable safety profile, cryoablation carries certain risks, particularly when the accessory pathway is located close to the heart's normal conduction system.[2] In such circumstances, transient disturbances in atrioventricular (AV) conduction may occur, including AV block, which requires increased vigilance and continuous monitoring of electrocardiographic changes.[3] Timely recognition of complications, awareness of potential procedural risks, and coordinated action by the electrophysiology team are essential for patient safety. Nurses and nursing technicians play an important role in this process through continuous monitoring of cardiac rhythm, recognition of changes on the monitor, preparation of equipment for potential emergency interventions, and timely notification of the physician. This case report focuses on the occurrence of transient AV block during accessory pathway cryoablation, emphasizing the timely recognition of the complication, the response of the electrophysiology team, and the importance of teamwork in maintaining patient safety.

Case report: A patient with Wolff–Parkinson–White (WPW) syndrome and documented atrioventricular re-entrant tachycardia (AVRT) was referred for an electrophysiological study and cryoablation of an accessory pathway. Three-dimensional mapping identified a right anteroseptal accessory pathway. During cryoablation, loss of pre-excitation was observed. However, during a subsequent application, prolongation of AV conduction followed by a brief, transient AV block occurred. Cryoenergy delivery was immediately discontinued, after which normal AV conduction was restored. After 30 minutes of observation, no recovery of conduction through the accessory pathway was detected, indicating a successful ablation outcome.

Conclusion: This case shows that despite the advantages of cryoablation, undesirable changes in cardiac conduction may still occur during the procedure. Timely recognition of prolonged AV conduction and transient AV block, followed by discontinuation of cryoenergy delivery, was important in preserving normal conduction. The case also highlights the importance of continuous patient monitoring and good cooperation among all team members. Awareness of potential complications and a timely response are essential for the safe performance of electrophysiological procedures.

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LITERATURE

1. Liberman L, Spar DS, Nash MC, Silver ES. Cryoablation of anteroseptal accessory pathways with a His bundle electrogram on the ablation catheter. Indian Pacing Electrophysiol J. 2014;14(6):284-290. https://doi.org/10.1016/s0972-6292(16)30816-6
2. Bravo L, Atienza F, Eidelman G, Ávila P, Pelliza M, Castellanos E, et al. Safety and efficacy of cryoablation vs. radiofrequency ablation of septal accessory pathways: systematic review of the literature and meta-analyses. Europace. 2018;20(8):1334-1342. https://doi.org/10.1093/europace/eux269
3. González-Torrecilla E, Arenal A, Atienza F, Almendral J. Transient atrioventricular block shortly after uneventful cryoablation of atrioventricular nodal re-entrant tachycardias: report of two cases. Europace. 2007;9(10):927-930. https://doi.org/10.1093/europace/eum127