Bezold-Jarisch-like reflex during radiofrequency ablation of the pulmonary vein tissue in patients with paroxysmal atrial fibrillation

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摘要

Abstract

INTRODUCTION: Information is lacking about the occurrence of ablation-related proarrhythmic events during application of radiofrequency (RF) energy at the pulmonary veins in patients with paroxysmal focal atrial fibrillation. The purpose of this study was to assess the theoretical risk of reflex bradycardia and hypotension response during RF ablation of these regions rich in endocardial nerve terminals. METHODS AND RESULTS: Among the 40 consecutive patients (29 men, 11 women; mean age 65+/-12 years) with clinically documented frequent attacks of paroxysmal atrial fibrillation who underwent superior pulmonary vein ablation for left focal atrial fibrillation, 6 patients (15%) developed bradycardia-hypotension syndrome during energy delivery. A single atrial fibrillation trigger focus in the left or right superior pulmonary vein was found in 3 and 1 patients, respectively. Two patients had two trigger foci originating from the orifice or proximal part of both superior pulmonary veins. After RF current was applied for a period of 14+/-10 seconds, 2 patients developed junctional rhythm and sinus bradycardia, another 2 patients had profound sinus bradycardia, 1 patient had two episodes of sudden onset of complete AV block with resultant 9.5-second asystole, and 1 patient showed profound sinus bradycardia, transient AV block, and an 8-second asystole due to sinus arrest. Blood pressure fell when any substantial bradyarrhythmias occurred. All 6 patients were free of rhythm disturbances during the postablation follow-up period (mean 8+/-2 months). CONCLUSION: RF catheter ablation of the pulmonary vein tissues could evoke a variety of profound bradycardia-hypotension responses. The Bezold-Jarisch-like reflex might be the underlying mechanism.