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Bipolar radiofrequency ablation of parahisian premature ventricular contractions.

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Topic(s):
Ablation of Ventricular Arrhythmias

Citation:
Background: Conventional radiofrequency catheter ablation (RFCA) of premature ventricular complexes (PVC) is effective method of treatment. However, close proximity of His bundle can be a challenge. A bipolar ablation results with more concentric lesion formation and can be an interesting alternative to conventional RFCA in some difficult scenarios.

Case report: A 77-year old female after failure of antiarrhythmic drugs underwent unsuccessful conventional ablation of frequent and symptomatic PVCs. The procedure performed at the site of PVC origin with 3,5mm ablation catheter (AC) was limited by close proximity of His bundle and RF applications caused temporary disturbances in conduction through atrioventricular (AV) node. Thus, we decided to switch to bipolar ablation. AC was located near the area of earliest activation of PVC, in close proximity of AV node. A second 4mm ablation catheter was introduced to the left-ventricular sites of earliest PVC activation. This catheter was connected instead of dispersive patch, to serve as a return electrode (RE). Bipolar ablation delivered between AC and RE, with power titrated up to 33W, led to immediate elimination of PVCs. A clear His signal was visible on proximal rings of RE throughout whole 180s of bipolar RFCA. There were no complications. The follow-up lasts 3 months – the PVC burden dropped to zero and the patient remains symptom-free.

Conclusion: Differences in current flow and more concentric lesion formation using bipolar RFCA, combined with careful power titration, can result in safe and effective ablation, even in close proximity of His bundle. Further studies on safety and effectiveness of bipolar RFCA are warranted.
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Conclusion: Differences in current flow and more concentric lesion formation using bipolar RFCA, combined with careful power titration, can result in safe and effective ablation, even in close proximity of His bundle. Further studies on safety and effectiveness of bipolar RFCA are warranted.