

Intracardiac Echocardiography for Subvalvular Ablation of Tricuspid Ring PVCs

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Abstract

A case is presented demonstrating the value of intracardiac echocardiography during ablation of tricuspid ring premature ventricular complexes.

Case Synopsis

A 27-year-old female patient with frequent premature ventricular complexes (PVCs) was referred for catheter ablation. The PVC exhibited a left bundle branch block, left axis QRS morphology (Fig. A). During the PVC intracardiac mapping localized the earliest activation at the infero-lateral part of the tricuspid ring. (Fig. B). Only temporary success was achieved by energy delivery at this site. Subsequently, an intracardiac echocardiography (ICE) catheter was introduced for real-time guidance (AcuNav, Biosense Webster) and a steerable sheath (SJM, Agilis sheath) was used, through which the ablation catheter (SmartTouch, SF, Thermocool, Biosense Webster) was looped back under the posterior leaflet of the tricuspid valve (Fig. C and D). At this subvalvular location, radiofrequency ablation resulted in the complete elimination of PVCs. During three years of follow-up, the patient remains free of PVCs.

Discussion

The tricuspid annulus is a common source of idiopathic PVCs originating from the right ventricle. For the elimination of these PVCs, subvalvular placement of the ablation catheter has been described¹. This case demonstrates the benefit of real-time visualization using ICE during this manoeuvre.

Key Words

Intracardiac Echocardiography, Premature Ventricular Complexes, Tricuspid Annulus

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Click for Video: Intracardiac echocardiography showing the ablation catheter under the posterior leaflet of the tricuspid valve

References

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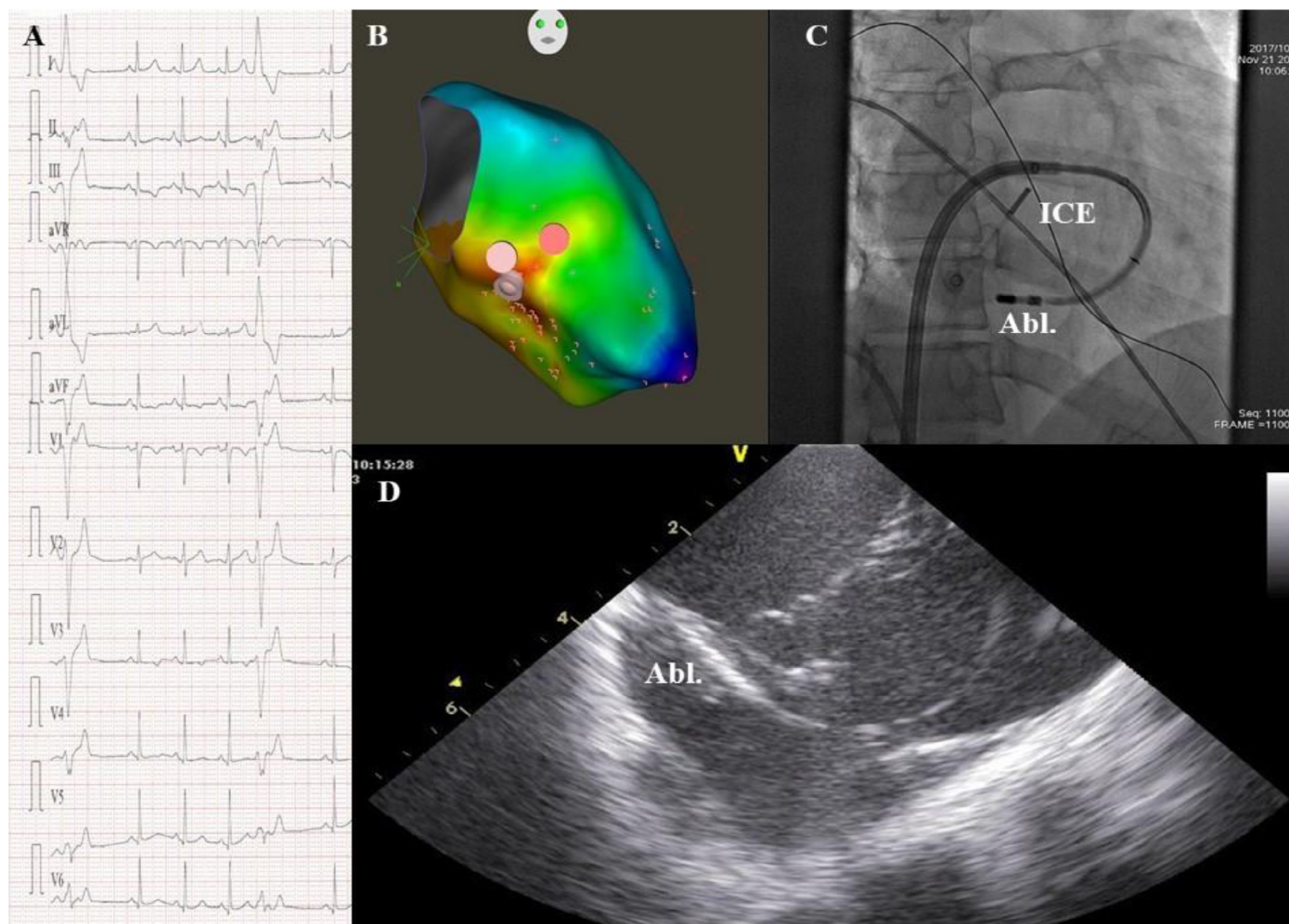


Figure 1:

A. 12-lead ECG of PVCs. **B.** Activation map of the right ventricle from RAO view - Pink dots mark the location of ablation. The lower pink sphere marks the successful subvalvular ablation. **C.** Fluoroscopic image - Position of the ablation catheter in RAO view. **D.** Intracardiac echocardiography image- It shows the ablation catheter under the tricuspid valve. (ECG= electrocardiogram, PVC= premature ventricular complex, RAO= right anterior oblique, ICE = intracardiac echocardiography, Abl. = ablation catheter)