

adenosine did not reveal any left atrial–PV conduction in any vein. The patient was symptom free immediately after the third procedure and antiarrhythmic therapy was discontinued 3 months during the blanking period. Thirty months later she remains free of symptoms in the absence of any therapy.

DISCUSSION

Pulmonary vein isolation with use of radiofrequency ablation is the most common ablation technique for paroxysmal and/or persistent AF. Using cryothermic ablation via a cryoballoon is an alternative rapidly growing technique and the second generation cryoballoon is considered to deliver more effective lesions.⁴ These approaches, however, are limited by fixed balloon sizes which do not sufficiently account for the variable PV anatomy. We assume that the accessory right PV rather than the minor electrical activity in the left superior PV was the main cause of arrhythmogenicity and AF recurrences in our case. This challenging anatomy did not allow long-term PV isolation despite the use of the novel contact force irrigated catheter in the second procedure.

The key message of the present case report is to indicate the role of preprocedural imaging and present specific techniques that may be used in order to occlude any vein in cryoablation procedures. Preprocedural imaging of the left atrium and PVs (e.g. by computed tomography, magnetic resonance imaging, rotational angiography) reveals the individual cardiac anatomy and facilitates catheter ablation, especially after a failed procedure. Finally, the extreme hockey-stick transformation with the support of left atrium roof is recommended in inferior PVs with a perpendicular outlet.

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Figure 1. Preprocedural imaging of the left atrium and pulmonary veins by magnetic resonance imaging exhibited a right middle pulmonary vein and a perpendicular outlet of a right lower pulmonary vein.

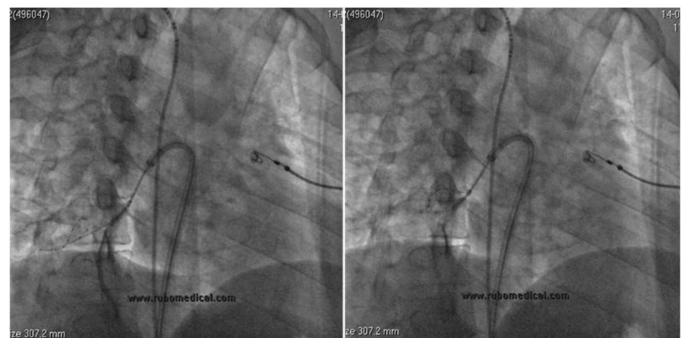


Figure 2. The sheath is advanced with maximal bend to roof of the left atrium, allowing the balloon to be pushed into the inferior part of the pulmonary vein ostium resulting in an extreme hockey stick configuration and complete occlusion (right panel) while the Achieve® Catheter is moved towards the ostium of the right inferior pulmonary vein (left panel).