The role of imaging to support catheter ablation of atrial fibrillation

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Abstract

Atrial fibrillation (AF) ablation is a complex procedure that requires transseptal puncture and extensive manipulation with catheter(s) in the left atrium and pulmonary veins. Individual anatomy of these structures contributes to a challenge of AF ablation. The proximity of surrounding structures, such as esophagus, further increases risk of complications of this procedure. Increased risk of intracardiac thrombosis associated with AF is another factor that may complicate management of these patients. For all these reasons, imaging techniques play increasingly important role. Preprocedural imaging becomes important not only to rule out thrombus but also for assessment of anatomy of the PVs and left atrium, left atrial size and the extent of a substrate. Various forms of imaging help significantly during the procedure both with identification of anatomy and with catheter navigation. Many studies have shown increased efficacy, safety and decreased fluoroscopy times. After the procedure, imaging techniques such as echocardiography, CT or MR imaging are useful to diagnose potential complications. This paper briefly reviews clinical utility of different imaging tools for ablation of AF.

Keywords

Atrial fibrillation; Catheter ablation; Imaging; Intracardiac echocardiography; CT angiography; MR imaging