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The Impact Of Real-Time Three Dimensional Transoesophageal Echocardiography Before Transcatheter Radiofrequency Ablation Of Atrial Fibrillation In Patients With Prosthetic Mechanical Mitral Valve

Mustafa Yildiz M.D., PhD, Prof.

Department of Cardiology, Istanbul University Cardiology Institute, Istanbul, Turkey.

Abstract

Atrial fibrillation is the most common arrhythmia following valvular heart surgery. Radiofrequence catheter ablation of atrial fibrillation in patients with prothetic mechanical mitral valve is feasible and relatively safe in experienced center. Implementation of real-time three dimensional transoesophageal echocardiography in atrial fibrillation can demonstrate on-line left atrial and left atrial appendix spontaneous echo contrast and thrombus. This condition makes the electrophysiologist allerted for the expected complications.

Introduction

A 57-year-old woman patient with prosthetic mechanical mitral valve was hospitalized for radiofrequency catheter ablation for symptomatic atrial fibrillation. Before the electrophysiological study, two dimensional and three dimensional transthoracic echocardiography showed mildly spontaneous echo contrast. Subsequently, real-time two and three dimensional transoesophageal echocardiography (x7–2t transducer on a Philips iE33 ultrasound system) was performed.

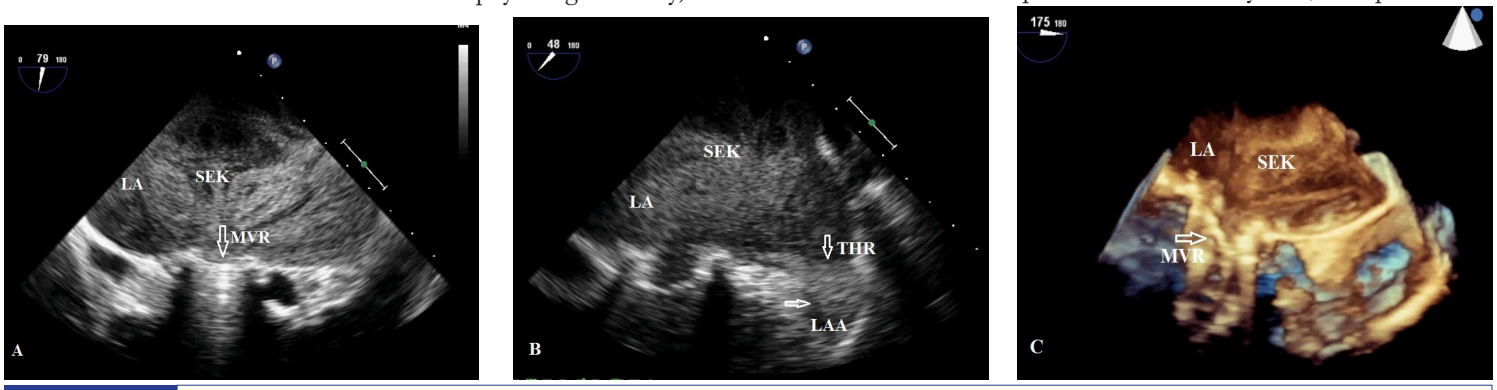

Figure:1 (A, B, C): **Real-time two and three dimensional transoesophageal echocardiography showed dense spontaneous echo contrast in the left atrial cavity and thrombus in the left atrial appendage.**
LA: Left atrium, SEK: Spontaneous echo contrast, MVR: Prosthetic mechanical mitral valve, LAA: Left atrial appendix, THR: Thrombus

Key Words:

Transcatheter Radiofrequency Ablation, Real-Time Three Dimensional Transoesophageal Echocardiography, Atrial Fibrillation, Prosthetic Mechanical Mitral Valve.

Disclosures:
None.

Corresponding Author:
Mustafa Yildiz, M.D., PhD., Prof.
Department of Cardiology,
Istanbul University Cardiology Institute,
Istanbul, Turkey.

It showed dense spontaneous echo contrast in the left atrial cavity and thrombus in the left atrial appendage (Figure 1A, 1B, 1C). Upon this the procedure of electrophysiological study and ablation droped out and we decided to follow up the patient with optimised medical therapy.

Atrial fibrillation is the most common arrhythmia following valvular heart surgery. It is associated with an increased morbidity and mortality risk in patients with prosthetic mechanical mitral valve. Therefore, restoration and maintenance of sinus rhythm is main target in these patients. Radiofrequency catheter ablation is the most effective treatment to restore and maintain sinus rhythm in differ-

ent conditions including atrioventricular reentrant tachycardia, atrial tachycardia and atrial flutter. Also, radiofrequence catheter ablation of atrial fibrillation in patients with prothetic mechanical mitral valve is feasible and relatively safe in experienced center.[1] Recently, in parallel with improvement in the quality of echocardiographic imaging, real-time three dimensional transoesophageal echocardiography may facilitate electrophysiological procedures during atrial fibrillation.[2] It is possible to obtain cross-sectional visualization of the left atrium, left atrial appendix, pulmonary veins, mitral valve annulus, and prosthetic valves. Finally, implementation of real-time three dimensional transoesophageal echocardiography in atrial fibrillation can demonstrate on-line left atrial and left atrial appendix spontaneous echo contrast and thrombus. This condition makes the electrophysiologist allerted for the expected complications.

References

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