ORİJİNAL GÖRÜNTÜ ORIGINAL IMAGE

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Missed Left Sided Accessory Pathway Ablation Through Coronary Sinus in a Patient with Prosthetic Mitral Valve: Original Image

Protez Mitral Kapaklı Bir Hastada Gözden Kaçmış Sol Aksesuar Yolun Koroner Sinüs Yolu ile Ablasyonu

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A 44-year-old patient with a long history of palpitations and who had bileaflet prosthetic mitral valve replacement (MVR) 9 years ago was admitted to our hospital for electrophysiological study and ablation. Electrocardiograms (ECG) obtained during palpitation events documented supraventricular tachycardia. His baseline 12-lead ECG showed pre-excitation with a presumed left sided accessory pathway (AP). The ejection fraction was 60%, as shown by echocardiography with a normally functioning mechanical mitral valve.

The electrophysiology study suggested the presence of a left AP responsible for tachycardia. To avoid damaging the mechanical valve with the ablation catheter during the procedure, we initially preferred to map the coronary sinus (CS) instead of using the trans-aortic approach directly. The ablation catheter tip was advanced into the CS with the hope of finding the responsible AP. After detailed and careful catheter mapping, the earliest AP potentials were recorded within the middle cardiac vein (Figures 1, 2).

Radiofrequency (RF) application at 45°C with an irrigated RF catheter was attempted during sinus rhythm at this point. After one minute of RF energy application delivered within the middle cardiac vein, the AP conduction was eliminated and pre-excitation was lost (Figure 3). Tachycardia could no longer be induced.

In subjects with a prosthetic mitral valve, treatment of the left AP dependent tachycardia is challenging. Radiofrequency catheter ablation is usually avoided or delayed in these patients because of the risk of prosthetic valve dysfunction due to trauma from the ablation catheter. The possibility of entrapment of the catheter in the mechanical mitral valve during manipulation represents a major concern.[1-5]

Patients who are candidates for mitral or tricuspid valve replacement and who have pre-excitation on ECG or paroxysmal supraventricular tachycardia attacks should be treated electrophysiologically before sur-

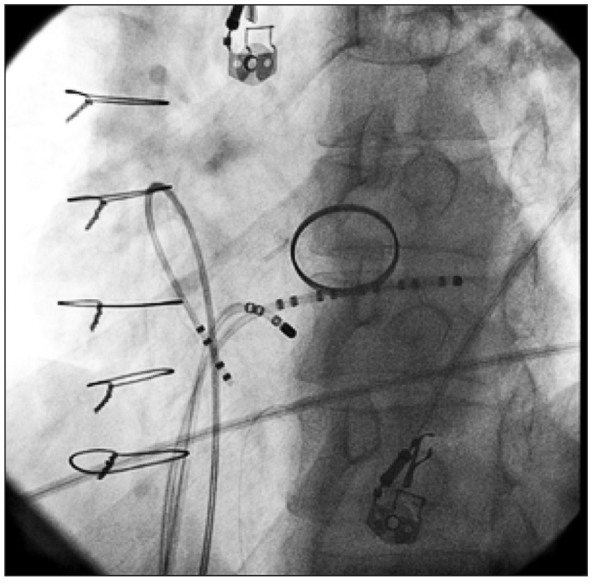

FIGURE 1: Left anterior oblique image during fluoroscopy shows prosthetic mitral valve ring, coronary sinus catheter, right ventricular catheter and ablation catheter which is inside the middle cardiac vein.

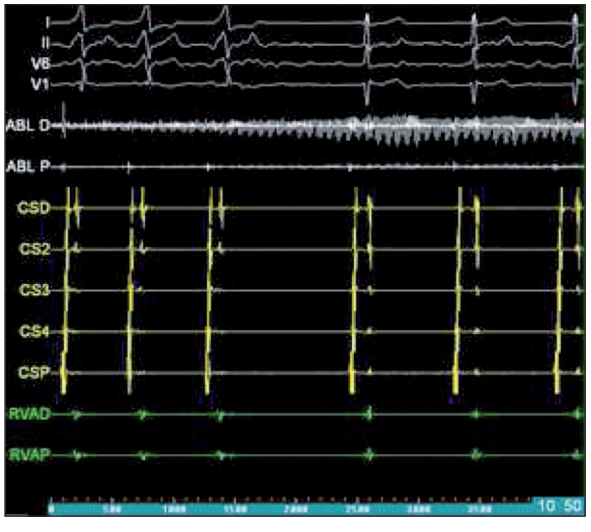

FIGURE 2: Ablation catheter tip EGM shows the earliest point, which is inside the middle cardiac vein.

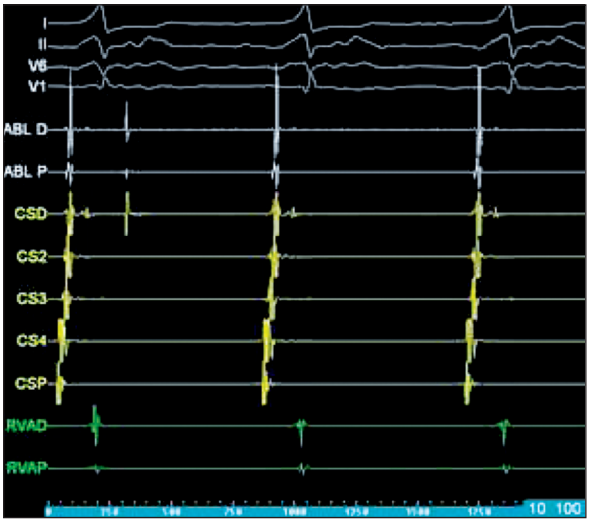

FIGURE 3:EGMs showing the moment during ablation when accessory pathway function was eliminated and pre-excitation on ECG was lost.

gery. This is because the possibility of atrial fibrillation after replacement of the valve is high and ablation of the responsible accessory pathway is more difficult in these patients. Hence, we call this patient missed, since he was operated upon before ablation of the accessory pathway, even though pre-excitation was evident on preoperative ECGs.

This case concludes that initial mapping of the coronary sinus might be a good strategy in MVR patients with a suspected left accessory pathway before trying the trans-aortic route in terms of the prevention of damage to the mechanical mitral valve.

Conflict of Interest

Authors declared no conflict of interest or financial support.

Authorship Contributions

All the authors contributed to the article.

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