RF ablation of WPW syndrome using Ensite Array balloon mapping and Hansen-Sensei robotic Cool-path catheter

Ensite Array balon haritalama ve Hansen-Sensei robot Cool-path kateter ile WPW sendromunun RF ablasyonla tedavisi

Wolff-Parkinson-White syndromes (WPW) are examples of preexcitation that affects approximately 0.15-0.2% of the general population (2). Of these individuals, 60-70% has no other heart disease, men are affected more often and typically, those affected are young, or healthy individuals. Death from WPW is secondary to the associated arrhythmias or mistreatment of them. RF ablation remains the first line therapy in symptomatic WPW patients.

A 22-year-old woman with known preexcitation, WPW was diagnosed at age of 11, had developed 4 episodes of sustained symptomatic palpitations with a pulse up to 190 beats/min., in the past 4 weeks. WPW had been diagnosed in grandfather and aunt. An echocardiography performed in the patient did not demonstrate any abnormalities.

The patient's WPW has been asymptomatic until 4 weeks prior to presentation. Due to the clinical manifestations, an electrophysiological study (EPS) was performed aiming to map and ablate the accessory pathway (3). Catheters were placed to right atrium, ventricle and coronary sinus (CS). During the programmed atrial stimulation, an antegrade transmitting right sided posterior septal pathway was found. Following multiple radiofrequency (RF) ablations, the pre-excitation signal was remained. The EPS was ended, in order to plan a new RF-ablation with the Ensite Array (SJM, St. Paul, MN, USA) (EA) balloon mapping (3). EA provides a virtual activation of intracardiac transmission on a beat- to -beat basis (3).

At the second EPS, a catheter was placed in the CS, a non-contact-mapping EA balloon at the right atrium and the ablation catheter by

Figure 1. Main monitor of Hansen-Sensei software, and under fluoroscopy, Ensite Array balloon in the right atrium, 10 poled catheter in Coronary Sinus, and an ablation catheter at the tip of the Remote Navigation System, Virtual Catheter

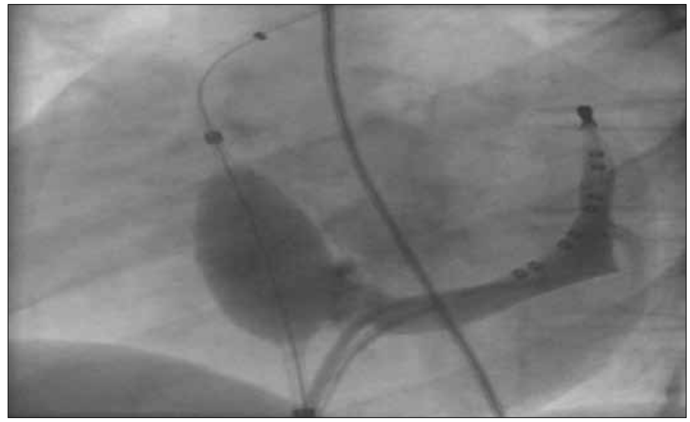

Figure 2. Coronary sinus imaging

means also superior and inferior vena cava, and right atrium is mapped. The EA balloon mapped capture beat documented an accessory pathway at the right side of the posterior septum (3). A CS imaging was also performed in order to assess an aneurysm, with a negative result.

RF-ablation was performed using remote navigation system, cool-path radiofrequency (Hansen-Sensei, Mountain View, CA, USA) (RNS) (4). The RNS improves the catheter stability and increase procedural success and the safety by avoiding serious complications (4). Focal RF-ablation of the accessory path through RNS was performed, with a total time of 606sec and 8983Ws energy. The ablation of the pathway was successful.

In this manner, although the high cost, we have decided to use both EA and RNS considering the young age, and the cardiac anatomy of the patient. In some cases, even though in WPW ablations, the EA and/or RNS usage could be considered in order to increase the success rate and minimize the potential complications of an ablation.

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