

Radiofrequency Ablation and Cryoablation in Patients with Multiple Arrhythmic Focus

Akın A., Karagöz T., Ertuğrul İ., Aykan H.H., Özer S., Alehan D., Özkutlu S.

Hacettepe University Faculty of Medicine, Department of Pediatric Cardiology, Ankara, Turkey

Introduction:

Multiple arrhythmic focus (MAF) are frequent in children with arrhythmia. In this report, we aimed to present our experience about impact of ablation in MAF.

Methods:

After detection of multiple arrhythmic focus (MAF) with electrophysiological studies, radiofrequency ablation (RFA) and cryoablation applied to 18 patients were enrolled in our department between October 2009 and December 2011. Twenty-eight ablation procedure was performed in 18 patients.

Results:

During this period, the ablation procedure was made in 210 patients and 18 (9%) had MAF. Atrioventricular nodal tachycardia (AVRT) was diagnosis in 69 patients (54 with WPW, 15 concealed accessory pathway) and 15 (22%) had multiple accessory pathway (MAP). Twelve patients were male, mean age was 12.2 years (4-18 years), and mean weight was 44.8 kg (15-70 kg). Follow-up period was 1 month-2 years. Thirteen patients diagnosed with Wolf Parkinson White syndrome (WPW), 1 patient had WPW plus atrioventricular nodal reenteran tachycardia (AVNRT), 1 patient had concealed accessory pathway (AVRT), 2 patient had atrial tachycardia, and 1 patient had AVRT plus AVNRT. One patient had 3, others had 2 focus. Recurrence was observed in one patients (WPW) after 24 hours. Transient complications developed in 3 patients (right bundle branch block, ST depression and atrial fibrillation). Procedure time was 147.5 ± 67.5 minutes, fluoroscopy time was 54.6 ± 36.6 minutes. RFA and cryoablasyon was performed in 10 patients at the same session, cryoablasyon plus RFA was successful in 9 patients. In 1 patient RFA failed but cryoablasyon was successful. RFA alone was applied in 8 patients; in 5 patients complete, and in 3 patients partial success was achieved. Complete success was % 89, partial success was 11%, recurrence was 4%, and transient complications was 11%.

Conclusions:

The rate of MAP in WPW has been reported 3.1-13.8%. Success rate 81-95%, and recurrence rate 2.1-11% has been reported after RFA. Multiple accesory pathway and MAF rates are higher in children with arrhythmia. Their main success and recurrence rates are similar to patients with singlearrhythmic focus. In patients when RFA can not be applied because the focus is close to the AV node, cryoablasyon can be applied in the same session succesfully.