

Electrophysiology–Ablation

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6-Month Follow-Up of Ablations for Idiopathic Ventricular Extrasystole/Tachycardia Performed with Conventional Method: A Single-Center Experience

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Aim& Background: Idiopathic ventricular extrasystoles (VES)/tachycardias originating from outflow tract (OT) are very commonly encountered in clinical practice. Ablations of these arrhythmias can be very difficult and time-consuming due to intermittent nature and complex anatomy of OT even if an expensive 3D electro-anatomical mapping system is used. In this case report, we would like to present long term follow-up of 29 consecutive patients who underwent VPS ablation performed with conventional technique using pace-mapping and the earliest activation.

Results: Of 29 patients, the mean age was 51.1±15.4 years and 67% (16) of them were female. All the patients were symptomatic and in sinus rhythm before the procedure and the mean daily VES burden percentage was 13.6±12.2. Using conventional mapping, the earliest activation spots were identified in RVOT free wall (8, 27%), RVOT septum (14, 48%), left coronary cusp (2, 6.9%), LVOT (2, 7%) and aortomitral continuity (3, 10%). Mean time of procedure was 96.7±33.1 min and mean RF time was 10.6±9.2 min. Acute procedural success was 93% (27) and at 1-month visit, all but 4 patients (86.2%) had significant symptomatic improvement with no symptoms at all (%86.2). While 23 patients were completely asymptomatic with no need for drugs at 6-month visit, the symptomatic status was unchanged in 5 and was deteriorated in one patient who had a change in drug regimen. Aside from 2 vascular complications as mild inguinal hematoma formation and 1 minimal pericardial effusion, no other major complication was observed.

Conclusion: Ablation of idiopathic ventricular extrasystole/tachycardia performed with a conventional technique still constitutes a safe and reliable method, and may be tried before the utilization of a 3D-mapping system as the initial choice.

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Decreased Left Atrial Appendage Velocity Does Not Predict Recurrence at Long-Term in Patients who Underwent Cryoballoon-Ablation for Atrial Fibrillation

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Aim: Although catheter ablation for atrial fibrillation has been shown to improve left atrial (LA) reverse remodelling, effect of cryoballoon-ablation (CBA) on LA appendage velocities (LAAV) has not been examined in depth. We aimed to determine the change in LAAV after CBA and to analyze its association with late AF recurrence rate at 6 months.

Results: Pre-procedural and post-procedural (6 months) LAAV were measured by TEE in 33 consecutive patients with paroxysmal AF who underwent CBA for AF. Mean LA diameter was 43.1±0.4 cm and 17 patients were male (51%). At 6-month follow-up, 10 (30%) patients had symptomatic and/or long-lasting recurrence in ECG or holter recordings. Mean pre-proc LAAV was 55.5±29.5 cm/sec and mean post-proc LAAV was 43.5±18.1 cm/sec with a mean difference of -11.9±33.2 cm/sec. Elderly patients with coronary artery disease and higher CHADS2VASC scores had significantly increased risk for AF recurrence while more LAAV decrease in recurrence group did not reach statistical significance, but showed a trend. Table-1 summarizes patient characteristics according to AF recurrence.

Conclusion: Although presence of coronary artery disease, higher CHADS2VASC scores and older age predicted increased likelihood for AF recurrence after CBA for AF, LAAV decrease was similar in patients with or without late AF recurrence.

Table-1

	No Recurrence (n=23)	Recurrence (n=10)	p
Age	51.9±12.2	64.0±11.7	0.013
Male Gender	12 (52)	5 (50)	1.000
Hypertension	12 (52)	7 (70)	0.455
Diabetes	2 (9)	3 (30)	0.149
Coronary artery disease	4 (17)	6 (60)	0.035
Heart failure	0 (0)	2 (20)	0.085
CHADS2VASC Score	1.4±1.0	3.3±1.7	0.007
Systolic pulmonary artery pressure (mmHg)	31.1±6.5	40.6±12.7	0.086
Left atrial diameter (cm)	4.3±0.4	4.3±0.4	1.000
Preprocedural LAAV	56.9±30.1	52.3±29.7	0.814
Postprocedural LAAV	46.0±16.9	37.8±20.4	0.092
Difference in LAAV	-10.8±33.7	-14.4±33.7	0.092

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Early Repolarization and Short QT Interval Correlation in Healthy Population

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Background: Early repolarization (ER) is phenomenon of ECG is noted in 1% to 2% of the adult population. Experimental studies, case reports and clinical studies have shown ER potential arrhythmogenic effect as ventricular fibrillation and sudden cardiac death. ER in the inferior and/or lateral leads has also been shown to increase the risk of future arrhythmic death in subjects of general population without previously documented life-threatening arrhythmic even (ER ECG pattern). Recent studies supported an association between short QT syndrome and early repolarization. The aim of this study was to study the prevalence of ER and its relationship with the QTc interval in healthy subjects.

Methods: This study included 80 healthy participants with early repolarization ECG (n=40) and normal ECG (n=40) (82.5 % of whom were men; mean age, 38.9±8.5 years) Study population matched one-to-one according to age and gender. All patients underwent a 12-lead ECG after at least 10 min of resting by sitting. The ECG parameters such as QT, QTc, JT, Jtc, QT-apex, JT-apex and T-peak to T-end were utilized in all derivations and mean values were calculated. All electrocardiograms (ECGs) were analyzed for the presence of J-point elevation in inferior (II,III and Avf) and lateral (I, aV L and V4-V6) leads.

Results: There was no statistically significant difference about the demographic characteristics between the 2 groups. Mean heart rate was 69.87±14.89 in early repolarization group and 74.55±13.86 in normal group. There were statistically significant difference with QT, QTc, JT, Jtc, QT-apex interval between early repolarization and normal group. Mean QT and QTc interval were 371.69±58.54 and 379.46±21.93 msn in ER, 357.29±28.77 and 410.20±22.50 msn in normal group (respectively p=0.027 and p<0.001). Mean JT and Jtc interval were 290.56±28.26 and 331.13±24.59 msn in ER, 273±29.96 and 296.21±22.33 msn in normal group (respectively p=0.013 and p<0.001). Mean QT-apex was 303.13±29.49 in ER, 286.99±28.23 msn in normal group (p=0.015).

Conclusions: In our study early repolarization group had shorter QT, QTc interval and JT, Jtc, QT-apex interval than normal healthy population with similar heart rate. Future clinical and experimental studies should focus on the relationship between QT interval and increased risk for arrhythmic events in early repolarization.

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Impact of Metabolic Syndrome on Atrial Fibrillation Recurrence Post Cryoballoon Catheter Ablation

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Background: The metabolic syndrome (MS), a proinflammatory state with hypertension, diabetes, dyslipidemia, and obesity, is presumed to be a close associate of AF. However, it is not known whether MS has any direct influence on recurrence in AF patients undergoing ablation.

Objective: The aim of this study was to investigate impact of MS on outcomes of catheter ablation in patients with PAF in terms of recurrence after cryoballoon catheter ablation.

Methods: A total of 88 consecutive patients who underwent their first cryoballoon catheter ablation of symptomatic, medication-refractory PAF were prospectively followed for recurrence and MS components, and were categorized as with and without recurrence.

Results: After 15±7 months of follow-up, there were 66 patients without recurrence (Group 1) and 22 patients with recurrence (Group 2). There were no significant differences in any of the preprocedural variables between the both groups, except for the time between first diagnosis of PAF and cryoballoon ablation procedure. The MS was statistically higher in recurrence group compared to Group 1 (59% vs 23%; P:0.002). A Cox regression multivariate analysis of the variables including the time between first diagnosis of PAF and cryoballoon ablation procedure demonstrated that the MS was an independent predictor of AF recurrence after a single cryoballoon ablation procedure [OR: 3.92 (1.22-12.58); 95% CI, P:0.001].

Conclusion: This study demonstrated that the presence of MS predicted higher recurrence after single-catheter ablation in patients with PAF

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Early Results of Ablation in Left Approach Atrioventricular Nodal Reentry Tachycardia (AVNRT)

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Atrioventricular nodal reentry tachycardia (AVNRT) is the most common arrhythmia in electrophysiology laboratory. The classical approach to the treatment is ablation of slow or fast pathway with right approach. In 3% of cases, conventional classical approach is insufficient and tachycardia recurs again. In aggressive right-hand side