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Atrioventricular nodal reentrant tachycardia ablation during ongoing tachycardia: is it safe?
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Purpose: The aim of this study was to evaluate the clinical and electrophysiological features and the short- and long-term results of slow pathway radiofrequency ablation during ongoing tachycardia in patients with atrioventricular nodal reentrant tachycardia (AVNRT).

Methods: A total of 282 consecutive patients with AVNRT were enrolled. Patients whose tachycardia episodes could not be controlled during RF application and who underwent slow pathway ablation or modification during ongoing tachycardia with close follow-up of ventriculoatrial (VA) conduction formed the study group (Group-1, n=16). Patients who underwent formal ablation during sinus rhythm with close follow-up of functional rhythm and atrioventricular (AV) conduction formed the control group (Group-2, n=266).

Results: Of the clinical characteristics, only the frequency of AVNRT attacks were higher in Group-1 (3.3 vs 2.1 attacks/month, p=0.04). Among the baseline electrophysiological measurements anterograde AV node effective refractory period (235±10 ms vs 231±22 ms), Wenckebach cycle length (330±23 ms vs. 325±32 ms), and tachycardia cycle length (356±44 ms vs. 337±40 ms) were slightly longer in group 1 than in group 2 which were not statistically significant (p=0.05). However, the echo zone was significantly long-lasting in Group-1 patients (78±25 ms, range 40-130 ms) when compared to Group-2 patients (47±18 ms, range 20-110 ms) (p=0.001). The immediate procedural success rate was 100% in both groups. There were no significant differences between groups regarding the mean number (5.2±4.2 vs. 5.8±3.9) of RF applications, total procedure (42±30.5 min vs. 40±29.4 min) and fluoroscopy (11.4±8.5 min vs. 12.2±9.3 min) times (p=0.03 vs. 48). All patients were followed-up for 29.7±7 months; only 2 patients (0.8%) in Group-2 required (p=0.05). PR lengthening was observed in 2 patients (>8% in Group-2 and none in Group-1 (p=0.05); no permanent AV block or major complication were observed.

Conclusions: Catheter ablation or modification of the slow pathway during ongoing AVNRT seems to be safe and effective when tachycardia episodes cannot be controlled during RF energy applications. However, because of the critical anatomic location, slow pathway ablation during sinus rhythm should be preferred whenever possible.

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Use of panoramic body surface electrocardiographic for mapping of tachyarhythms in adults with congenital heart disease
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Introduction: In patients with congenital heart disease the complex underlying anatomy and dilatation of the cardiac chambers demands extensive invasive intracardiac mapping. We assessed the clinical utility of a novel noninvasive, single beat simultaneous electrocardiographic mapping system (ECVUE™) in diagnosing complex and/or multiple tachyarhythmias in this population.

Methods: Consecutive patients with congenital heart disease and previous endocardial ablation procedures were selected. Noninvasive body surface ECVUE™ simultaneous spatial mapping was performed both pre- and intra-procedurally to localize the arrhythmia origin and to guide ablation.

Results: Six patients (4 female) with a median age of 28 years were studied. Patients’ anatomical background included left atrial isomerism, DTGA post arterial switch, pulmonary atresia, surgically repaired partial AVSD, pulmonary stenosis with Waterston shunt and Ebstein’s anomaly.

Non-invasive ECVUE™ evaluated 13 arrhythmias across the 6 patients (2.17 arrhythmias/patient) and correctly diagnosed the region of interest in 12 of 13 (92%) arrhythmias. Median procedure duration and fluoroscopy time were 233 min and 14 min, respectively. Remote magnetic navigation was used in 2 procedures. Acute ablation success was achieved in 5 of 6 patients, and in 11 of 13 arrhythmias.

Conclusions: Non-invasive panoramic mapping, via ECVUE™, is a novel tool for evaluating complex arrhythmias, particularly helpful in patients with congenital anomalies and previously failed ablation. It can be used in conjunction with other technologies such as remote magnetic navigation, facilitates ablation of multiple arrhythmias in single procedure, with no longer than expected procedure length or fluoroscopy time.

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Retinal vein and artery occlusions: a risk factor for stroke in atrial fibrillation
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Purpose: We investigated whether a history of retinal vascular occlusion was an independent risk factor of stroke in patients with atrial fibrillation.

Methods: We performed a retrospective study on a nationwide cohort with atrial fibrillation from 1997 to 2008. The rate of stroke/systemic thromboembolism/transitory ischemic attack (stroke/TE/TIA) was determined for atrial fibrillation patients with and without a history of retinal vascular occlusion. A Cox regression analysis, adjusted for risk factors and medications, was performed to determine the independent predictive value of retinal arterial or venous occlusion for the risk of ischemic stroke or TE in atrial fibrillation patients.

Results: We included 87,202 patients with non-valvular atrial fibrillation. At baseline, a history of retinal arterial occlusion was diagnosed in 224 patients (0.28%) and a retinal venous occlusion in 361 (0.41%). Patients without retinal occlusion had a rate of stroke/TE/TIA of 4.52 (95% confidence interval (CI) 4.44-4.60) for patients with retinal arterial occlusion, the rate of stroke/TE/TIA was 8.16 (95% CI 6.35-10.49) per 100 person-years, and for patients with retinal venous occlusion, 7.28 (95% CI 5.93-8.94) per 100 person-years. In multivariate analysis, both retinal arterial occlusions (hazard ratio (HR) 1.39, [95% CI 1.08-1.79] and retinal venous occlusions (HR 1.26 [95% CI 1.02-1.54] were associated with an increased risk of future stroke/TE/TIA.

Conclusion: A history of retinal arterial or retinal venous occlusion is associated with an increased risk of stroke/TE/TIA in patients with atrial fibrillation. Thus, prior retinal vascular occlusion may be considered a previous thromboembolic event when evaluating stroke risk in patients with atrial fibrillation.

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Echocardiographic diastolic parameter as a strong predictor of new-onset atrial fibrillation: results from a prospective study in 552 elderly people for 4 years follow-up
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Purpose: The incidence of the development of new-onset atrial fibrillation (AF) is increasing with age. Diastolic dysfunction accompanied with age and hyperten-