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Unpredictable long-term follow-up of untreated preexcitation syndrome

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Background: Accessory pathway (AP) ablation is currently performed in patients with a preexcitation syndrome (PS); natural follow-up is based on old studies. The purpose of the study was to report data of untreated patients with PS, studied 2 times at least one year of interval.

Methods: 2 baseline electrophysiological study (EPS) were performed within 1 to 25 years of one another (mean 9.5±5.7) in 104 patients, 58 males, 46 females, aged initially from 4 to 67 y (30±16), with overt PS. First EPS was indicated for syncope (n=10), atrioventricular reentrant tachycardias (AVRT)(n=51), atrial fibrillation (AF)(n=6), spontaneous malignant form (AF conducted at very high rates over AP)(n=4) or for asymptomatic PS (n=33). The protocol was similar, performed in control state (CS) and after isoproterenol.

Results: At 2nd EPS, among patients studied for syncope at EPS1, 2 have still syncope, 3 have AVRT, 1 has AF, 3 are asymptomatic. Among patients with AVRT at EPS1, 38 (74.5%) have AVRT, 8 are asymptomatic, 3 had syncope, 3 have AF. Among patients with AF, 2 present with a malignant form, 2 had AVRT, 1 is asymptomatic. Among asymptomatic patients, 3 present with a malignant form, 17 (53%) remain asymptomatic, 7 have AVRT, 4 have syncope, 1 has AF. All AVRT or AF but 1 occurred in patients with inducible AVRT or AF at EPS1. The higher rate conducted by AP was lower in CS and after isoproterenol at EPS2 (166±80bpm, 191±90) than at EPS1 (191±67, 241±67)(p<0.01). AP refractory periods increased from 268±73ms to 283±62 in CS (p<0.03) and from 202±46 to 244±54ms after isoproterenol (p<0.03). AP has lost anterograde conduction properties in 28 patients. AVRT was induced in 5 of 27 asymptomatic PS with initially negative EPS. Two patients with initially poor anterograde conduction over AP have a very rapid conduction over AP several years later.

Conclusions: We generally report an improvement of electrophysiological data with the time; however AVRT induction remains present in 74.5% of cases; unexpected changes may occur in 2% of patients considered initially at low risk who developed a dramatic shortening of AP refractory period several years after initial measurement.

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Elderly patients benefit from the evaluation of their tachycardia

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Too often, tachycardias of elderly patients are medically treated without evaluation of their mechanism. The purpose of the study was to look for the influence of age on clinical and electrophysiological data and long-term follow-up of patients with paroxysmal supraventricular tachycardia (SVT).

Methods: SVT was induced in 1690 patients, 996 females, mean age 49±19 years referred for regular tachycardia. Clinical history, SVT-related complications, echocardiography, results of electrophysiological study, methods of treatment were collected.

Results: 269 patients with SVT were aged from 70 to 97 years (group I), 188 from 70 to 79 (group IA), 81 from 80 to 97 (group IB). Antiarrhythmic agents were prescribed in 23 for an erroneous diagnosis of atrial tachycardia. They were compared to 1421 patients <70 years (group II). Heart disease was more frequent in group I (26%) (group IA,30%, group IB,18%) than in group II (9%) (p<0.0001). Atypical and typical AV node reentrant tachycardia were more frequent in group I (94%) than in group II (80%) and concealed acesory pathway was less frequent in group I (6%), Group IA,7%, IB,5%) than in group II (20%). SVT-related adverse events were more frequent in group I (26%) (p<0.0001) (group IA,25%,group IB,29%) than in group II (11%). During follow-up (3±3 years), SVT ablation was indicated more frequently in group I (73%) (p=0.002) (group IA,73%, group IB,72%) than in group II (62.5%). SVT ablation-related complications were more frequent in group I (7%) (p=0.001) than in group I (3.5%) or IA (4%). Late occurrence of atrial fibrillation (AF) was more frequent in group IA (10%) than in group II (5%) (p<0.04) (NS for the group IB (5%). Cardiac deaths were more frequent in group I (6%) (group IA,4%, group IB: 7.5%) than in group II (2%) (p<0.001).

Conclusions: SVT-related adverse presentation was frequent in elderly patients. We recommend the evaluation of regular SVT’s because they can be related to AVRT/AVRT. Curative treatment of these tachycardias can be done despite a risk of ablation-related major complications more frequent after 79 years and a risk of AF development and cardiac death higher in elderly patients than in younger patients.

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Score for arrhythmias detection in symptomatic patients after AV node re-entrant tachycardia ablation

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Background: Slow pathway radiofrequency ablation is used to treat atrioventricular nodal re-entrant tachycardia (AVNRT), but some patients remain symptomatic. The aim of study was to find predictive clinical factors of arrhythmias recurrence in symptomatic patients after AVNRT ablation and risk factors of AF occurrence.

Methods: Slow pathway ablation was performed in 929 patients with AVNRT and aged 52±18 years. RF energy, 65–70 watts was delivered, until AVNRT was not induced.

Results: 94 patients were excluded because ablation failed. During follow-up (mean 2.2±2 years), 136 (16%) had recurrence of symptoms. After invasive and non-invasive studies, symptoms were related to a sinus tachycardia (n=39) (5%) (group I), a tachycardia of other origin (atrial fibrillation (AF) (n=54) (6%) (group II) or AVNRT recurrence (n=43) (5%) (group III); 699 patients were asymptomatic (84%) (group IV). Group II was older (60±12 years) than group III (51±12, I (33±15.5), IV (52±18)(p<0.001), less frequently female (48%) than group I (85%), III (63%), IV (66%) (p<0.001) and had more frequently history of AF (30%) than group I (3%), III (0%) and IV (3%). Other factors as induction after isoproterenol, mechanism of AVNRT, history of syncope, number of RF applications, were not different at univariate and multivariate analysis. A score ≥3 based on age and history of AF (1 for age 45-60 years, 2 for age >60, 3 for history of AF) identified all symptomatic patients with AF. A score ≥0 excluded patients with AF-related symptoms. Patients with only sinus tachycardia and recurrent AVNRT can not be differentiated except by a younger patient, in case of sinus tachycardia.

Conclusions: Recurrence of symptoms after successful AVNRT ablation is relatively frequent (16%), but recurrence of AVNRT is only present in 5% of patients. A score ≥3 based on age and history of AF identified all patients at risk of AF. Careful management is required in these patients.

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A long accessory pathway refractory period measured by oesophageal atrial stimulation is always associated with a benign form of preexcitation syndrome

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Measurement of accessory pathway (AP) refractory period (RP) is required for the evaluation of preexcitation syndrome (PS). The purpose of study was to evaluate the measurement of AP-RP by transoesophageal electrophysiological study (EPS) and intracardiac EPS.