ABRABE OF COMMON ATRIAL FLUTTER: COMPARISON OF IRRIOTATED TIP CATHETERS

Purpose of the study: Irrigated tip (IT) increase lesion size and thereby seem to improve the efficacy of radiofrequency ablation. We compared IT versus 8 mm tip for first time ablation of common atrial flutter (AFI).

Methods: This multicenter prospective study (Jan-oct 99) included 145 consecutive patients with AFI, (61% male, 63 years) treated with 8 mm tip catheters (group I, n=81) or IT (group II, n=64). Applications were done during 60 sec with temperature controlled mode: 50-60°C up to 50-100 W in GP I or 80°C up to 52 W in GP II (17 ccm internal or 36 ccm/min internal saline flow rate). Time of procedure included 30 min wait.

Results: Success rate (complete isthmus block) of ablation was 100% with IT and 93% with 8 mm tip catheter (6 failures). A transient AV block was observed in group II. No other side effects were reported.

<table>
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<th>Applications duration (min)</th>
<th>X-Ray (min)</th>
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<tr>
<td>GP I</td>
<td>15 ± 13**</td>
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<tr>
<td>GP II</td>
<td>9 ± 6</td>
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<td>Student’s t-test: ns; no significant, * p = 0.01, ** p &lt; 0.001</td>
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Conclusions: Our data suggest that IT catheters are more effective and safe as 8 mm tip catheters. They facilitate a rapid achievement of bi-directional isthmus block (less RF pulses and duration of X-Ray).

RANODIZED COMPARISON BETWEEN POSTERIOR AND SEPTAL ISTMUS LINE OF ABLATION ON ATIV-VENTRICULAR CONDUCTION IN PATIENTS WITH ATRIAL FLUTTER
G. Senatore, C. Taglieri, R. Savoli, B. Ingoglia*, B. Giordano*, P. M. Sapienza*, M. Fazzari. Division of Cardiology, Hospital of Crit, Turin, #Cardiac rehabilitation, Mauriziano Hospital, Lanzo, Turin, "Cardiology, Hospital of Guogone", Turin, Italy

Atrial flutter (AF) can be eliminated with an ablation line either in the posterior isthmus (II) through tricuspid annulus (TA) and inferior vena cava or in the septal I between TA and coronary sinus. Aim of this study was to evaluate the effect of the ablation line in the septal I on atrioventricular (AV) conduction compared with ablation line in posterior I in a randomized study. Methods. We randomized 59 pts to receive ablation in posterior I or septal I. We evaluated the Wenkebach point (WP) and the effective refractory period (ERP) of the AV node before ablation during sinus rhythm and after the block of the selected I. Results. The clinical characteristics were similar in both groups. We randomized 29 pts for posterior I (group 1) and 30 pts for septal I (group 2). Eighteen pts (8 pts in group 1 and 10 pts in group 2) had documented episodes of atrial fibrillation (Afb). Ablation was successful in all pts. The WP before ablation was $324 \pm 55$ ms and $310 \pm 29$ ms in group 1 and group 2, respectively (p = NS). The ERP of the AV node before ablation was $315 \pm 52$ ms and $310 \pm 23$ ms in group 1 and group 2, respectively (p = NS). After ablation the WP was $331 \pm 38$ ms and $399 \pm 25$ ms in group 1 and group 2, respectively (p = 0.001). The ERP of the AV node was $322 \pm 7$ ms and $408 \pm 21$ ms in group 1 and group 2, respectively (p = 0.001). During a follow-up of 7.3 months a lower ventricular response was observed during Afb episodes in group 2 ($135 \pm 23$ bpm vs $126 \pm 21$ bpm, p = 0.01). Conclusions. Line of ablation in the septal I for treatment of AF is safe but is associated with modification of the AV conduction. This approach may represent the option in patients with AF associated to Afb.

CONTINUOUS SLOW WITHDRAWAL IN THE CAVOTRICUSPID ISTMUS SIMPLIFIES ATRIAL FLUTTER ABLATION
S. Heus, Y. Guyomar, P. Graux, A. Duhail
St. Philibert Hospital-Cardiology Department-Catholic Institute of Lille-F

Aim: Radiofrequency ablation of atrial flutter is a safe curative technique whose success rate is high and its recurrence rate; the procedures may nonetheless remain long with substantial X-ray exposure durations. The aim of our study was to evaluate the influence of continuous withdrawal rate (dragging rate) in the cavotricuspid isthmus on the efficacy and the rapidity of the procedure.

Method: The study consisted in a non-randomised study implemented in 53 patients (39.21 ± 15.8 months, disease recalcitrant to 3.0 anti-arrhythmic treatments). The patients were divided into 2 groups. In the first group of 26 patients, the dragging rate was fast (8 mm/10 sec). In the second group of 27 patients, the dragging rate was slow (8 mm/20 sec). The populations were comparable in terms of age, sex, heart disease and anti-arrhythmic treatment use.

Results: The success rate with fast dragging was 92% and not very different from that for slow dragging (96%). The result was nonetheless obtained more rapidly with a significant reduction, always in favour of slow dragging rather than fast dragging, in all of the following parameters: procedure duration (73.84 + 68 min versus 20.01 ± 18.36, p = 0.007), X-ray exposure duration (38.71 ± 28 min versus 26.36 ± 22 min, p = 0.005), number of lines (3.69 ± 2.03 versus 2.31 ± 1.44, p = 0.0005) and application time (16.5 ± 12.64 min versus 8.34 ± 2.26 min, p = 0.001). These results were correlated with a decrease in the number of RF pulses delivered to the gap zone: 1.57 ± 2.4 versus 0.55 ± 1.3 (p = 0.01)

Conclusion: Radiofrequency ablation flutter using slow dragging at cavotricuspid isthmus level shortens the procedure time and is a safe and effective technique whose results in terms of procedure duration and X-ray exposure duration seem comparable to those with thermocooling.

RADIO-FREQUENCY ATRIAL FLUTTER ISTMUS ABLATION: A COMPONENT IN THE LONG-TERM STRATEGY TO PREVENT ATRIAL TACHYARRHYTHMIAS?
R. Ventora, P. Turini, S. Baccili, J. Arango-Cifuentes, F. Campisi, F. De Conti, A. Zampiero.
Divisione di Cardiologia, Camposampiero, Padova, Italy.

Background. Radio-Frequency (RF) ablation of typical atrial flutter (AfI) has an high acute success rate. However the long-term outcome of these patients in terms of atrial tachyarrhythmias recurrences is not well defined. Methods. The first 50 patients who undergone a successful RF ablation of typical AfI at our Institution were studied during long-term follow-up. Endpoints were recurrence of atrial flutter or atrial fibrillation. Several clinical and procedural variables were tested in univariate analysis as predictors of tachyarrhythmia recurrence.

Results. During a mean follow-up of 27 months (1-45) following successful isthmus ablation procedure, AfI recurrences were observed in 3 patients (6%), all during the first 6 months of follow-up. No episode of symptomatic AfI was recorded after 6 months. Symptomatic atrial fibrillation was documented in 18 patients during the follow-up (36%). Most of atrial fibrillation episodes occurred after 12 months of follow-up. Thirty-two patients had follow-up longer than 24 months: the prevalence of atrial fibrillation in this group was 47/6% (15 of 32). Thirty-five patients were still on antiarrhythmic drug therapy, duration of the arrhythmia, were not found to be different from that for slow dragging (96%). The result was nonetheless obtained more rapidly with a significant reduction, always in favour of slow dragging rather than fast dragging, in all of the following parameters: procedure duration (73.84 + 68 min versus 20.01 ± 18.36, p = 0.007), X-ray exposure duration (38.71 ± 28 min versus 26.36 ± 22 min, p = 0.005), number of lines (3.69 ± 2.03 versus 2.31 ± 1.44, p = 0.0005) and application time (16.5 ± 12.64 min versus 8.34 ± 2.26 min, p = 0.001). These results were correlated with a decrease in the number of RF pulses delivered to the gap zone: 1.57 ± 2.4 versus 0.55 ± 1.3 (p = 0.01).

Conclusion: Radiofrequency ablation flutter using slow dragging at cavotricuspid isthmus level shortens the procedure time and is a safe and effective technique whose results in terms of procedure duration and X-ray exposure duration seem comparable to those with thermocooling.

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