Section 6A: References

Clinical Memo References


2. Chan EKY, Abati AL and Vepa K “Coagulum index predicts coagulum formation in right atrial radiofrequency energy delivery to ablate atrial fibrillation” PACE 2000;11:1856-1856


4. Wittkampf FHM and Nakagawa H “RF Catheter ablation : Lessons on lesions” PACE 2006;29: 1285-1297

5. Electrophysiology Report, Lankenau Hospital Cardiovascular Services, date: 10/24/2001


15. Lafuente C, Moulty S, Longas-Tejero MA, Mahe I and Bergmann JF “Antiarrhythmic drugs for maintaining sinus rhythm after conversion of atrial fibrillation” Archives of Internal Medicine 2006;166:719-728


17. see reference six


19. Nergarch A, Frick M “Perceived heart rhythm in relation to ECG findings after direct current cardioversion of atrial fibrillation” Heart 2006;92:1244-1247


The Disease of Atrial Fibrillation

27. Miller J, Zipes D “Catheter Ablation of Arrhythmias” Cardiology Patient Page from the Krannert Institute of Cardiology, Cardiovascular Division, Department of Medicine, Indiana University School of Medicine, Indianapolis, date: 2002


31. Markides V, Schilling R “Atrial Fibrillation: Classification, Pathophysiology, Mechanisms And Drug Treatment” Heart 2003;89:939–943


Relationship of Atrial Fibrillation (AF) to Isthmus Ablation and Atrial Flutter (AFL)


- Reports long term clinical outcome of 56 patients with recurrent AF and drug-induced typical AFL resulting in a substantial reduction in the incidence of episodes, quality of life improvement, and decrease in hospitalization


- Atrial fibrillation occurrence was significantly reduced after ablation of the isthmus line (112 in 343 patients, 33%) as compared to occurrence of atrial fibrillation before radiofrequency ablation (198 in 363 patients, 55%).


- 24 patients with recurrent, drug refractory, paroxysmal AF underwent RF ablation in two groups: 15 patients received two RA linear lesions (Group 1), 9 patients received the same two RA linear lesions plus isthmus ablation (Group 2) resulting in no AF recurrences in 26% of Group 1 patients (FU: 23 to 47 months) and 55% of Group 2 (FU: 14 to 23 months) in the absence of any drug treatment


- Retrospective review of 221 patients with typical atrial flutter and found that bidirectional cavitricuspid isthmus block is associated with cure or control of AF in approximately 50% of patients with AFL


- Concludes that atrial flutter and atrial fibrillation may be responsible for causing each other

- Concludes that the creation of a complete bi-directional conduction block at the inferior vena cava-tricuspid annulus isthmus, plus flecainide administration, reduces the recurrences of both AF and AFL in patients with class IC atrial flutter

42. Nabar A, et al. “Class IC antiarrhythmic drug induced atrial flutter: electrocardiographic and electrophysiological findings and their importance for long term outcome after right atrial isthmus ablation” Heart 2001;85:424-429

- 24 consecutive patients with AF developing AFL while taking propafenone or flecainide received an isthmus lesion ablation resulting in a prevention of AF recurrences in 11/13 (85%) patients with typical AFL and a reduction in AF recurrences in 4/8 (50%) patients with atypical AFL


- Case report of a patient with AF where creation of bidirectional conduction block over crista terminalis gaps and the cavotricuspid isthmus was performed and after 6 months of follow-up had no further AF recurrence


- Concludes that AF and AFL usually share common triggers


- Concludes that one possible way to achieve clinical and symptomatic improvement in a subgroup of patients with AF is a hybrid therapy with a class IC drug and linear isthmus ablation


- Results demonstrate that 9/13 patients with typical AFL and symptomatic AF were symptom free at a mean of 4 month follow-up after combined class IC antiarrhythmic drug and right atrial isthmus ablation
Pacemaker Implantation in Patients with Atrial Fibrillation


- Reports a 3.9% need for pacemaker implantation following maze surgery

Maze procedures for treatment of AF


- Found that incremental ablation lines limited to the left atrium resulted in success rates of 55-80% which increases to 95-100% when right atrial ablation lines are added


- Reports that right atrial surgery does not modify the arrhythmogenic substrate of atrial fibrillation implying that maze surgery can be restricted to the left atrium


- Clinical results for 164 patients that underwent surgical maze procedures reporting a 93% success rate of patients that were arrhythmia free without any antiarrhythmic medication

51. Filipecki A, Saksena S, Lin WH “Effectiveness of Rhythm Control in Persistent or Permanent Atrial Fibrillation with Overdrive Atrial Pacing and Antiarrhythmic Drugs after Linear Right Atrial Catheter Ablation” Am J Cardiol 2003;92:1037–1044


- Reports success rates of 70-80%

- A radial pattern of linear radiofrequency ablation resulted in restoration of sinus rhythm (79% at 3 years follow-up) and atrial function


- A modified MAZE operation using cooled-tip radiofrequency ablation can be safely combined with mitral valve surgery and is highly effective in restoring sinus rhythm (80%)

Catheter Ablation of Atrial Fibrillation


- RCT of catheter ablation (PV isolation) vs. antiarrhythmic medication demonstrating that PVI may be feasible as first line treatment for patients with symptomatic AF


- RCT of circumferential pulmonary vein ablation vs. amiodarone and 2 cardioversions (control) resulting in 74% success rate from recurrence of AF at one year for the ablation group and 58% in the control group


- RCT results showed an 86% success rate of patients in sinus rhythm at one year for the ablation group versus 22% in the control group


- Focuses mainly on left atrial ablation lesions for treatment of AF

- Concludes that patients with PAF experience a significant improvement in QoL after successful catheter ablation and patients with recurrences show improvement to a lesser extent


Patient Recognition of Symptoms of AF


- Concludes that patients’ symptoms are not a reliable surrogate parameter for the prevalence of AF and medications can change a patient’s perception of AF symptoms

Right Atrial Lesions


- Results indicate that right atrial linear lesions did not provide any additional therapeutic benefit to combined antiarrhythmic drug therapy and septal or nonseptal atrial pacing in patients with sinus bradycardia and paroxysmal AF

64. Arruda M, Natale A “The Adjunctive Role of Nonpulmonary Venous Ablation in the Cure of Atrial Fibrillation” J Cardiovasc Electrophysiolo 2006;17:S37-S43

- Discussion of adjunctive role of right atrial ablation
Placebo Effect


- Reports that there can be a significant improvement in QoL questionnaire after an unsuccessful ablation procedure highlighting the tendency for a placebo effect with subjective measures


- Discusses placebo effect in cardiovascular disease including catheter ablation for atrial fibrillation

Linear Atrial Ablation with Long Coiled Electrodes


- Discusses risk of coagulum formation with long coiled electrodes with a single temperature sensor as well as incomplete lesion continuity produced by these electrodes

Current Treatment of Atrial Fibrillation


- Review of literature through 2005 outlining technique and at least 6 months follow-up


- Catheter ablation can be considered routine clinical practice in many experienced centers