

**726 Cardiac Pacing**

Monday, March 25, 1996, 4:00 p.m.—5:30 p.m.  
Orange County Convention Center, Room 230B

4:00

**726-1 Progression to J-Wire Fracture, Protrusion and Embolization in an Active-Fixation Atrial Permanent Pacemaker Lead**

David Kawanishi, Adrian Rozkovec, Jeffrey Brinker. *Accufix Physician Advisory Committee, USC Pacemaker Center, Los Angeles, CA*

In order to measure the time course of events, a prospective multicenter study using fluoroscopic screening and follow-up of 1,604 patients with an active fixation atrial J-lead known to be at risk for fracture of the J-shape retention wire is being conducted. A second screening has been performed in 498 patients at an interval ranging from 3 to 6 months. The fracture classes were: Class 1 = no fracture; 2 = fracture w/o protrusion; 3 = fracture with protrusion; 4 = embolization of a wire fragment. A change in fracture class occurred in 10/433 (2%) of Class 1 patients and in 3/52 (6%) of Class 2 patients but no clinical events were noted. For those w/progression results were:

Δ of Class	No. Pts.	Mos. of Implant at 2nd Screen (mean)	Mos. between Screens (mean)	% of initial class
1 to 2	8	35.6	3.1	1.8
1 to 3	2	31.8	2.9	0.4
2 to 3	1	57.0	0.6	1.9
2 to 4	2	36.2	3.4	3.8

**Conclusion:** 1. A new fracture or progression of fracture to protrusion or embolization may occur over a very short time interval in as many as 6% of patients; 2. Such progressions are not necessarily associated with immediate patient injury although a subsequent injury remains a possibility; 3. This might suggest a more aggressive management approach in patients with an acceptable risk of complications at lead extraction.

4:15

**726-2 Mechanical and Clinical Predictors of J-Wire Fracture and Injury in a Permanent Atrial Pacemaker Lead: Implications for Management**

David Kawanishi, Jeffrey Brinker, G. Neal Kay, Charles Love, Nora Goldschlager, Mitchell Mutter, Jean-Claude Petitot, Guy Pioger, Adrian Rozkovec. *Accufix Physician Advisory Committee, USC Pacemaker Center, Los Angeles, CA*

Since J-wire fracture (fx) has resulted in patient deaths, identification of predictors of fx and of patient injury (INJ) might be helpful in establishing guidelines for management of patients with the Accufix atrial pacemaker lead. A multicenter screening and follow-up study of 1604 patients was used to establish prevalence and predictors of fx. All reported cases of INJ from entire patient population was analyzed for predictors of INJ. The prevalence of fracture as of June, 1995, was 24.5%; there were 18 INJ due to wire fx, including 2 deaths; 21 INJ w/4 deaths & 9 elective thoracotomies were associated with lead extraction. Results of multivariate analysis:

Migr date <sup>1</sup>	Activity	Implant duration <sup>1,3</sup>
Follow-up center <sup>1</sup>	Age <sup>2</sup>	Implant approach
Heart size	Weight	Stylet used
Female gender <sup>2,3</sup>	Fx class <sup>3</sup>	J-shape <sup>1</sup>

<sup>1</sup>p ≤ 0.05 for prediction of fx; <sup>2</sup>p ≤ 0.05 for prediction of INJ; <sup>3</sup>p ≤ 0.05 for INJ during extraction; Rest = NS

**Conclusions:** 1. Lead extraction may be preferred for young patients (≤ 60 yrs), especially if female and particularly if the j-shape is more open; 2. Non-extraction may be preferred if the implant duration is long, especially if fracture has already occurred and the patient is female; 3. Some factors are bad for both cont. monitoring and risk of extraction. Individualized patient management is still vital but these findings may provide a framework for decisions.

4:30

**726-3 Dual Chamber Pacing in Patients With Hypertrophic Obstructive Cardiomyopathy With and Without Obstruction at Rest**

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It is known that right ventricular pacing decreases left ventricular outflow tract (LVOT) obstruction in pat with hypertrophic obstructive cardiomyopathy

(HOCM). This study addressed the issue whether pacing is useful for patients who do not have LVOT obstruction at rest but in whom gradients appears with provocation.

**Material and methods:** 45 pat with HOCM and drug refractory symptoms were included. 25 pat had resting gradients > 50 mmHg (group A). 20 pat had resting gradients < 50 mmHg (group B), and were provoked during baseline evaluation and follow-up. Iv isoproterenol at two concentrations were used for provocation. Pat were in NYHA class II–IV with no difference between the two groups. All pat underwent temporary dual chamber pacing at baseline. Atrioventricular delay was optimized to that giving greatest reduction of LVOT gradient without compromising LV diastolic filling. LVOT gradient was recorded with echo-Doppler. After baseline evaluation all patients received a permanent dual chamber pacemaker.

**Results:** A reduction of LVOT gradient of more than 30% was achieved in all patients and the NYHA class improved significantly in both groups without any significant difference between group A and B.

	NYHA		LVOT mmHg			
	Baseline	3 month	Baseline		3 month	
			SR	Pace	SR	Pace
Group A	3.0 ± 0.6	1.8 ± 0.6	87 ± 37	40 ± 25	38 ± 28	23 ± 16
Group B	3.0 ± 0.6	1.4 ± 0.6	97 ± 30	44 ± 27	59 ± 17	21 ± 18

**Conclusion:** Dual chamber pacing with short AV-delay is as useful for patients with significant LVOT obstruction only during provocation as it is for patients with LVOT obstruction already at rest.

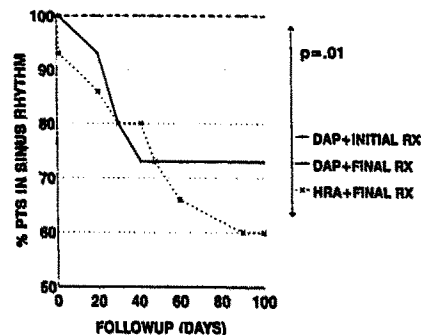
4:45

**726-4 Arrhythmia Recurrence Patterns During Atrial Pacing**

Atul Prakash, Sanjeev Saksena, Irakli Giorgberidze, Ryszard B. Krol, Anand N. Munsif, Phillip Mathew. *Eastern Heart Institute, Passaic, NJ*

We examined atrial fibrillation (AF) recurrence patterns in pts implanted with dual chamber pacing systems capable of single & dual site RA pacing. 15 pts with drug-refractory AF & bradycardias underwent implantation of 2 atrial leads (high RA & coronary sinus os locations) with a DDDR pacemaker. They were discharged in the dual site RA pacing [DAP] mode, with or without antiarrhythmic drug therapy [Rx] as the initial Rx. This regimen was later modified either to achieve continuous atrial pacing or arrhythmia control (final Rx). Pts remained in DAP for 3 mos then underwent mode switching to high RA pacing for the next 3 mos & this sequence was repeated at 6-mo intervals. AF recurrence were actuarially analyzed.

**Results:** Mean followup was 13 ± 3 mos. AF recurrences were compared during the first 3 mos in each pacing mode (Fig). Pts required less frequent cardioversion during first yr of atrial pacing modes (20%) as compared to prior regimens without pacing (73%; p = 0.01). Pts with recurrent AF during pacing had a trend to lower mean LV ejection fraction (p < 0.09) but no difference in mean LA diameter (p = 0.2).



**Conclusions:** 1) The DAP mode reduces AF recurrence as compared to high RA pacing with an optimized antiarrhythmic drug regimen. 2) Atrial pacing reduces need for subsequent cardioversion of AF.

5:00

**726-5 Acute and Chronic Hemodynamic Effects of Bifocal vs. Unifocal Right Atrial Pacing**

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In this study we carried out a comparative evaluation of the acute and