

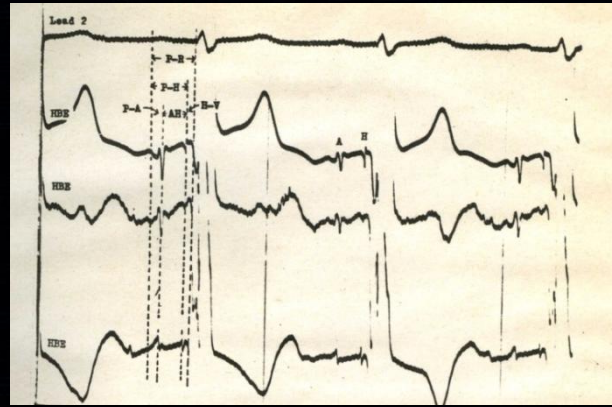
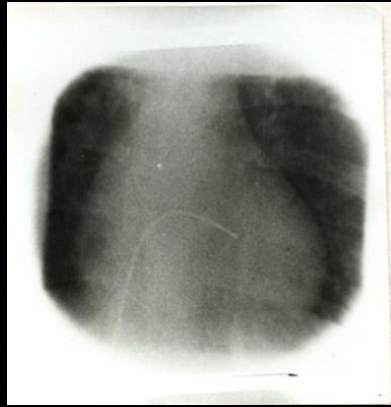
A Voyage from His Bundle Recording to Catheter Ablation

**Kim, Sung Soon, MD, PhD
Arrhythmia Service, Cardiology Division
Yonsei Cardiovascular Center**

Dec 3, 2011



His속전도를 이용한 방실전도에
관한 연구



연세대학교 대학원

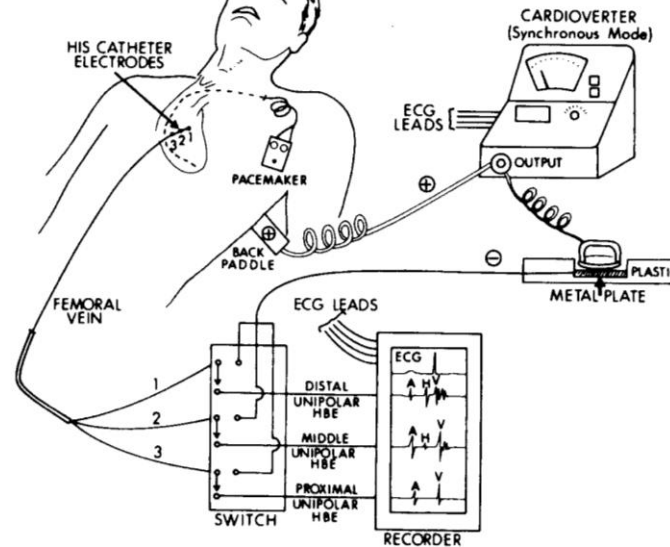
의 학 과

김 기洙

Catheter-Induced Ablation of the Atrioventricular Junction to Control Refractory Supraventricular Arrhythmias

Melvin M. Scheinman, MD; Fred Morady, MD; David S. Hess, MD; Rolando Gonzalez, MD

JAMA 1982;248:851-55



CATHETER TECHNIQUE FOR CLOSED-CHEST ABLATION OF THE ATRIOVENTRICULAR CONDUCTION SYSTEM

JOHN J. GALLAGHER, M.D., ROBERT H. SVENSON, M.D., JACK H. KASELL, LAWRENCE D. GERMAN, M.D.
GUST H. BARDY, M.D., ARCHER BROUGHTON, M.B.B.S., AND GIUSEPPE CRITELLI, M.D.



REPORTS ON THERAPY

**Electrode Catheter Ablation of Refractory Focal
Ventricular Tachycardia**

GEOFFREY O. HARTZLER, MD, FACC

Kansas City, Missouri

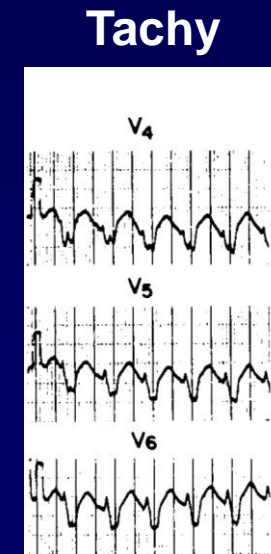
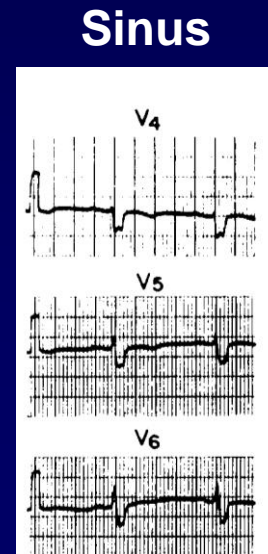
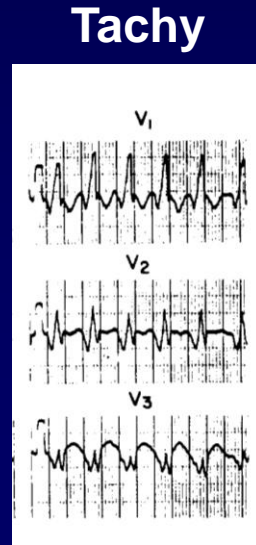
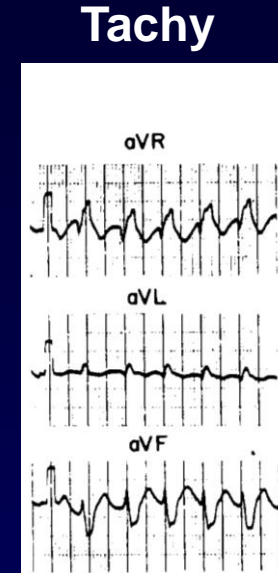
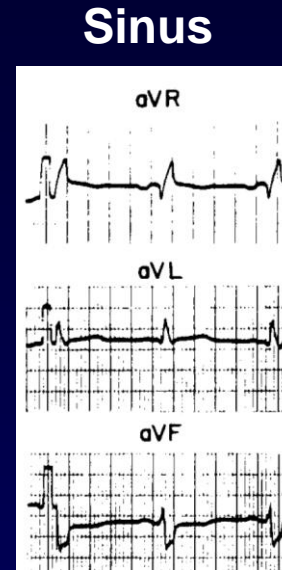
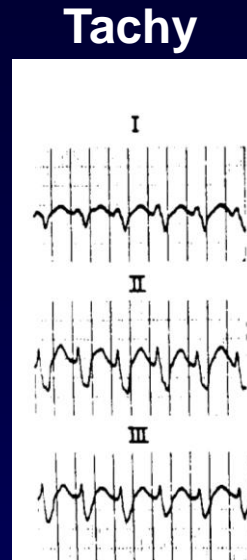
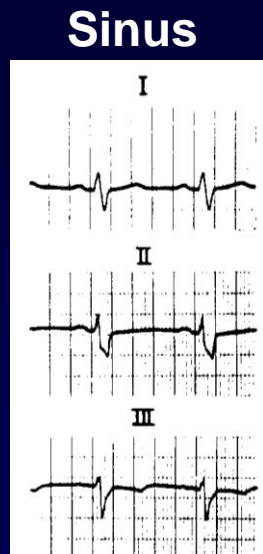
Localized, high energy, direct current intracardiac shocks effectively prevented recurrent ventricular tachycardia in one patient whose arrhythmia originated in the right

ventricular outflow tract, and in two patients with ventricular septal tachycardia after myocardial infarction.

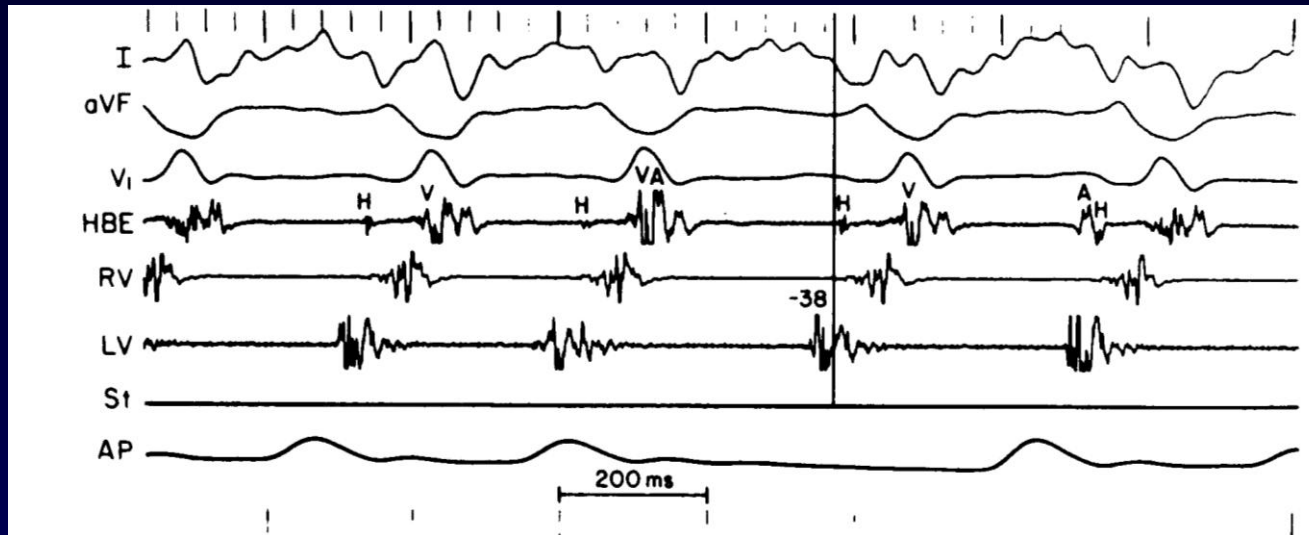
JACC 1983;2:1107



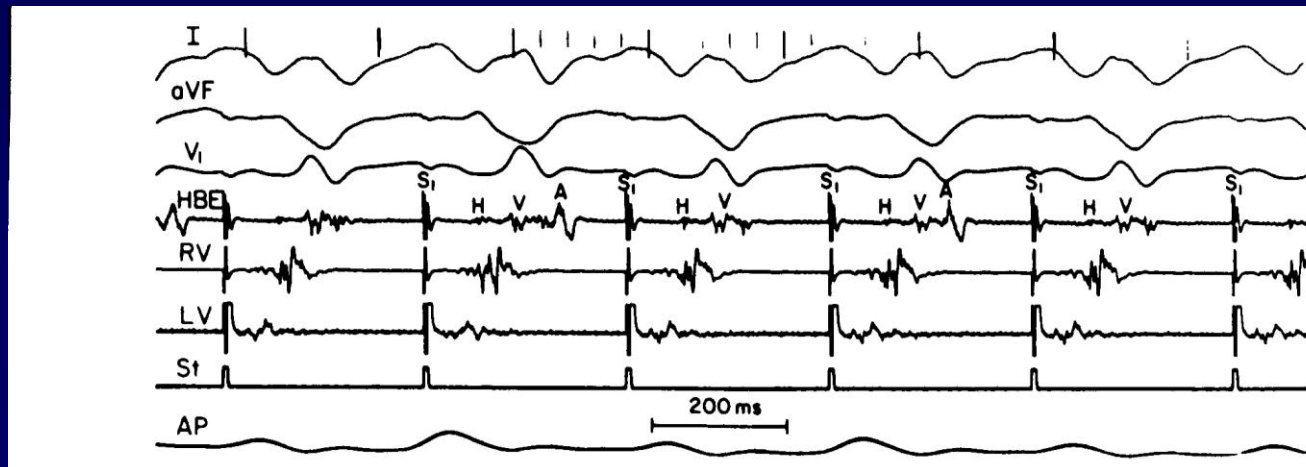
Paroxysmal Fascicular Tachycardia: Electrophysiologic Characteristics and Treatment by Catheter Ablation



Lt. local LV electrogram is earlier than QRS by 38 ms



LV pace mapping

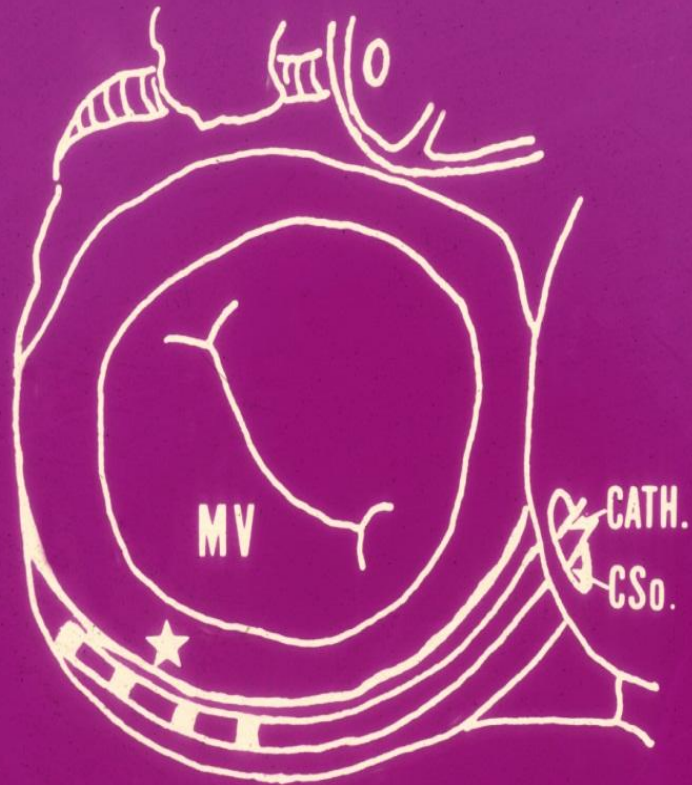


1

2

6



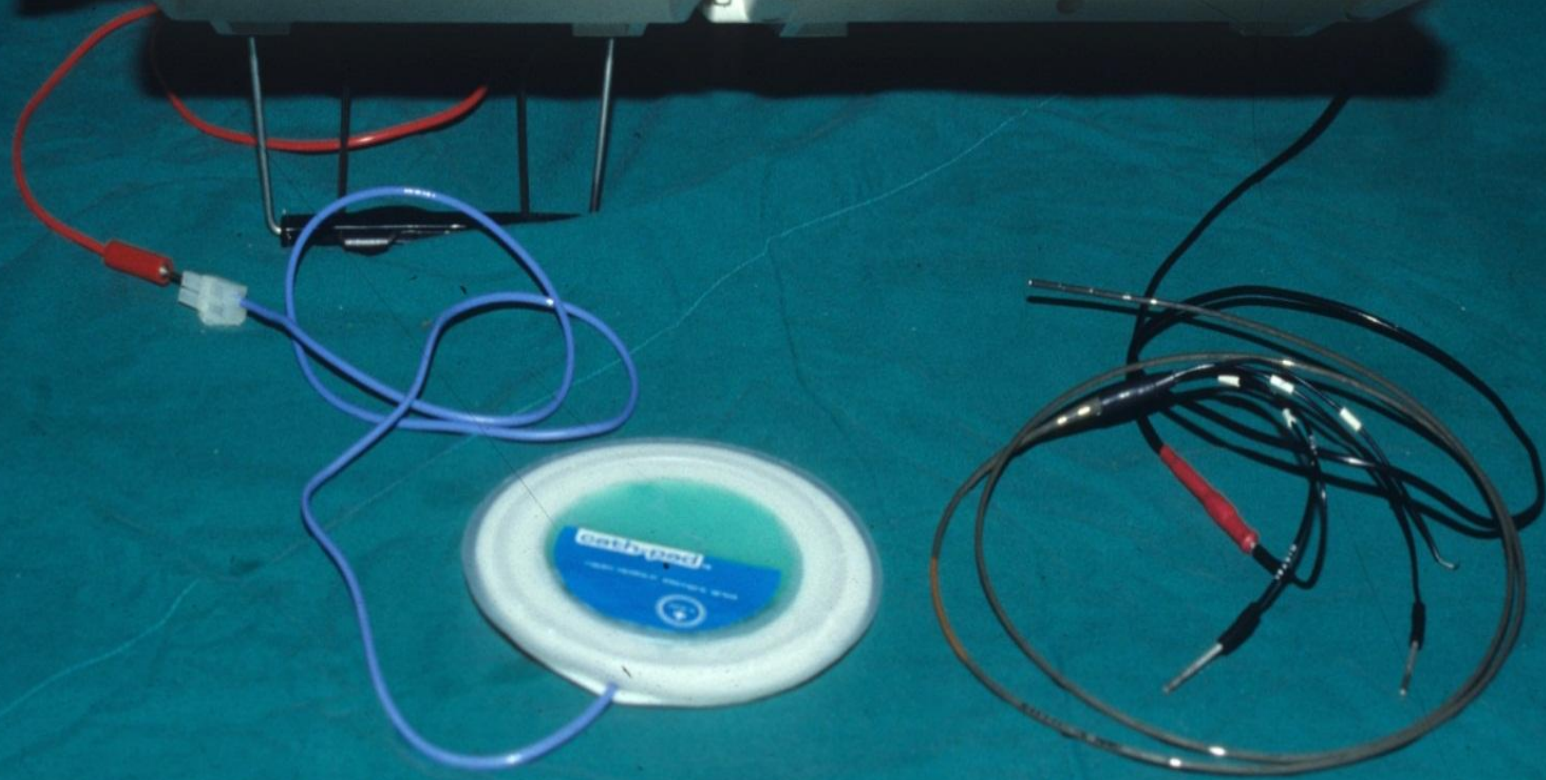


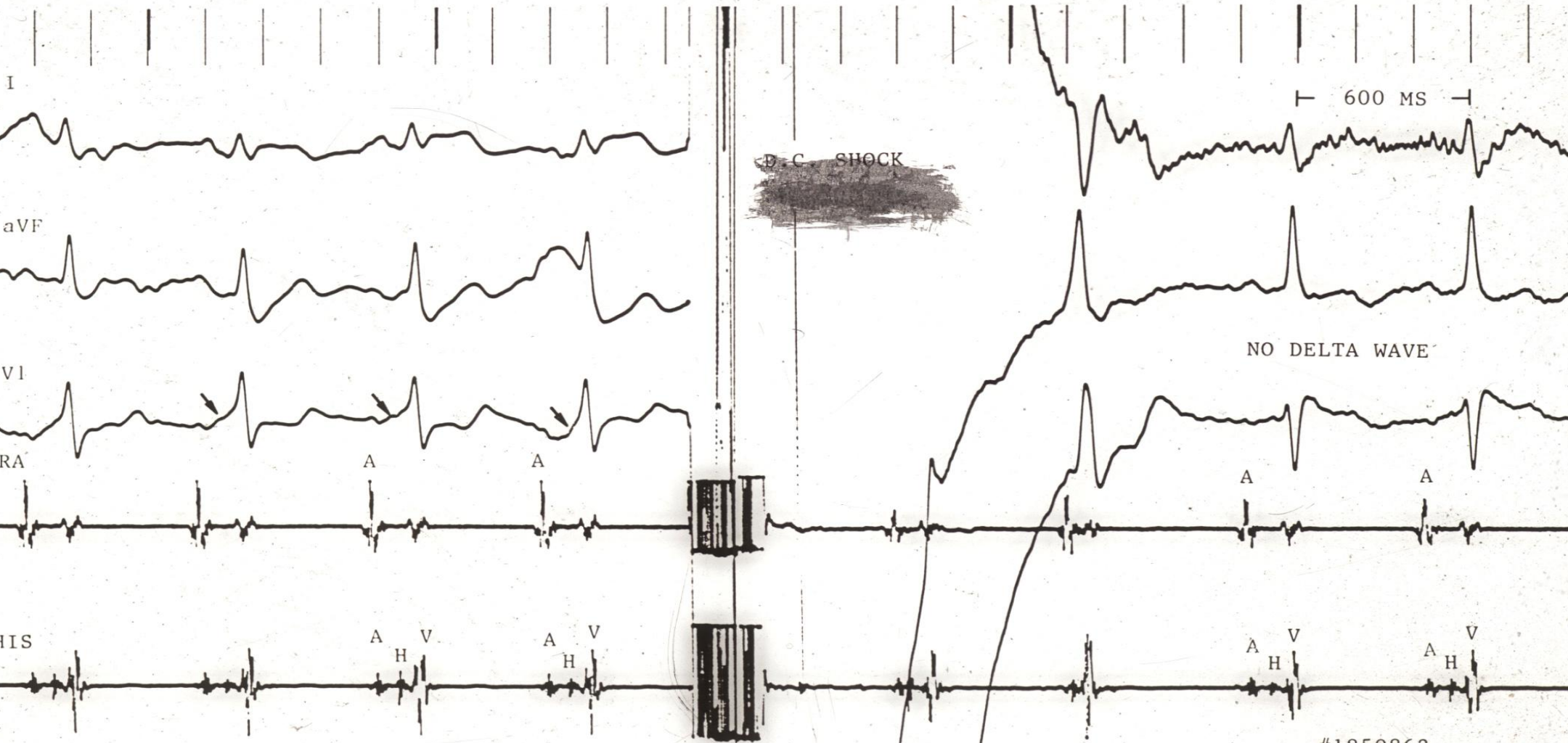
SUCCESSFUL CA



FAILURE

★ : ACCESSORY PATHWAY



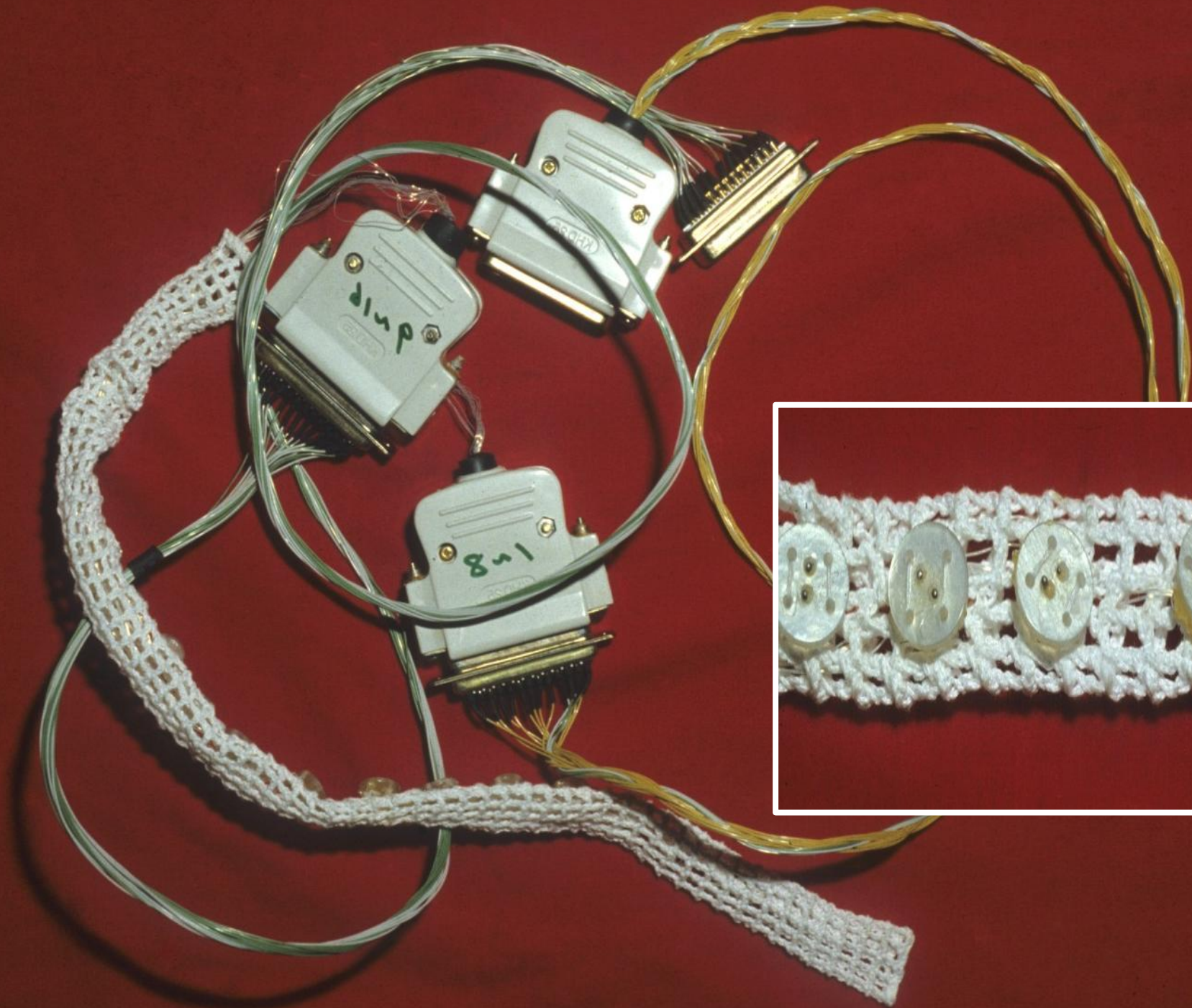


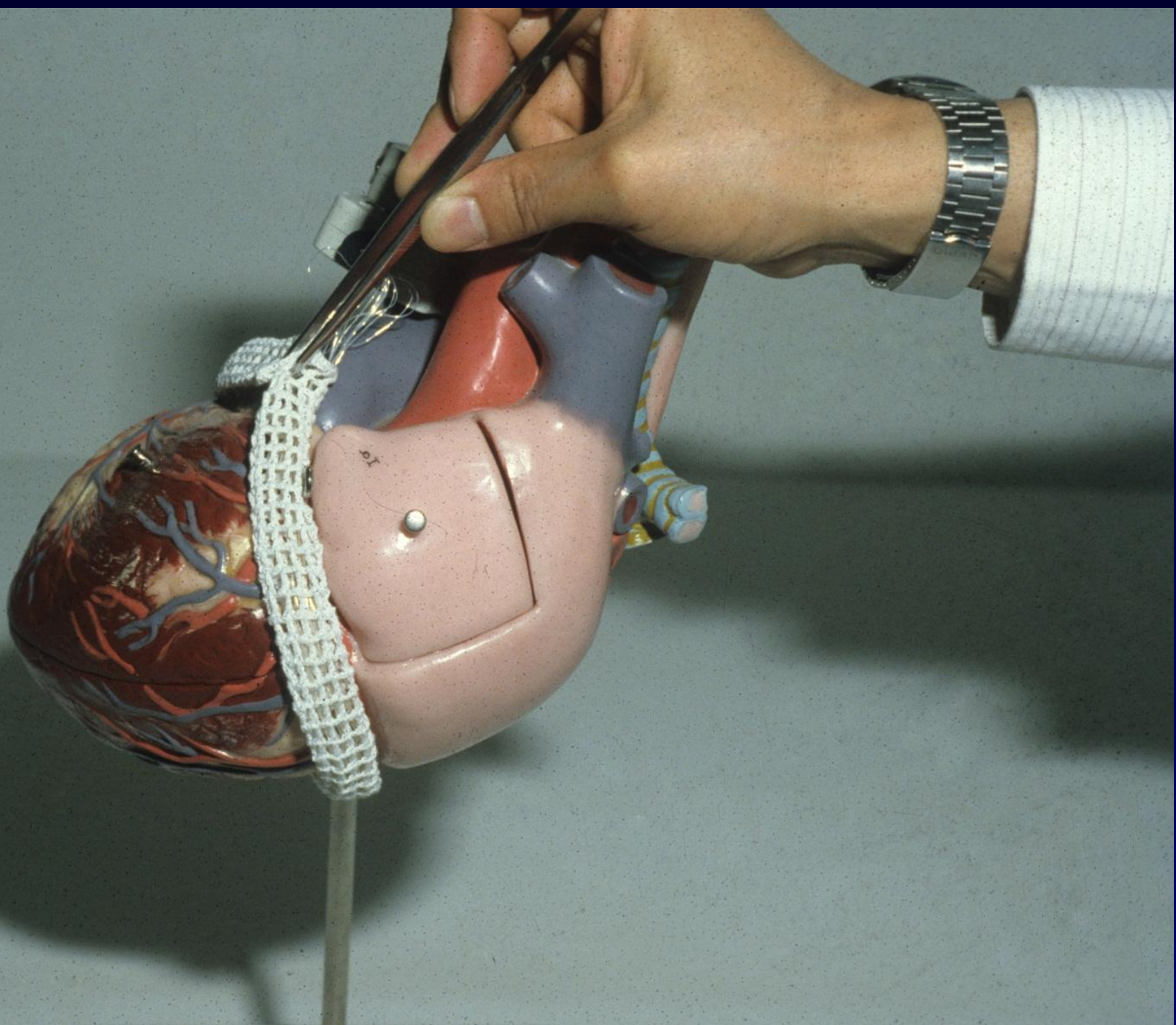
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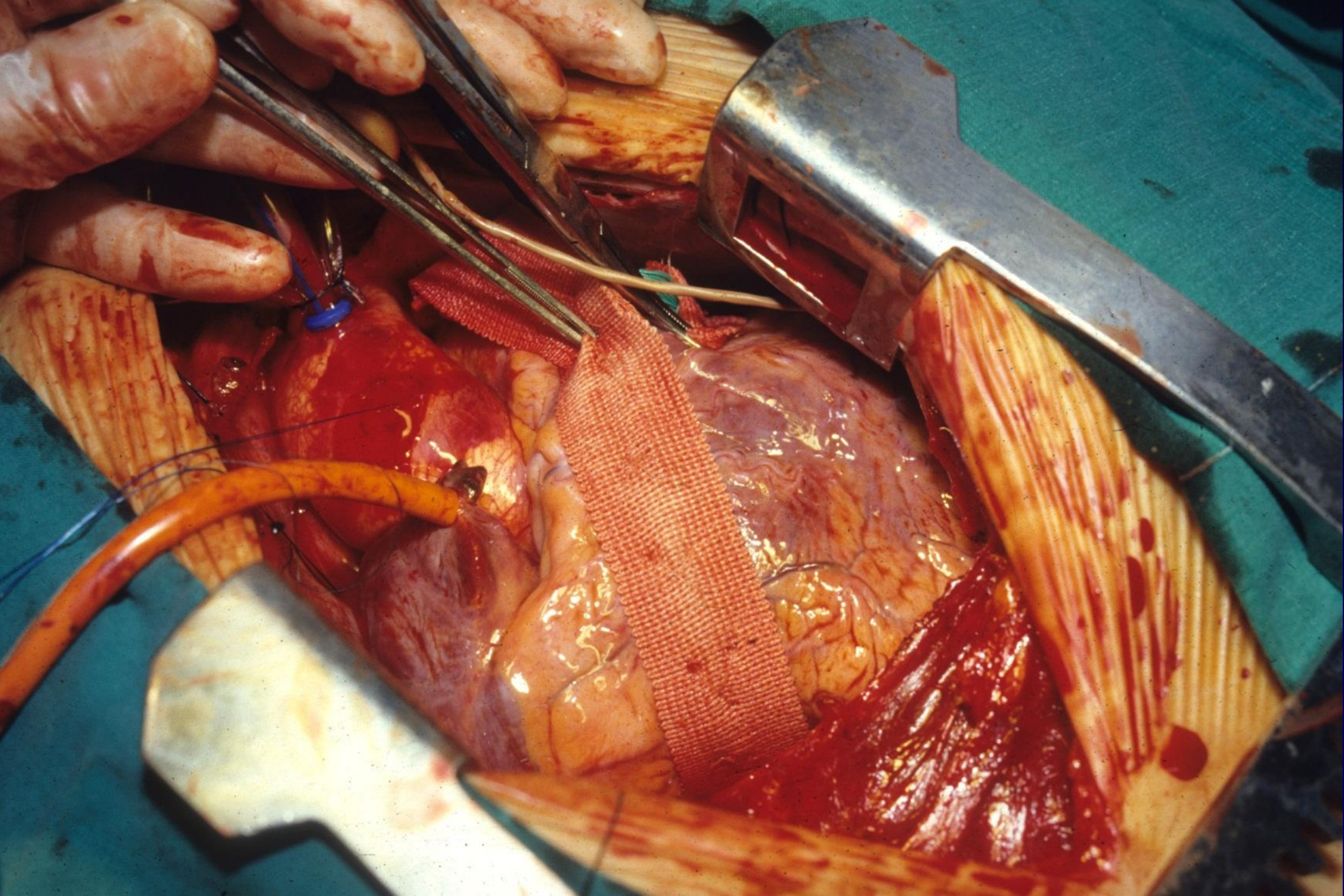
Result of Catheter Ablation of Accessory Pathway (1987-1993)

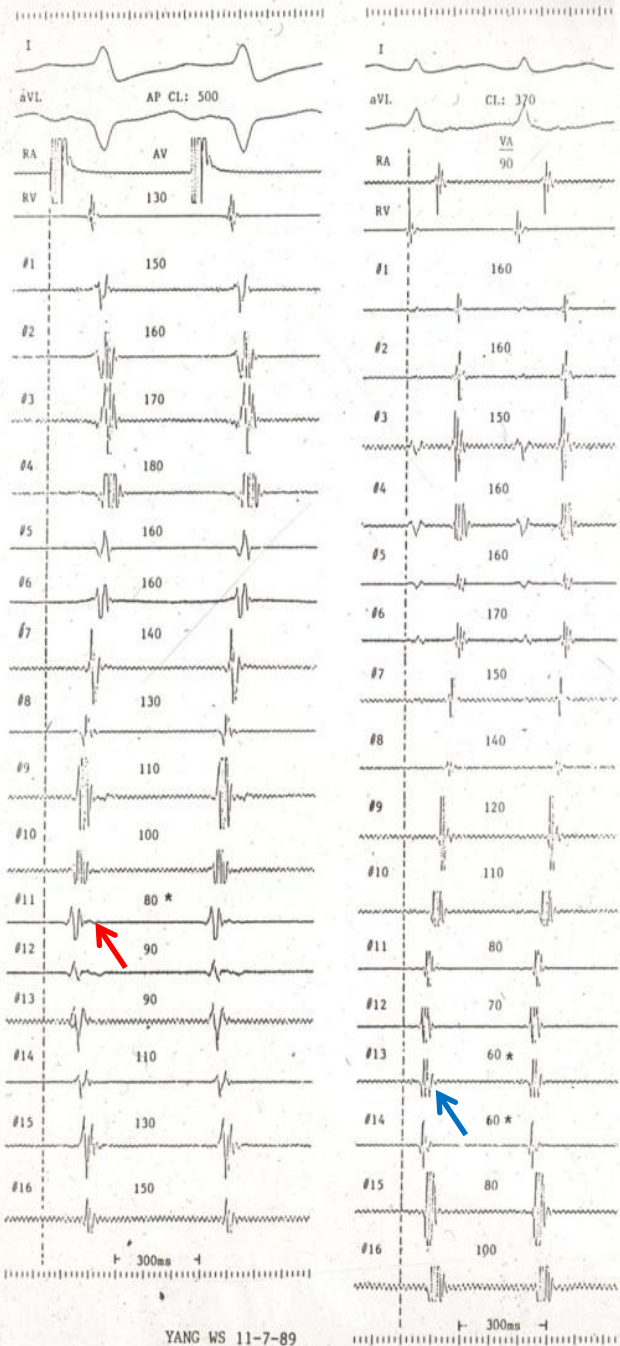
	Success (%)
DC Shock	
Via coronary sinus	56/70 (80%)
By endocardial approach	126/148 (86%)
Radiofrequency	170/182 (93%)





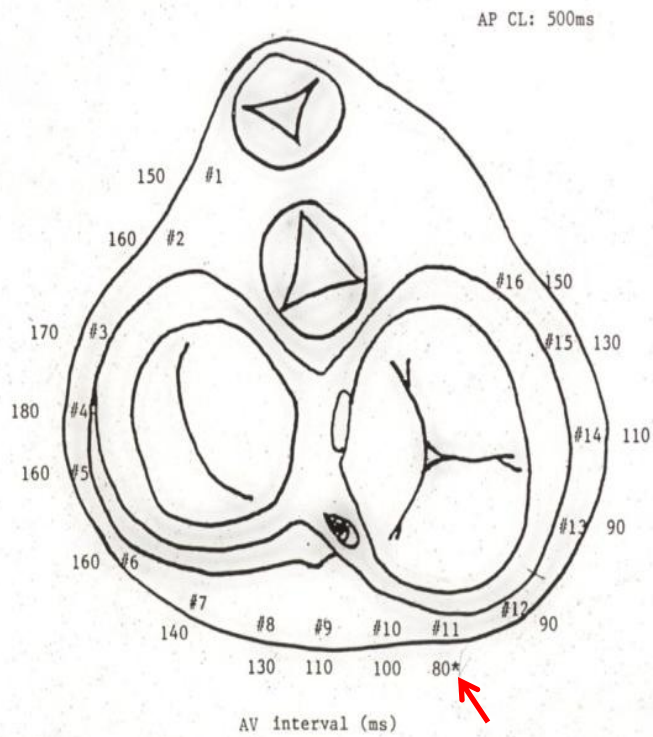






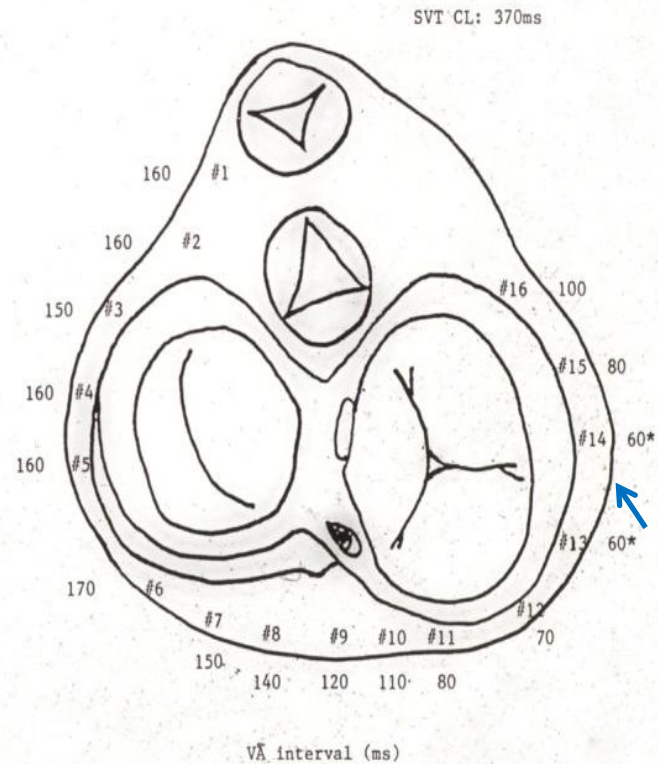
YANG WS 11-7-89

Ventricular mapping during atrial pacing



YANG WS 11-7-89

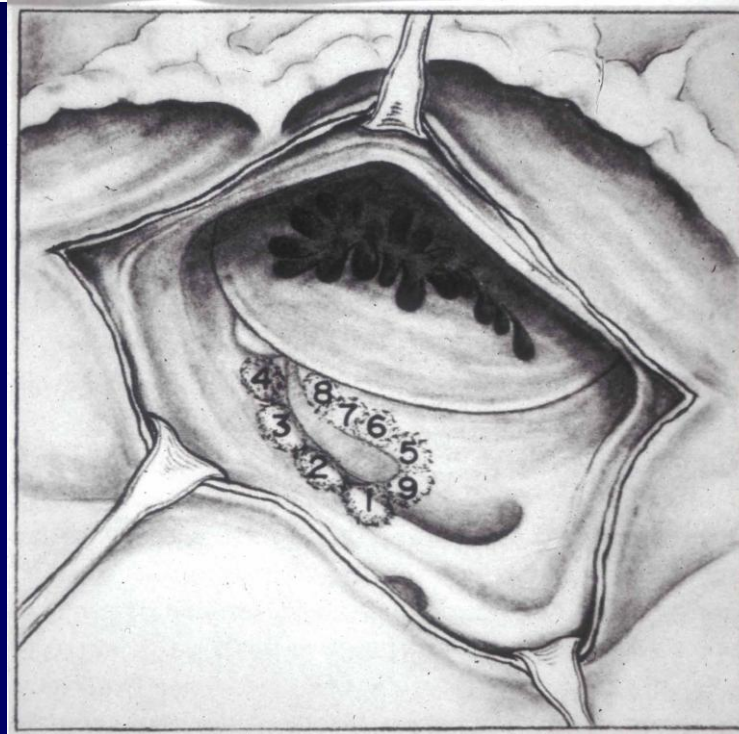
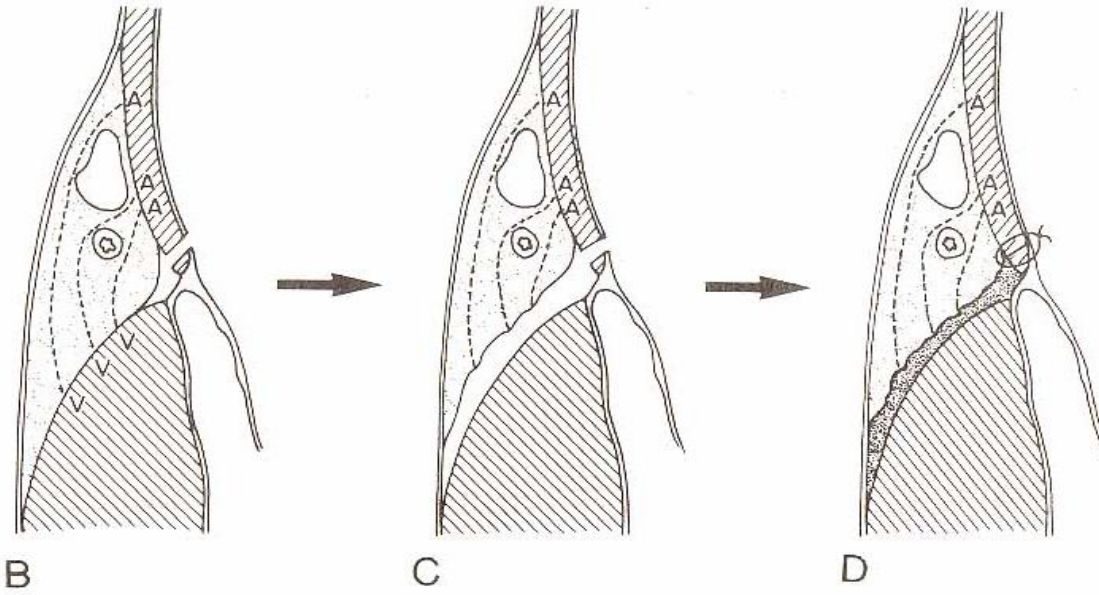
Atrial mapping during SVT



YANG WS 11-7-89



ENDOCARDIAL TECHNIQUE



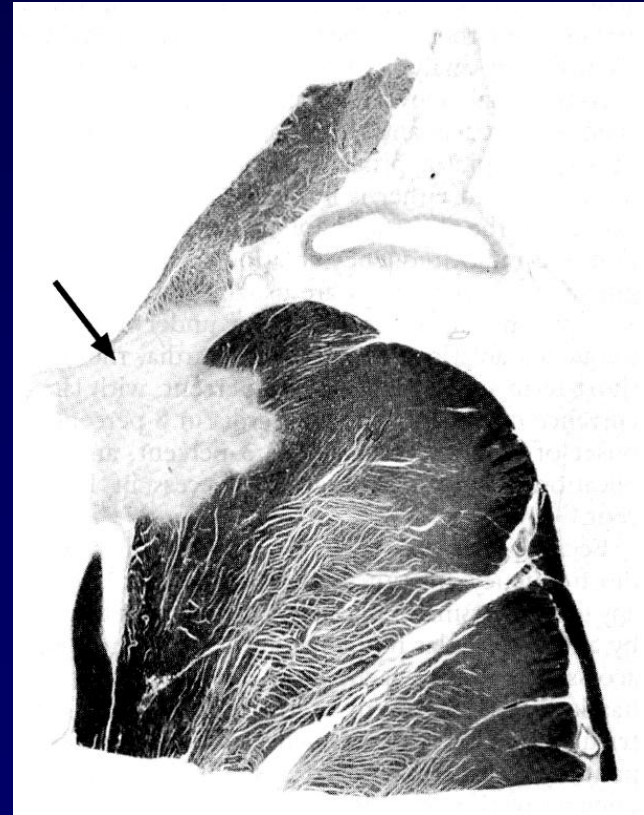
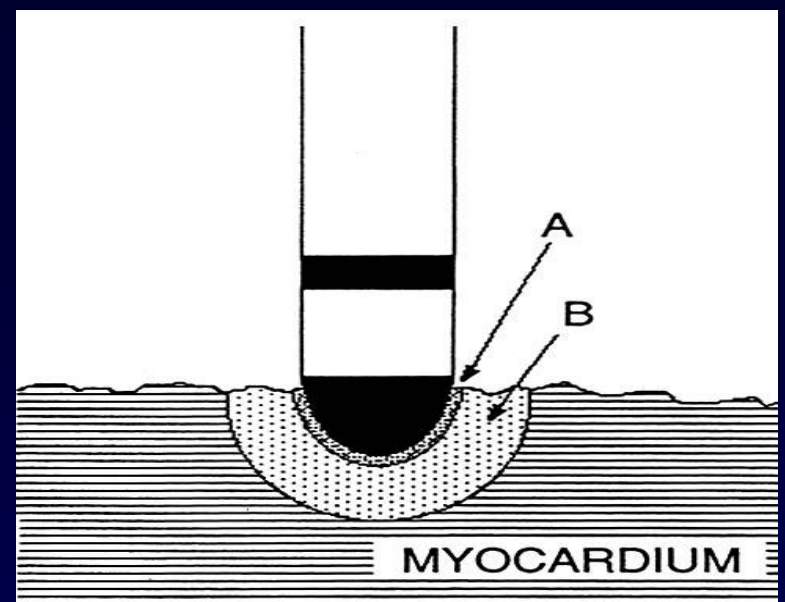
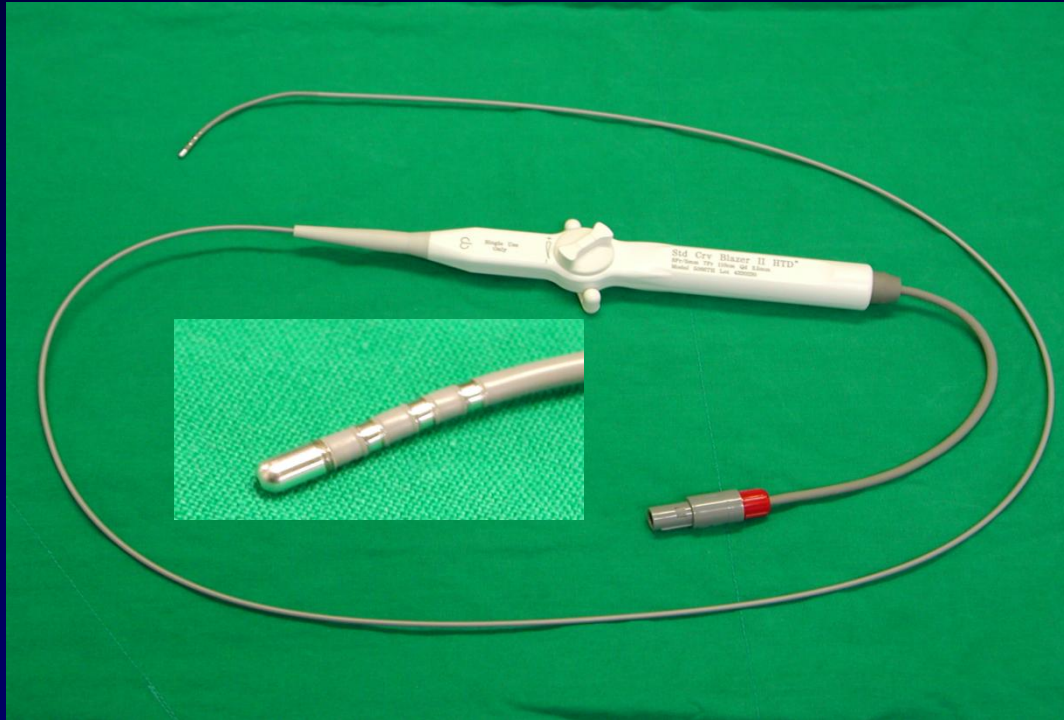
Annual Incidence of Surgery for Cardiac Arrhythmia

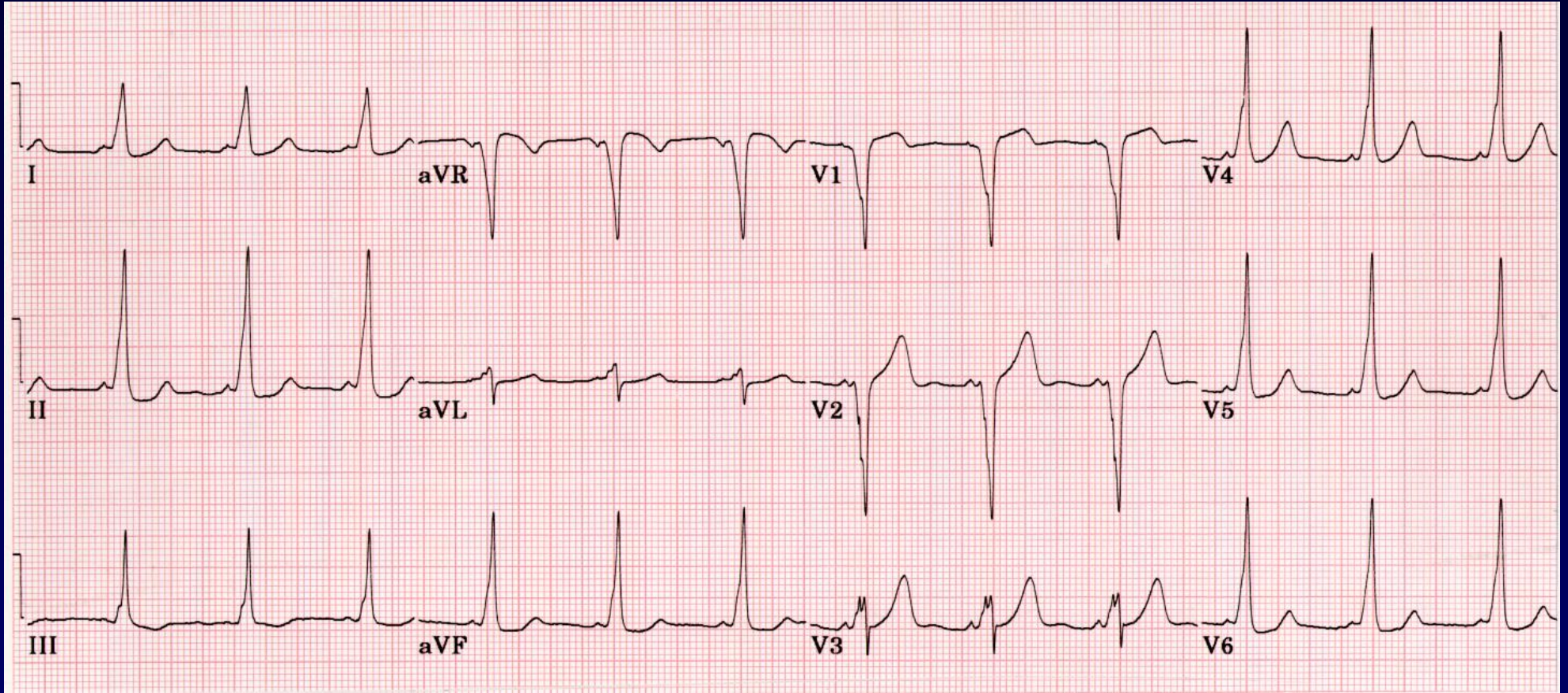
Year	SVT	A Fibrillation	A Flutter
1987	1		
1988	1		
1989	12		
1990	32	2	
1991	14	4	
1992	7	8	4*
1993	1	7	2
1994	1	11	3
1995	1	6	0
Total	70	38	9

SVT : supraventricular tachycardia, A : atrial

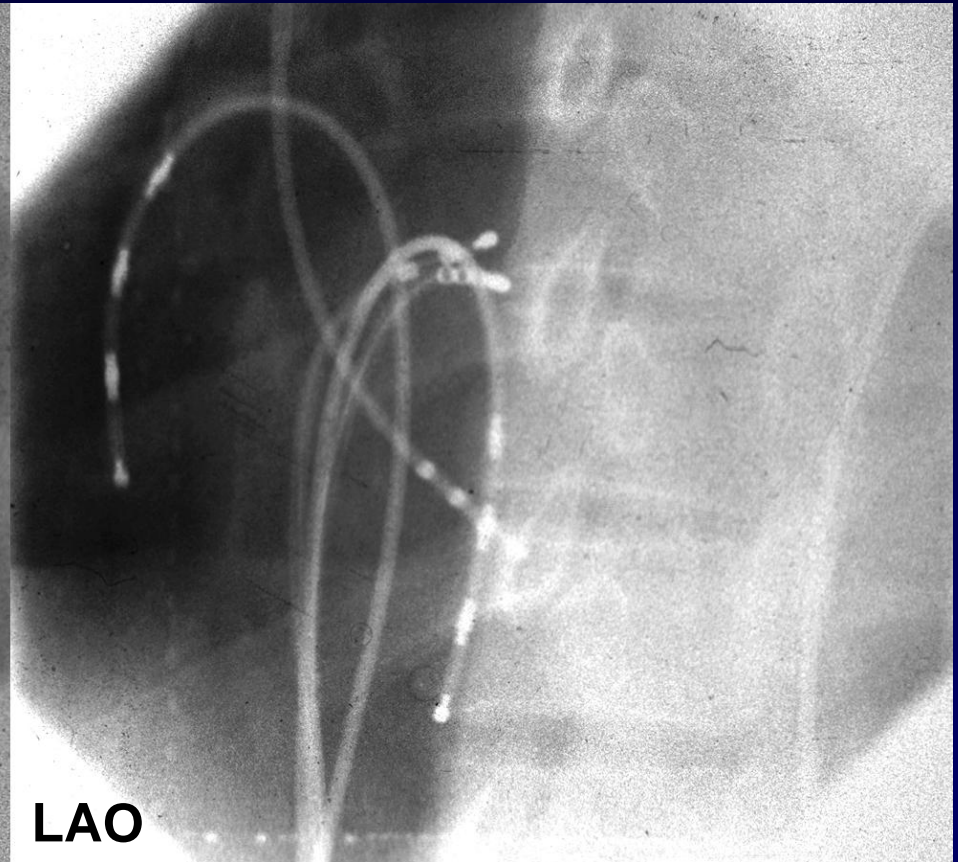
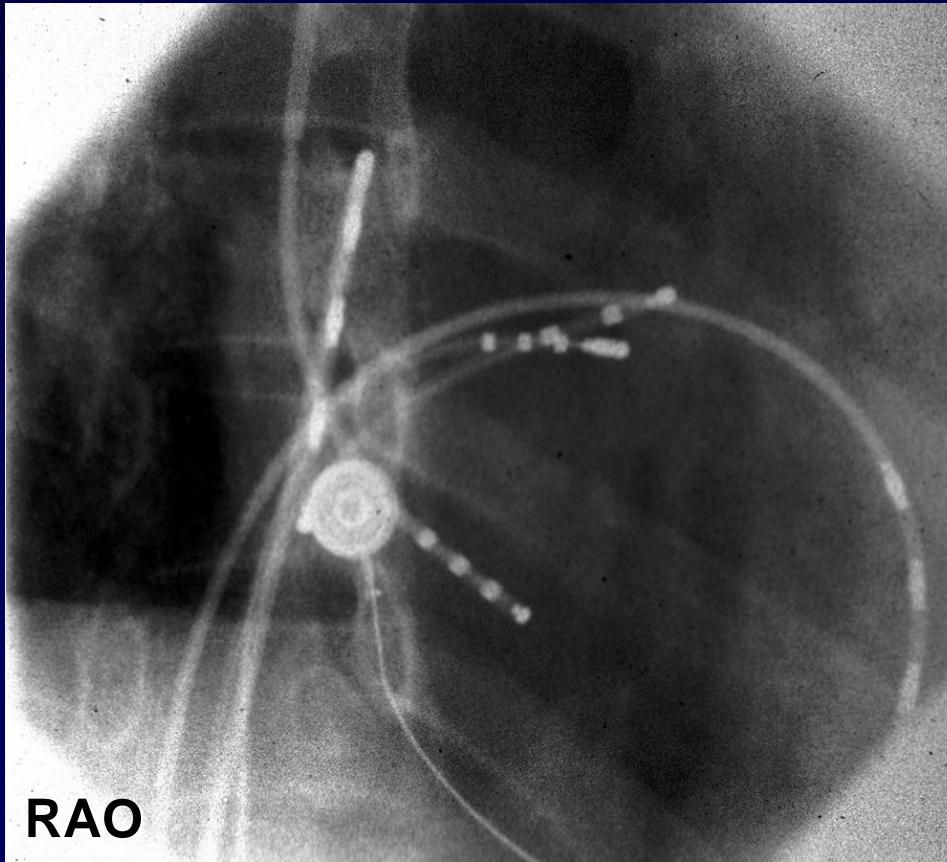
** : a patient received surgical ablation of accessory pathways concomitantly with atrial flutter surgery.*

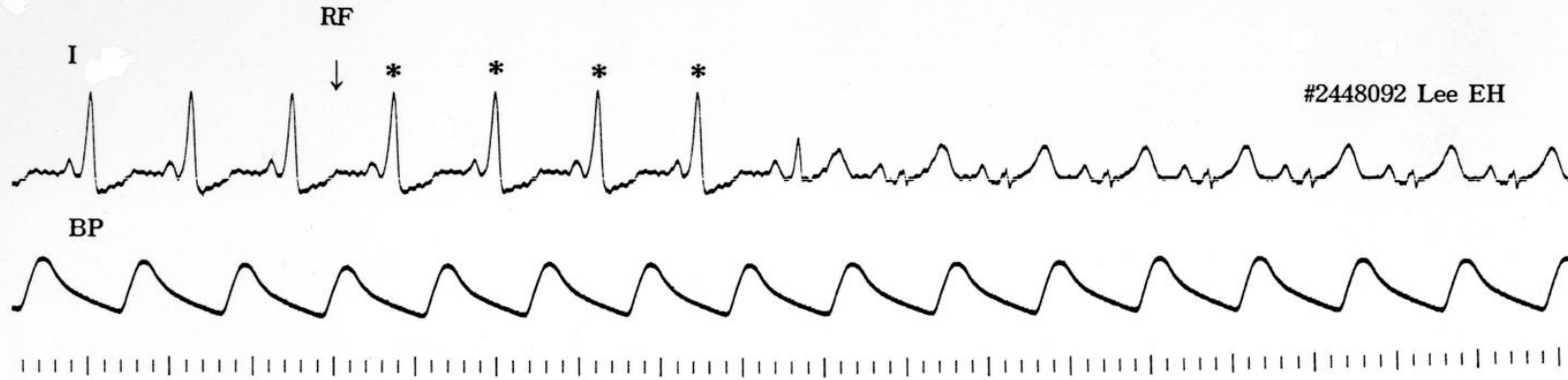
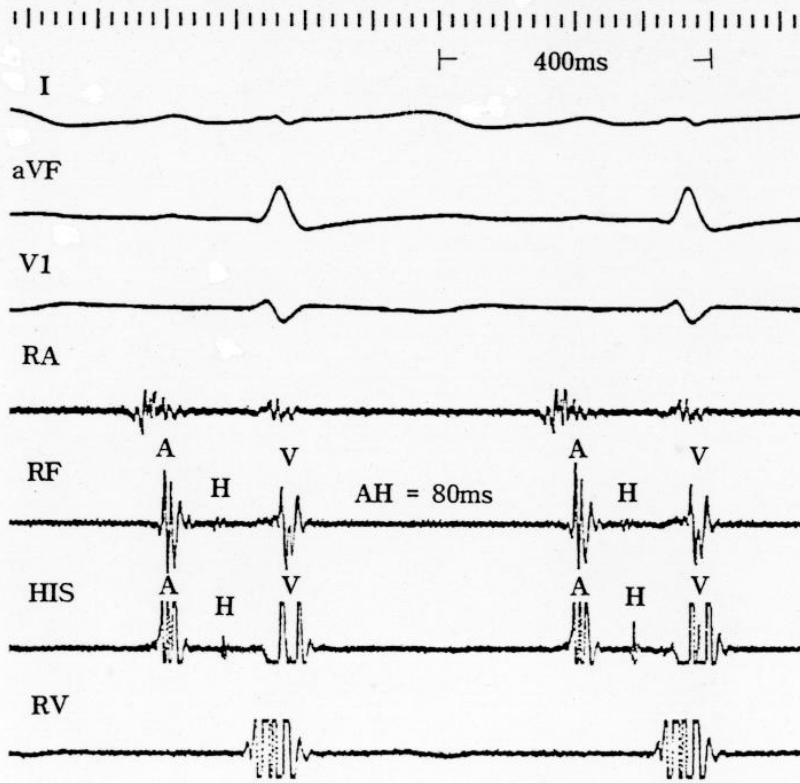
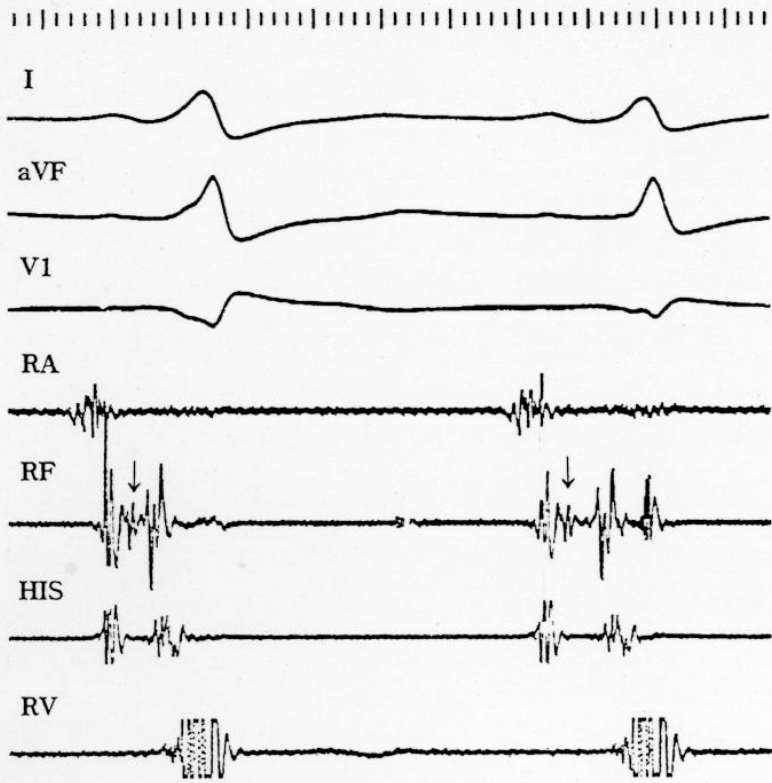




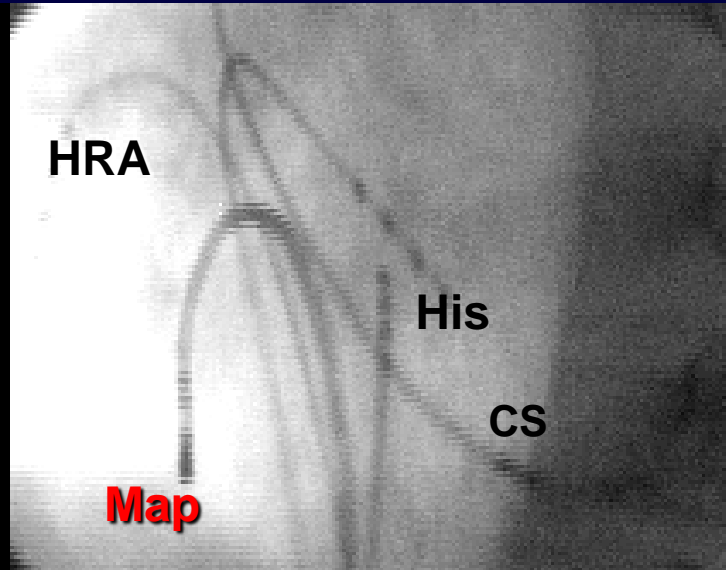


RF Ablation of Parahisian Accessory Pathway

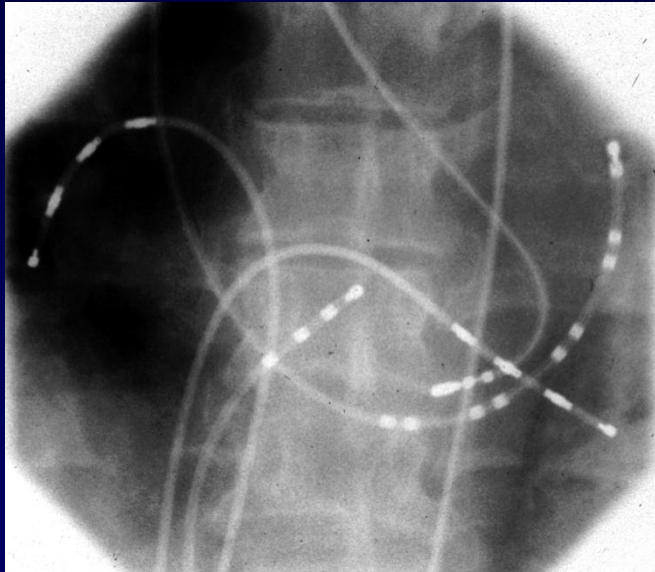




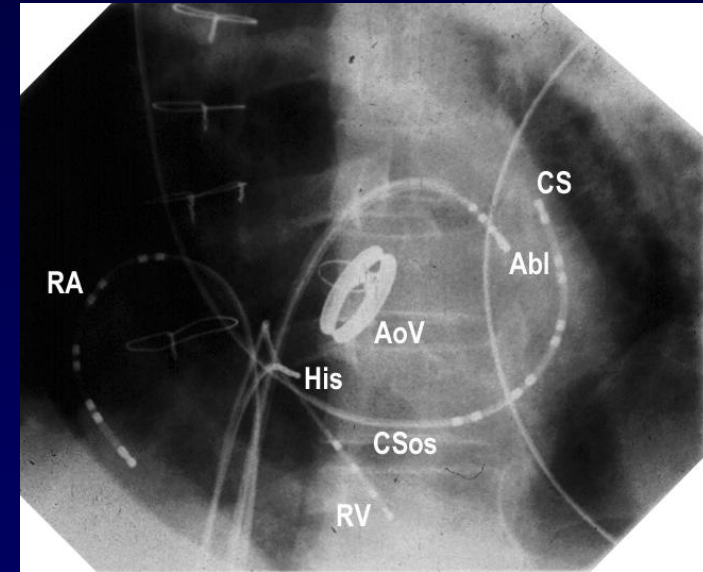
Location of Accessory Pathway



Right Posterior



Left Posteroseptal



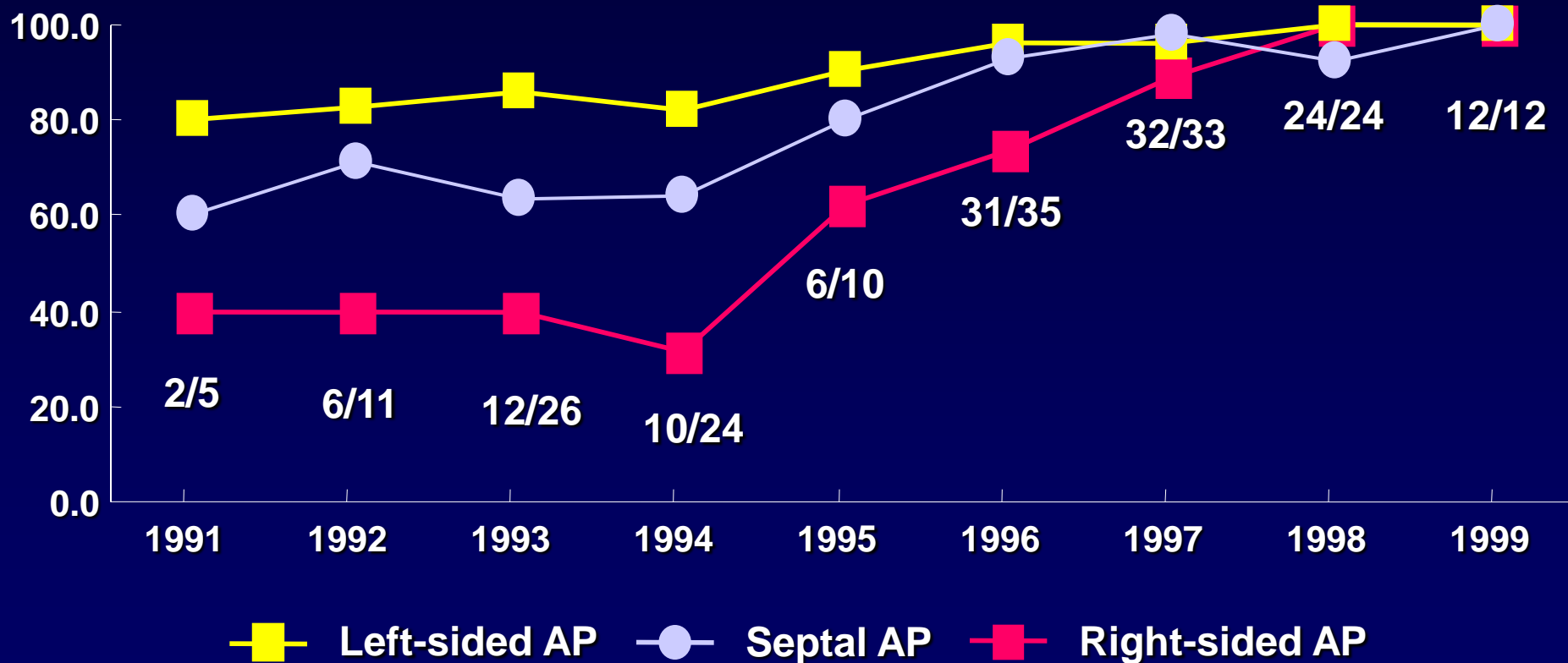
Left Lateral

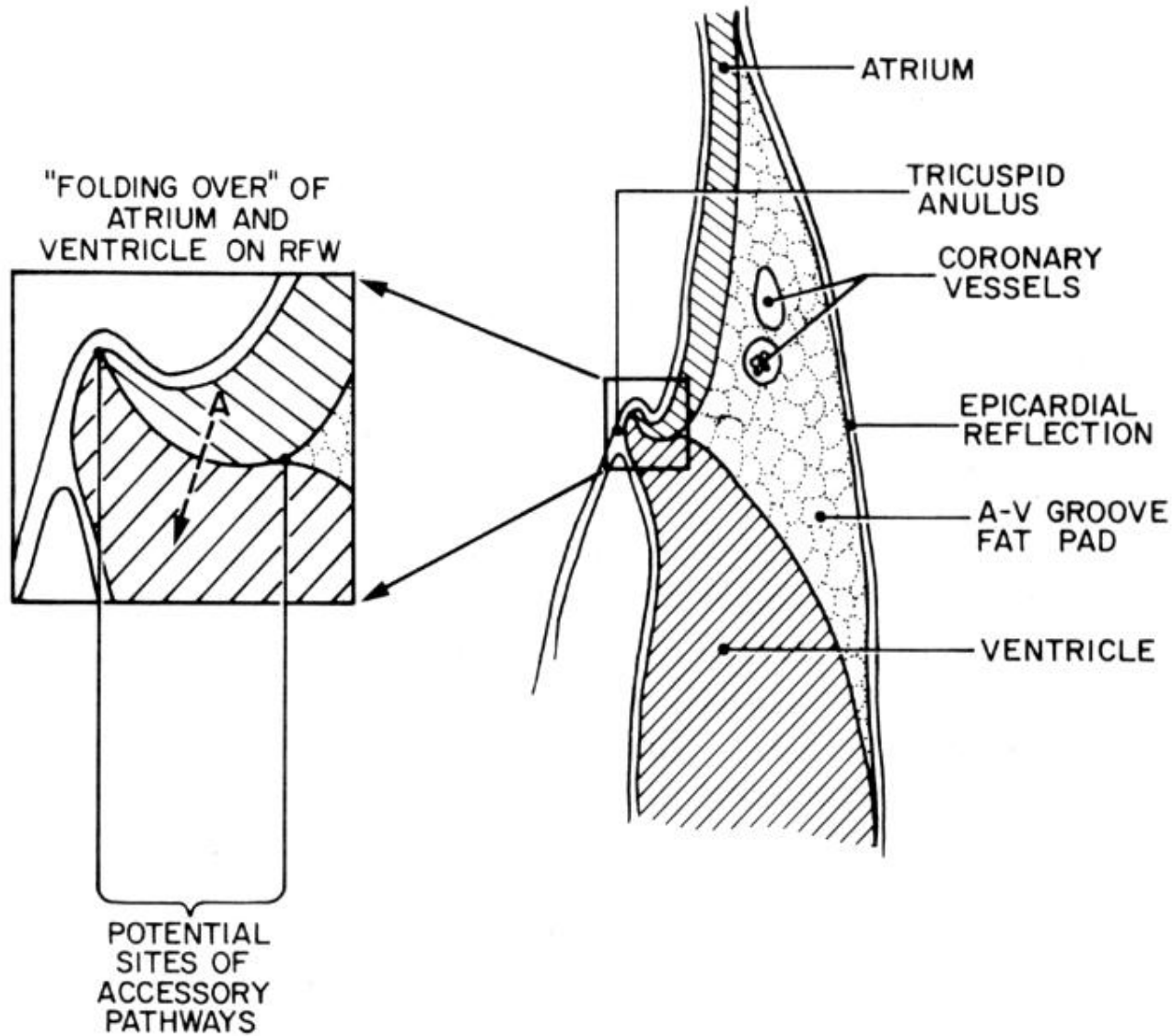
Result of RF Ablation of 1081 Accessory Pathways in 1020 patients (1991-1999.9)

Location of AP	No	Primary Success	Recurrence	Redo	Final Success Rate (%)
Left free wall	672	660 (98.2)	40 (6.1)	41/43	661 (98.4)
Posteroseptal	174	160 (91.9)	18 (11.3)	17/18	159 (91.4)
Right	94	73 (86.9)	8 (10.9)	8/8	73 (86.9)
Left	90	87 (96.7)	10 (11.5)	9/10	86 (95.6)
Right free wall	180	153 (85.0)	18 (11.8)	30/32	165 (91.7)
Anteroseptal	39	34 (87.2)	8 (23.5)	10/10	36 (92.3)
Anteroseptal	25	22 (88.0)	4 (18.2)	5/5	23 (92.0)
Parahisian	14	12 (85.7)	4 (33.3)	5/5	13 (92.9)
Midseptal	14	12 (85.7)	2 (16.7)	4/4	14 (100.0)
Total	1081	1019 (94.3)	86 (8.4)	102/107	1035 (95.7)

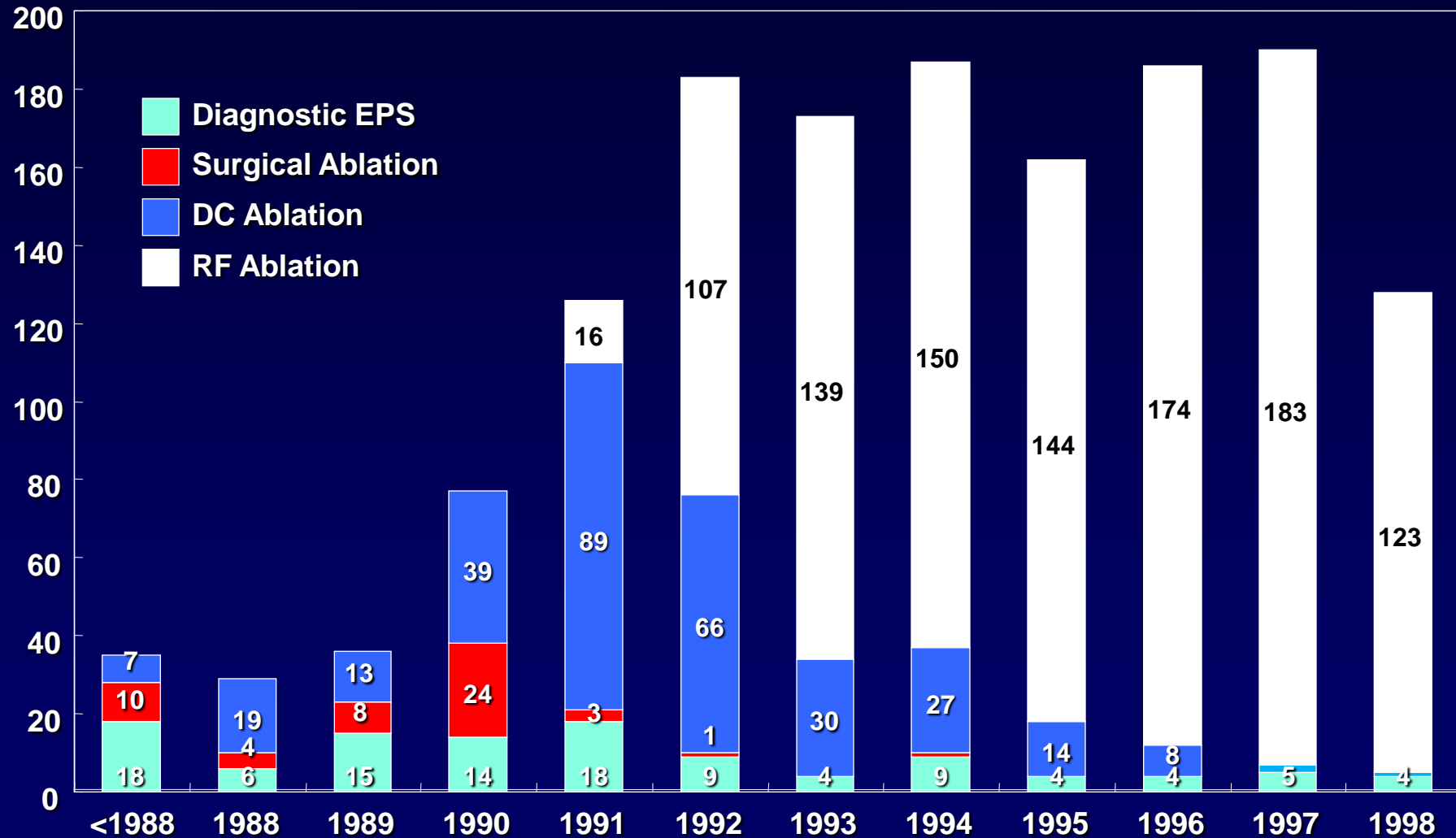


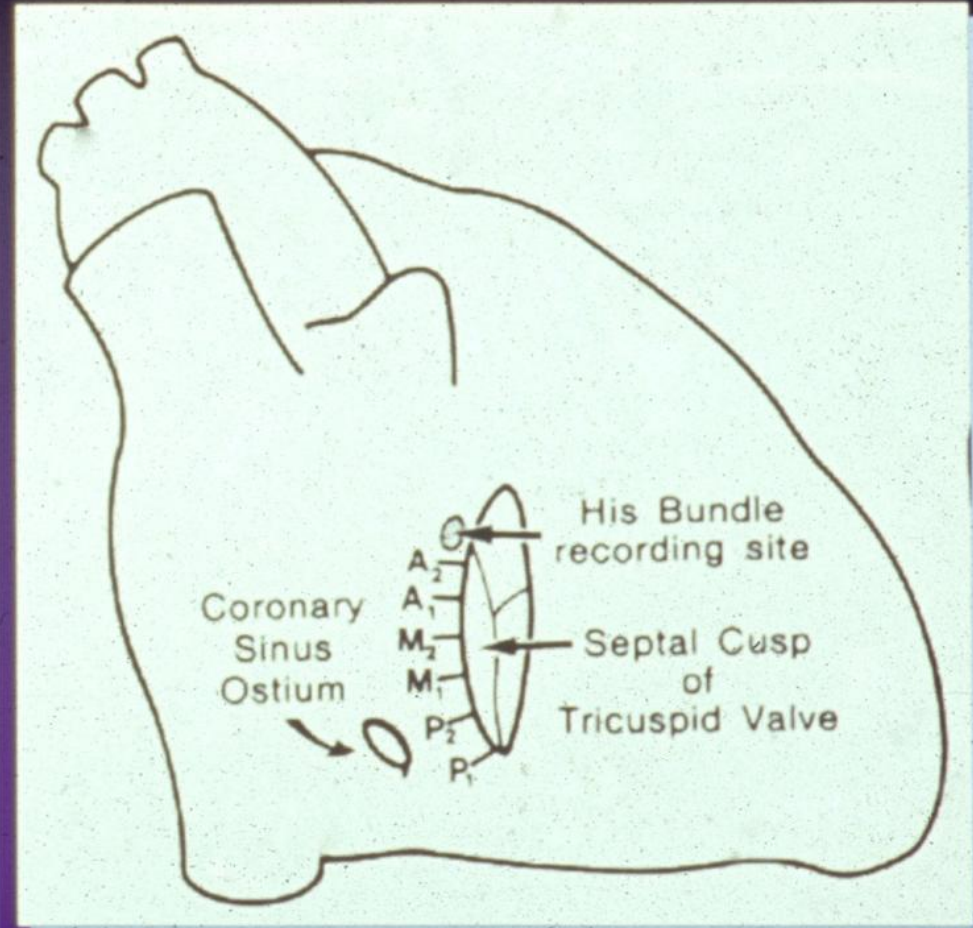
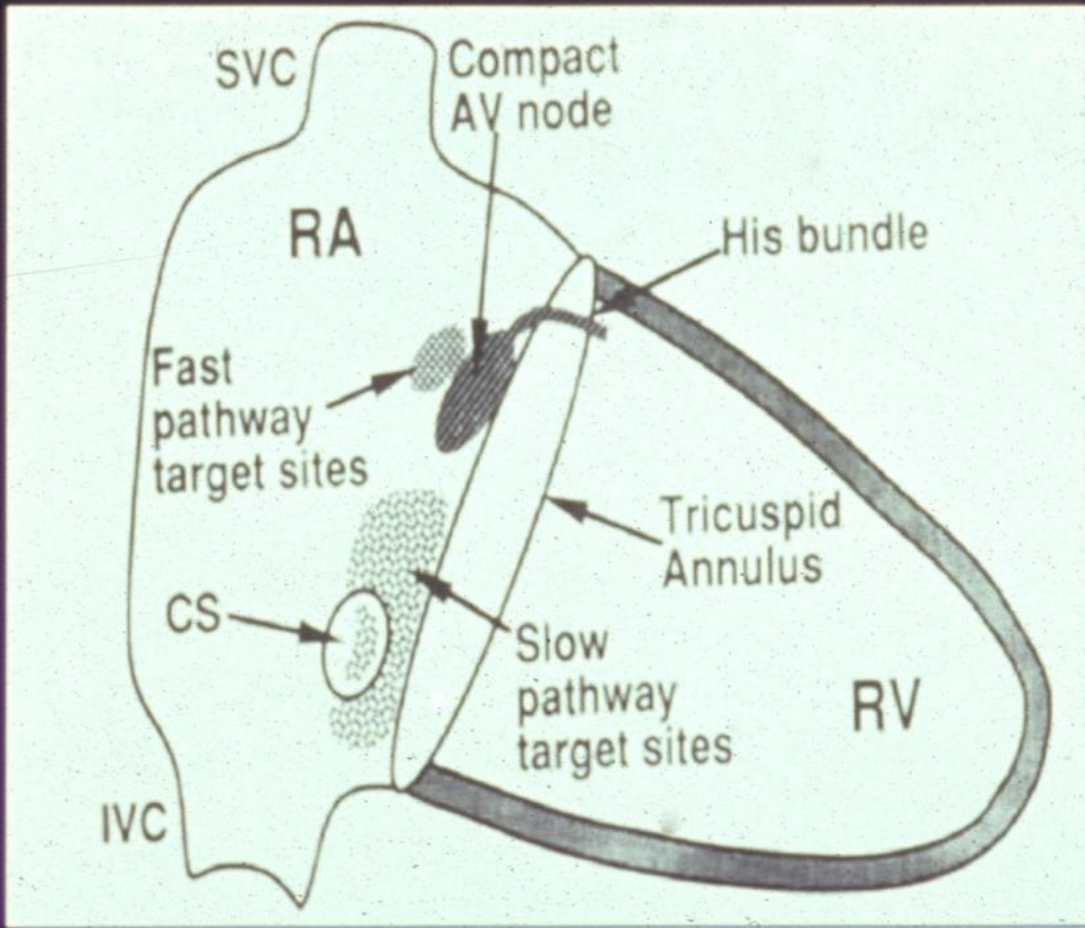
Annual Change of Site-specific Success Rate





Change of Therapeutic Modalities





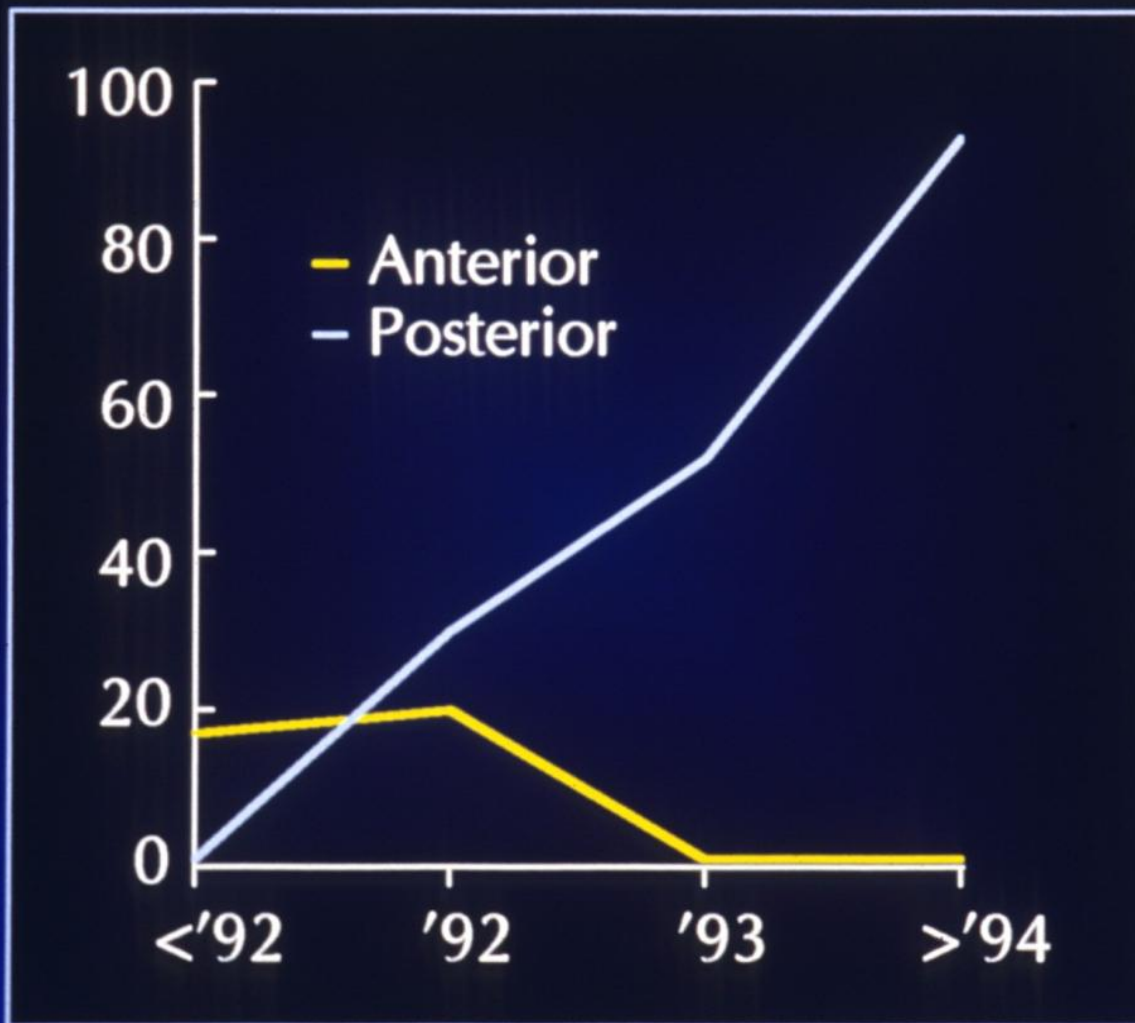
Catheter Ablation of AVNRT in 423 Patients with AVNRT at Yonsei Cardiovascular Center(1987-1997)

	Success (%)	Third Degree AVB(%)	Recurrence Rate(%)
Anterior approach(N=64)	58(90.6%)	3(4.7%)	4/58(6.8%)
Posterior approach(N=319)	318(99.7%)	5(1.5%)	6/318(1.8%)
Total(N=383)	376(98.2%)	8(2.1%)	10/376(2.6%)

* *Permanent pacemaker implantation in 3 patients (Anterior 2, Posterior 1)*



Changes of Approach in AVNRT



Approach
since 1993

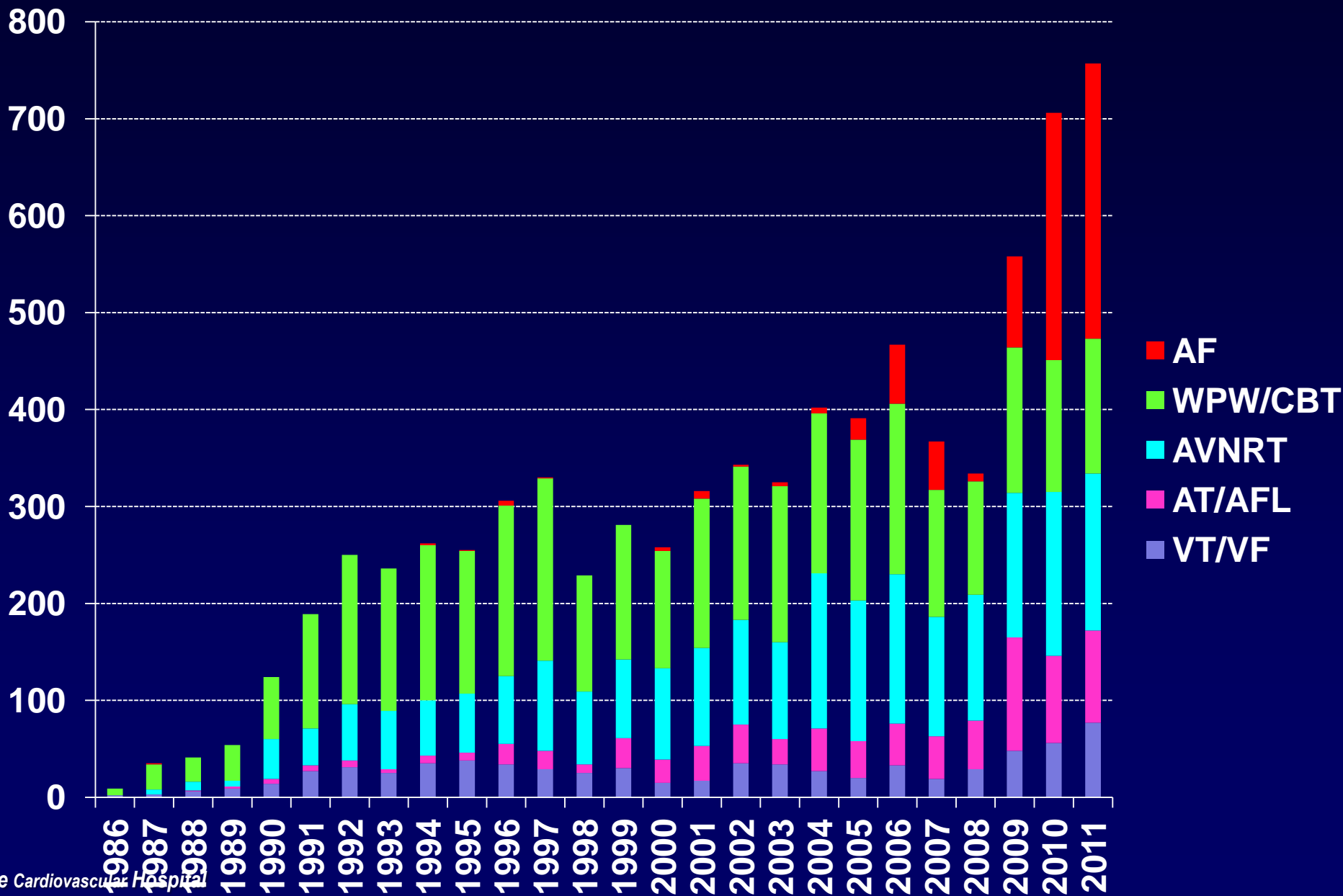
Anterior	2
Posterior	145

Success rate

145/147 98.6%



EP Study at YUHS (1986-2011)





2009-10-17





**Old soldiers never die
They just fade away...**





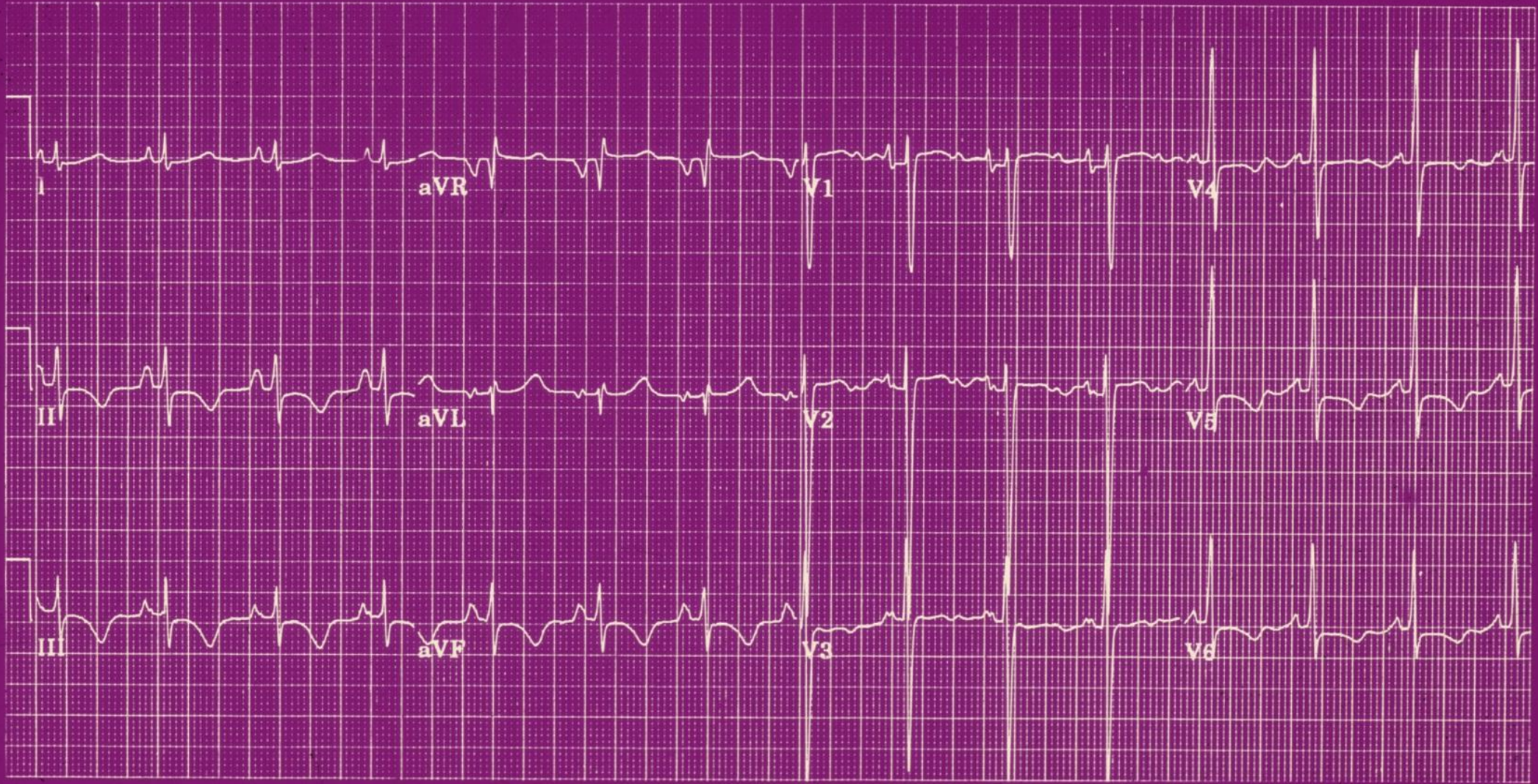
EP Study for 1294 Patients with AP (1986.11.~1999.9.)

EP study and ablation	n
Diagnostic EPS and drug study only	48
Surgical ablation	63
Catheter ablation with DC current	305
Catheter ablation with RF current	1020
 Accessory pathways	1081
 Therapeutic RF sessions	1120





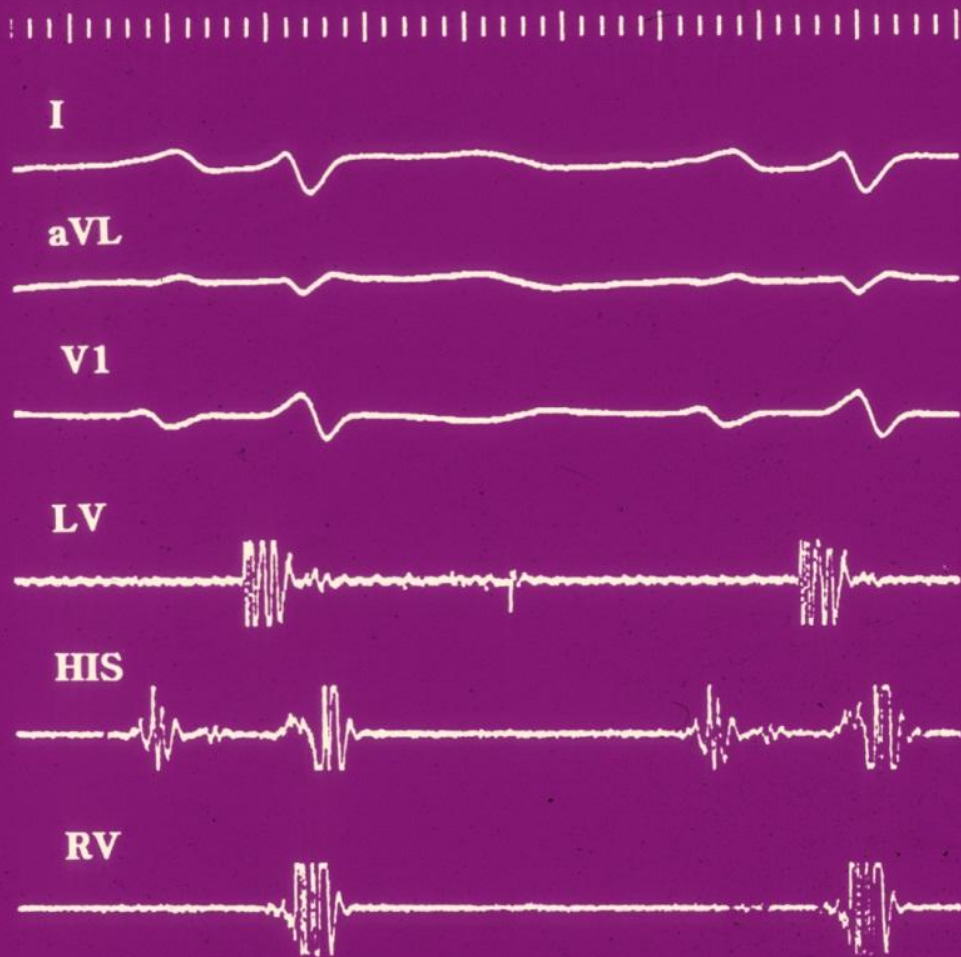
10 26 '94



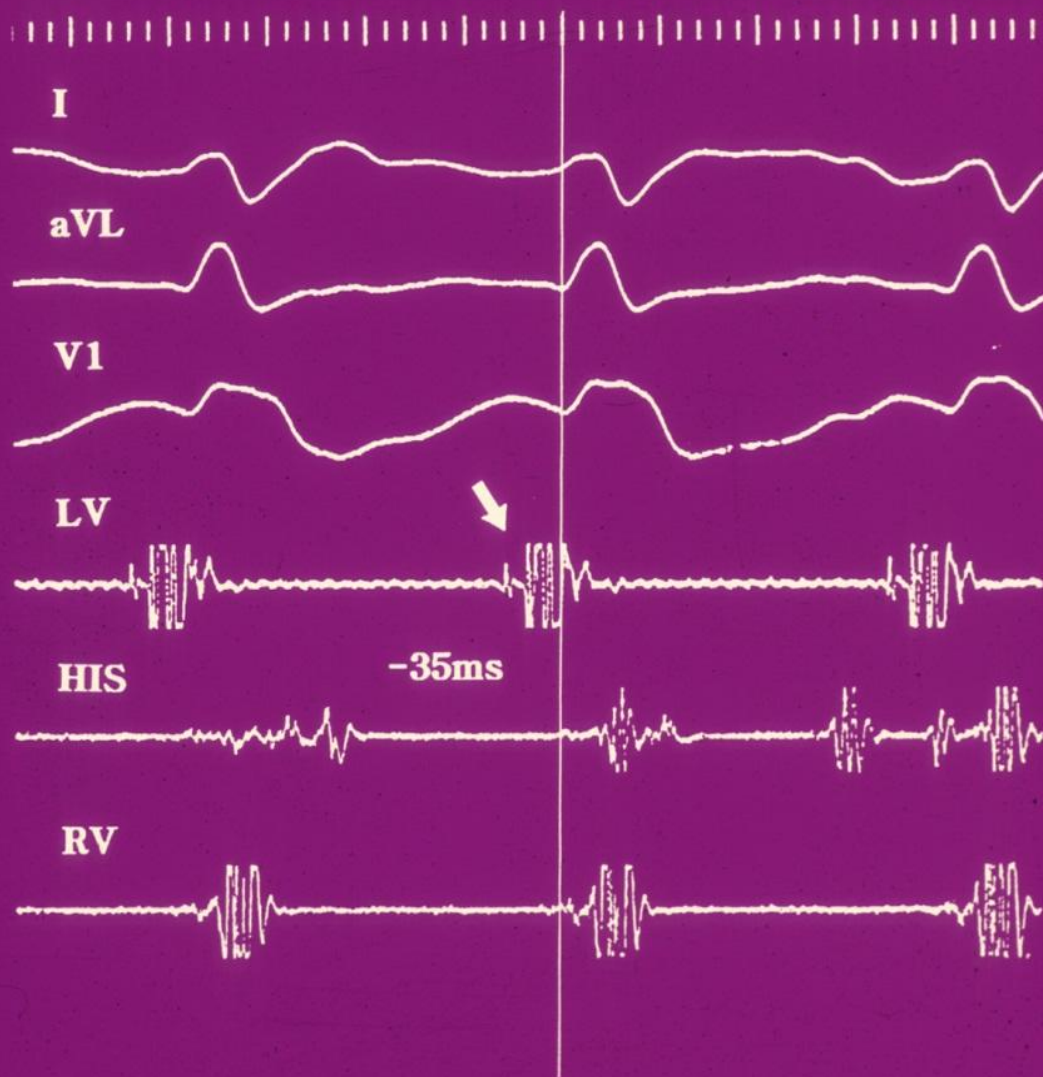
** Chest leads at half standard **

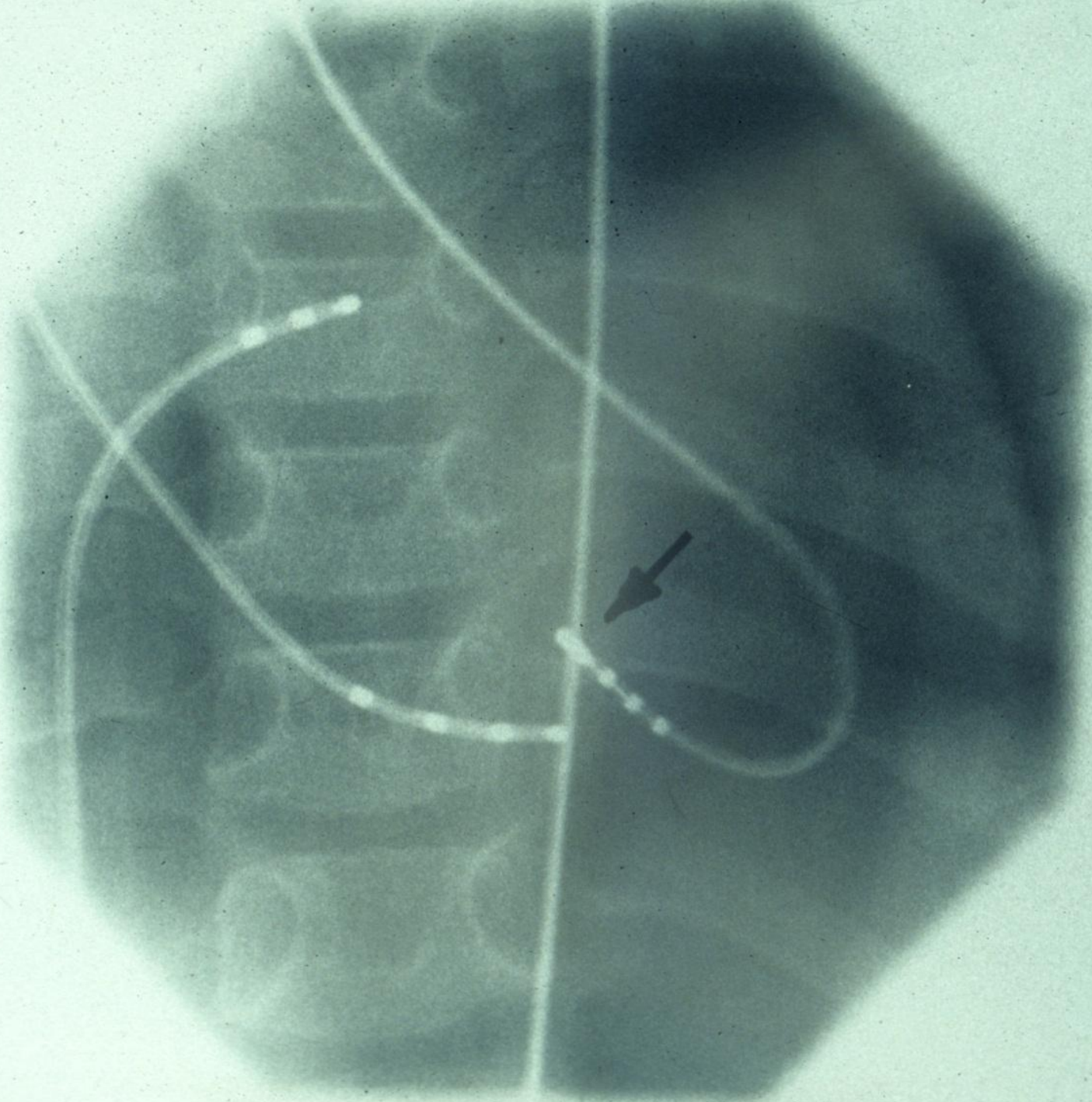


1A



1B







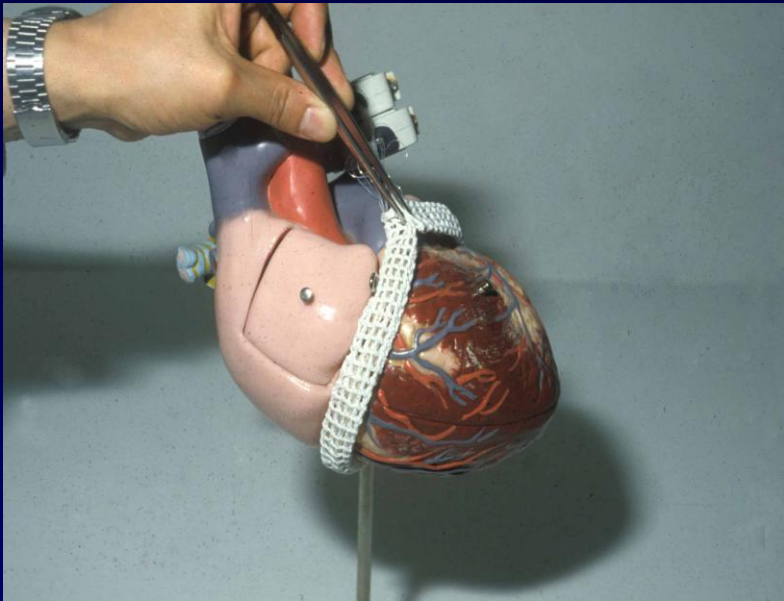
차홍도 교수님



Kenneth M. Rosen, MD

Bypass Tract

Anatomical Basis of AP



Klein, GJ et al
Circulation
1980;61:1249-56

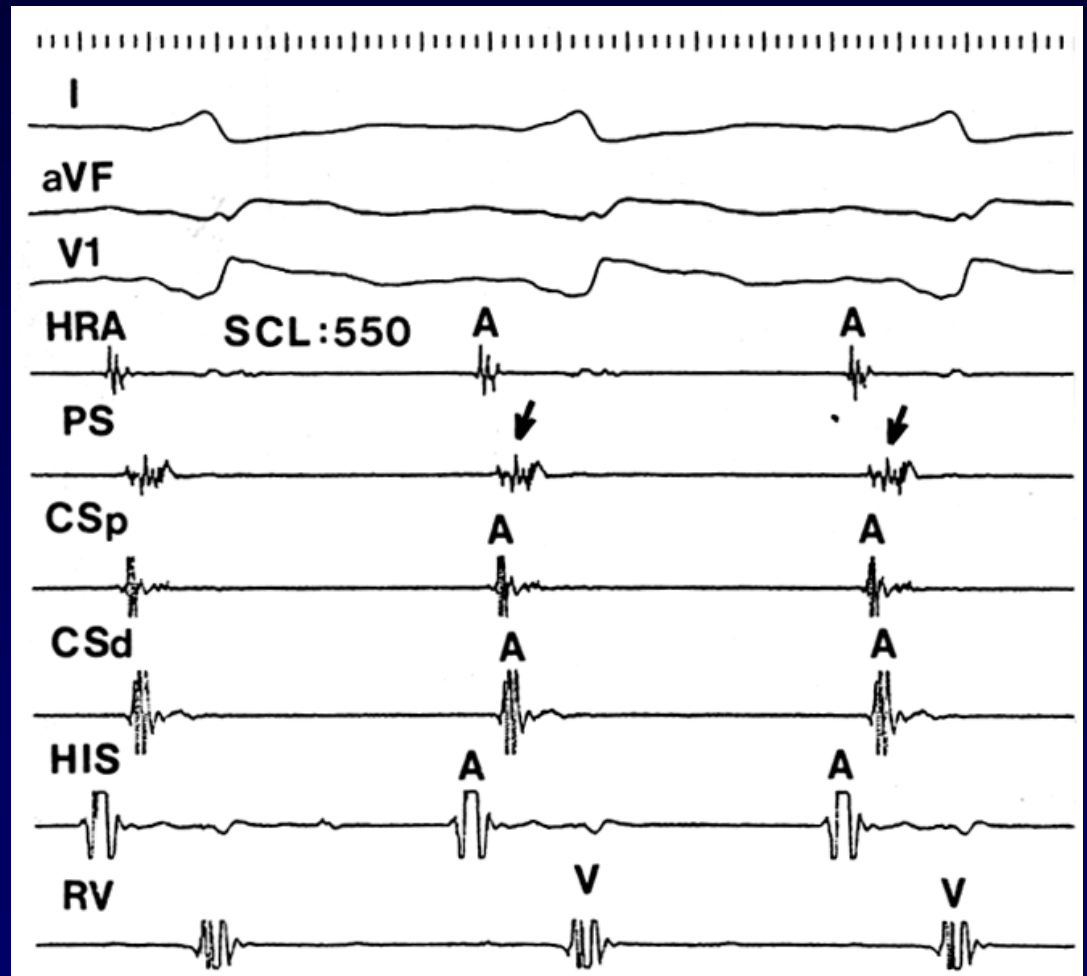
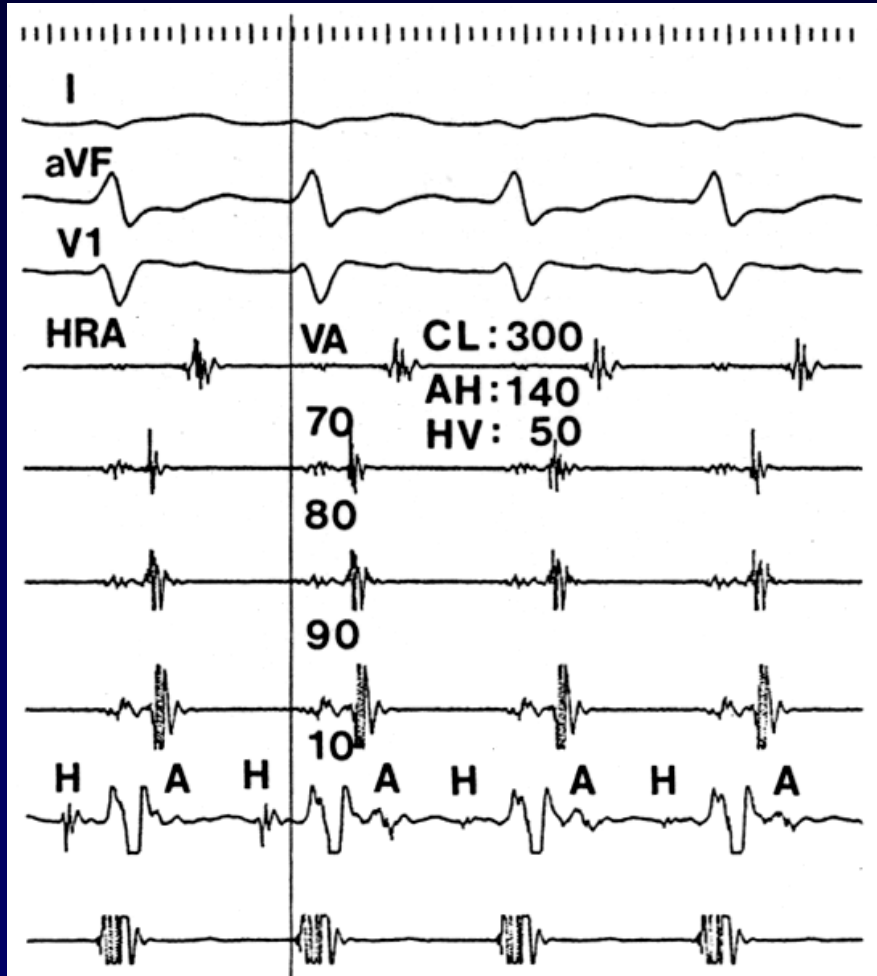


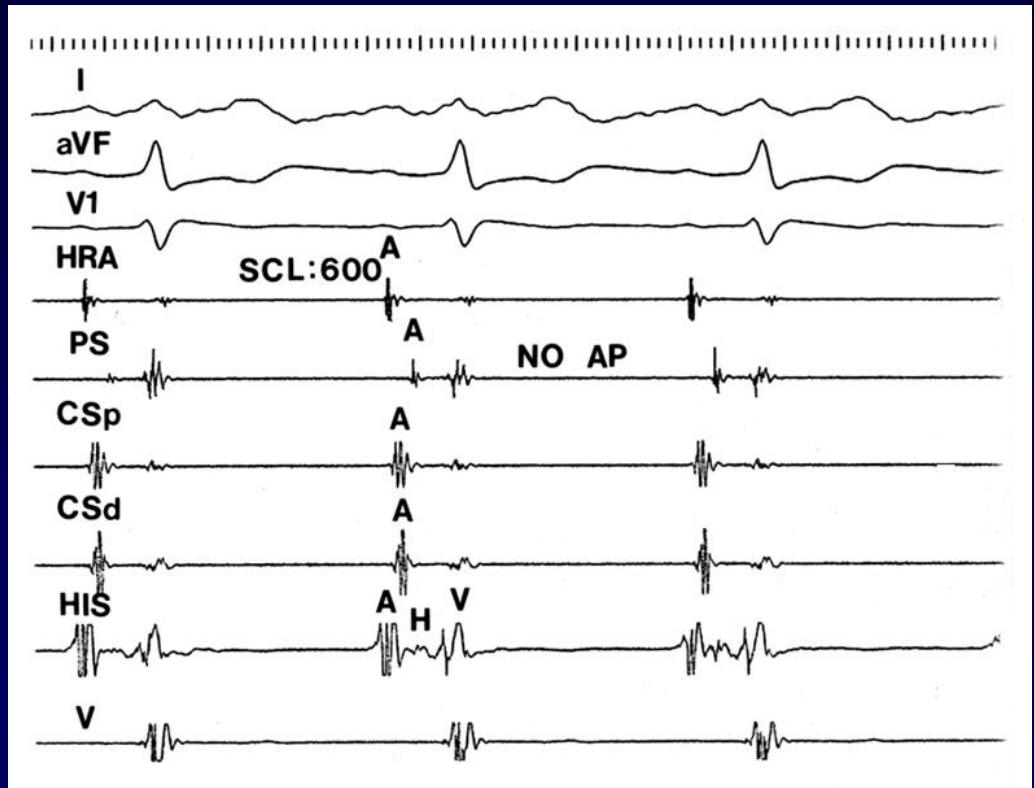
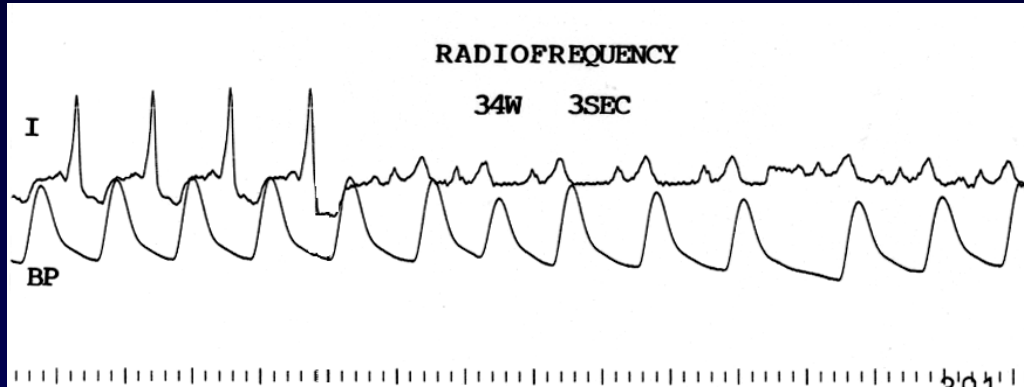
Clinical Characteristics of Patients treated with Arrhythmia Surgery (1987~1995)

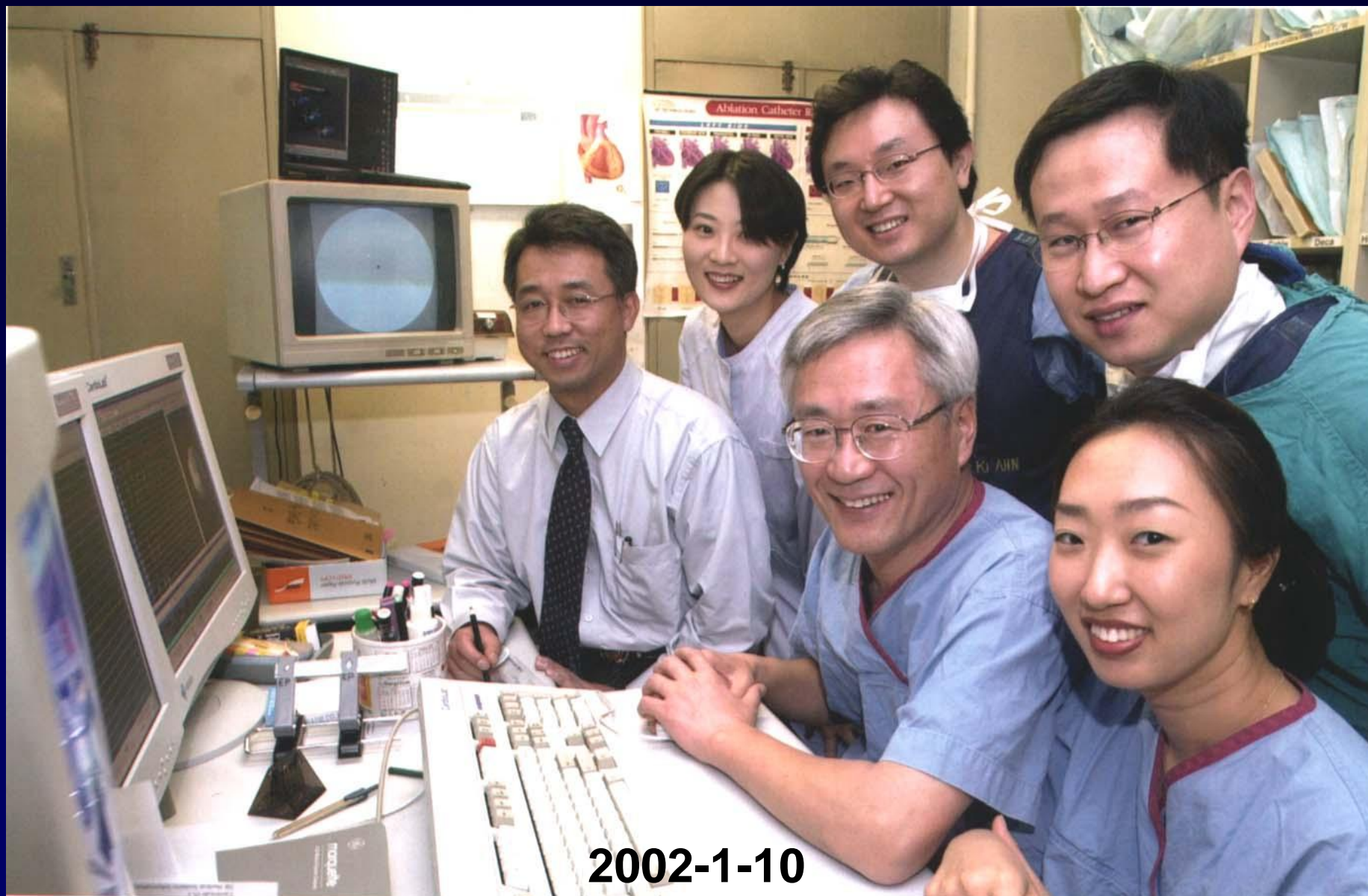
- **N=70 (M=37)**
- **Mean age=30.2 ± 14.7**
- **Associated heart disease=27 (39%)**

Jang and Kim et al. unpublished data









2002-1-10





2009-10-17

