



HIS BUNDLE PACING FOR CRT

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*The Arrhythmia Heart Failure Academy*  
The Madras Medical Mission

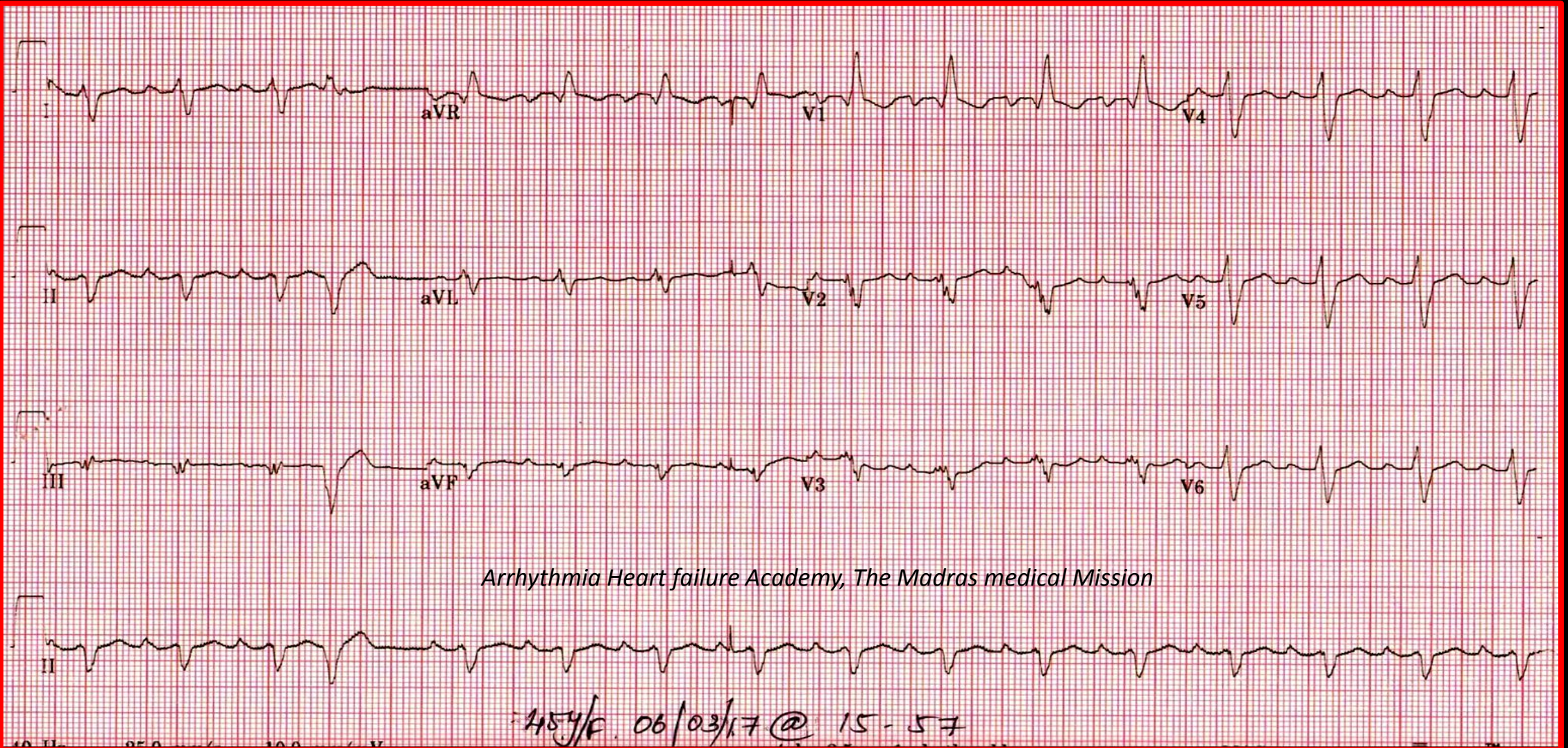


## His Bundle Pacing in lieu of biventricular pacing for CRT

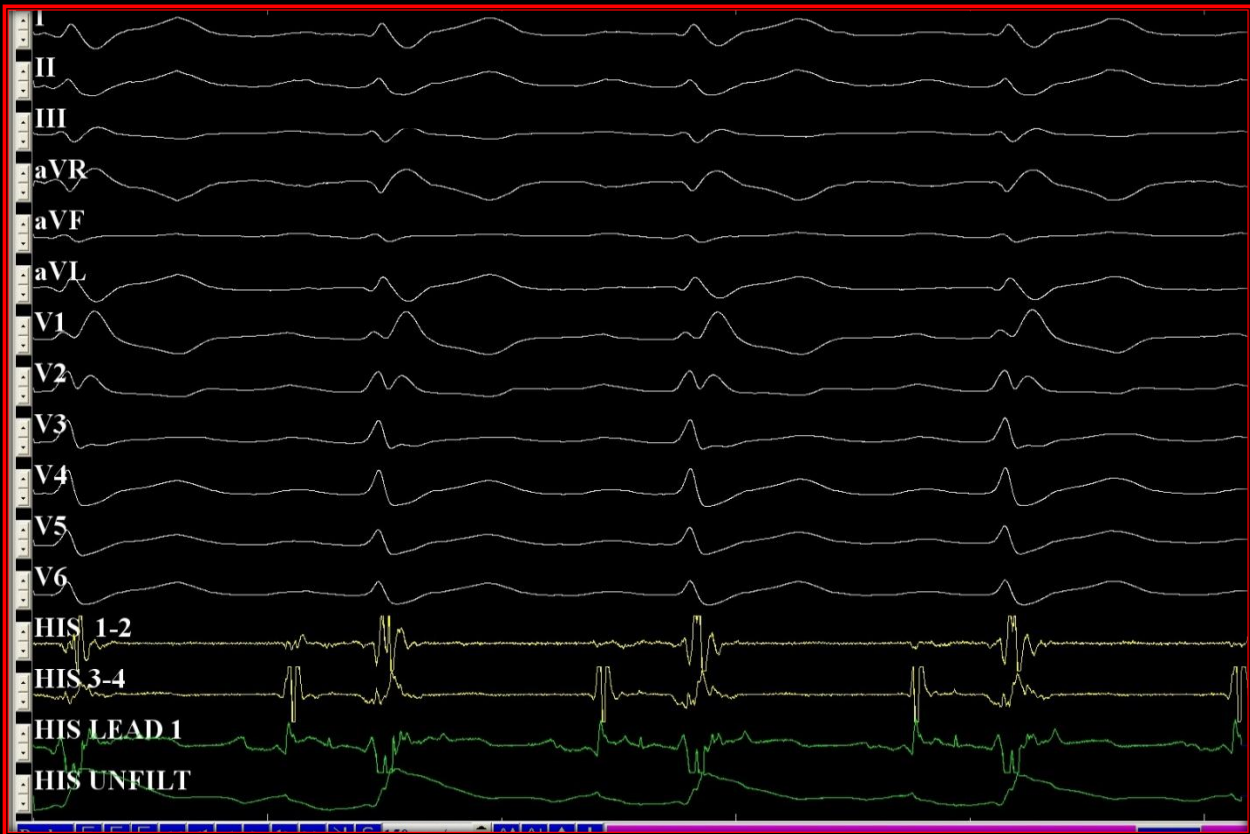
His Bundle Pacing recently has been considered to correct A-V blocks and achieving narrow QRS

Recent reports have also shown improved outcome with direct bundle branch pacing at the distal His Bundle or proximal bundle branches in the intraventricular septum

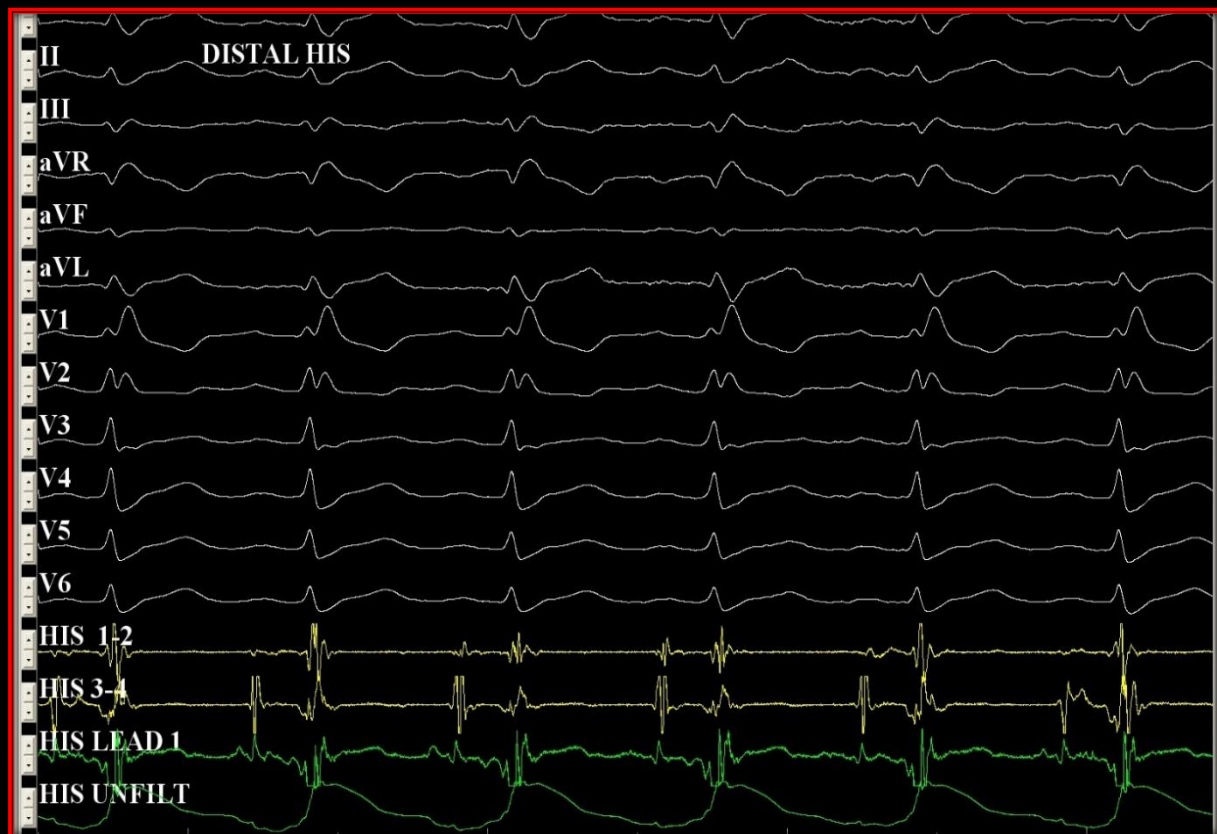
45Y, F, Severe LV dysfunction, Intermittent High grade AV block, Resistant heart failure



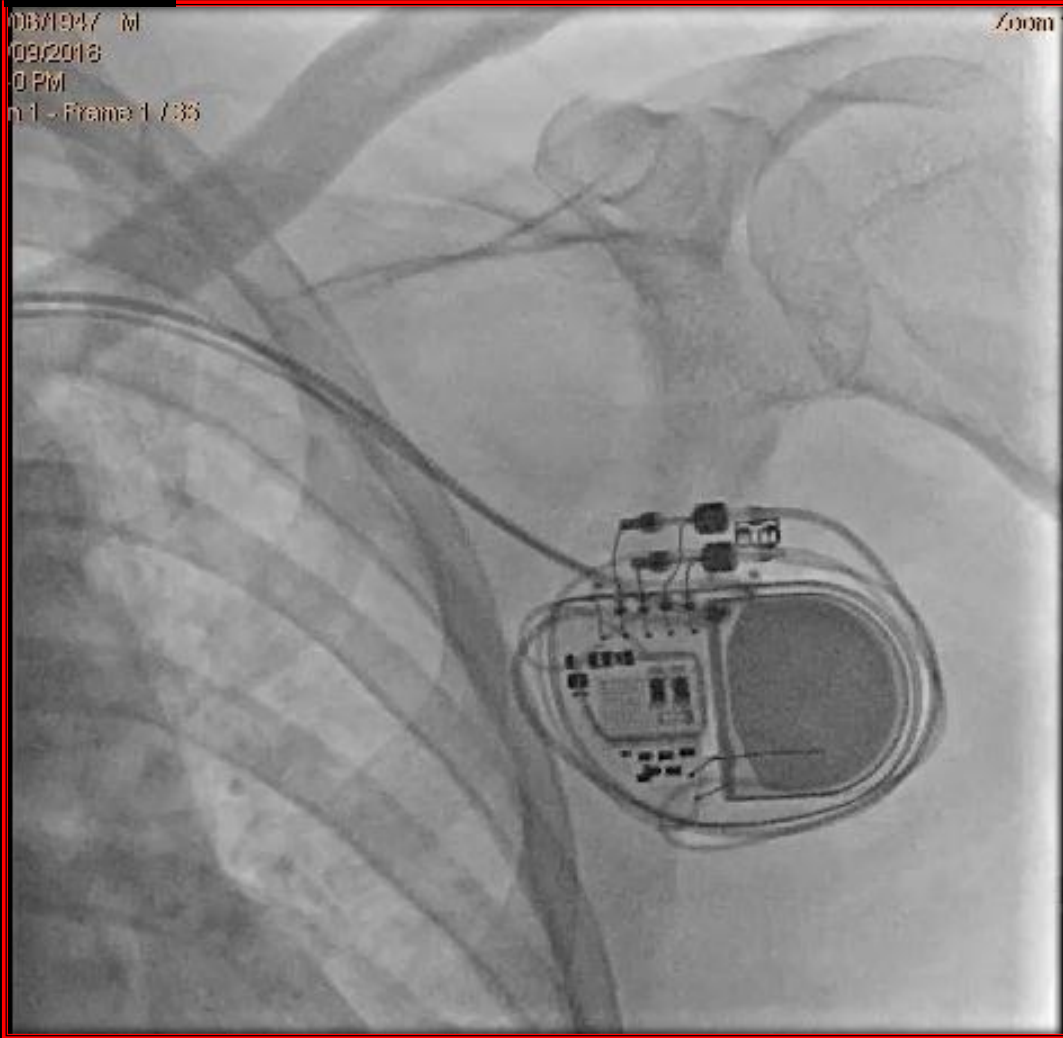
# Proximal HIS



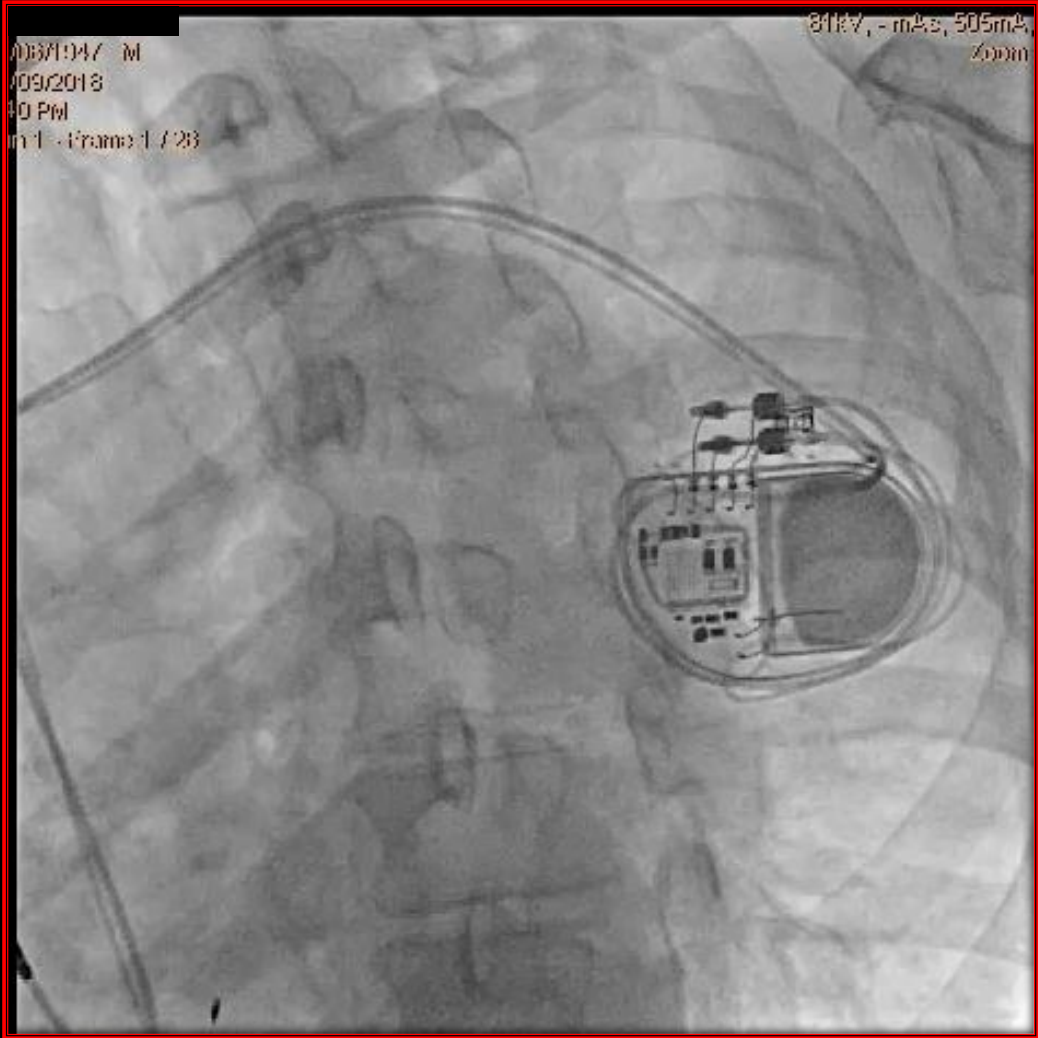
# Distal HIS



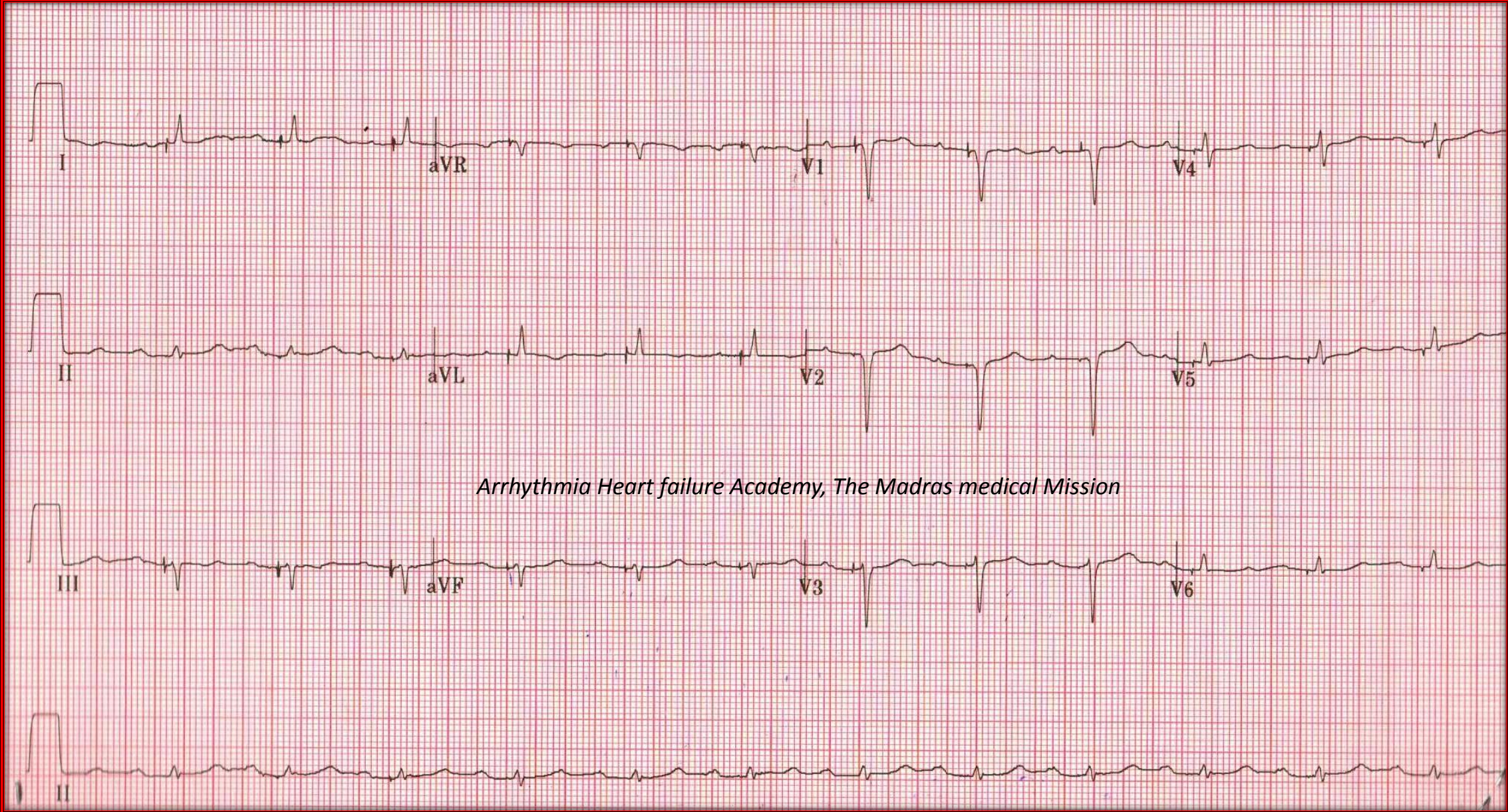
AP VIEW



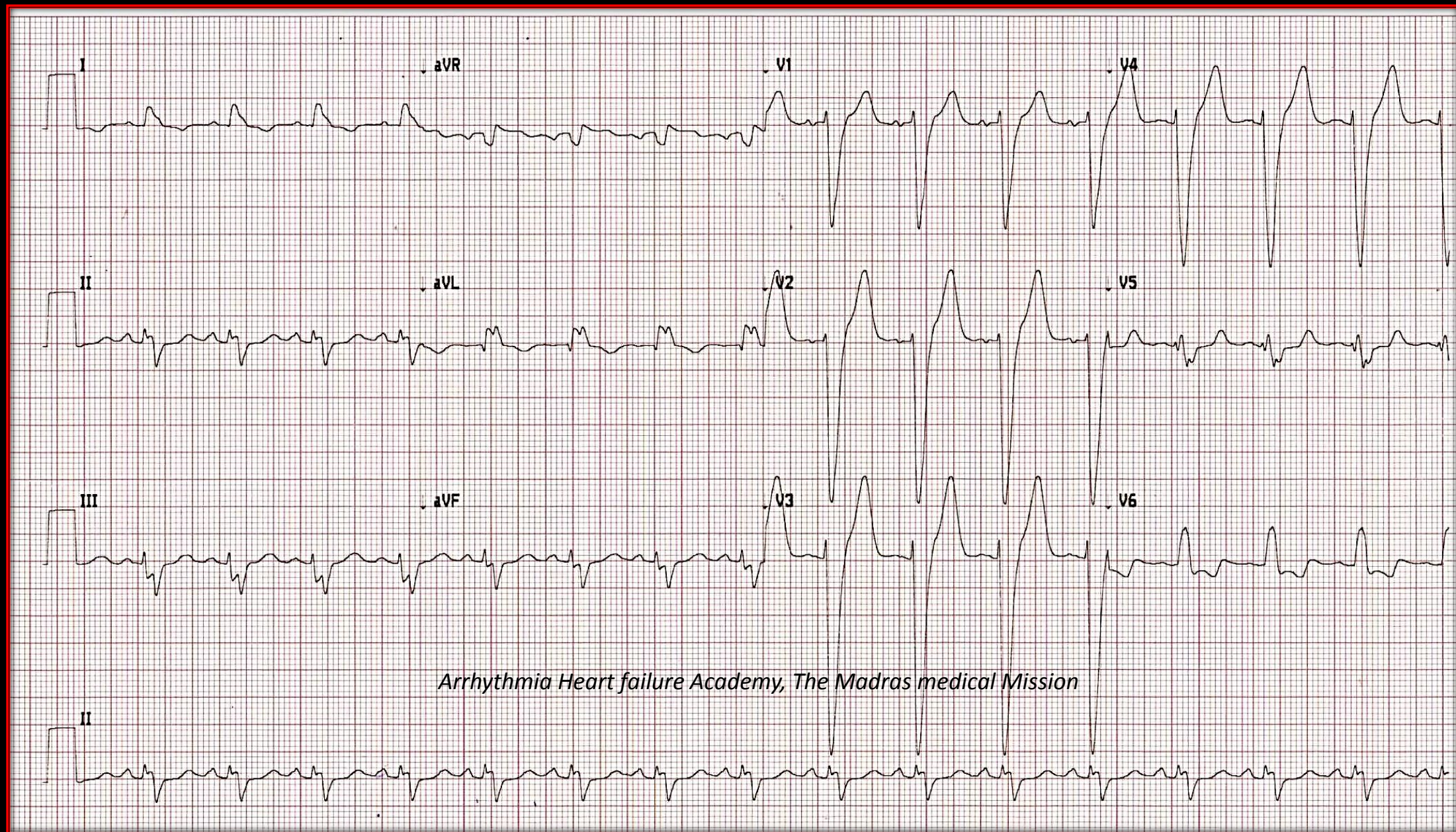
LAO VIEW



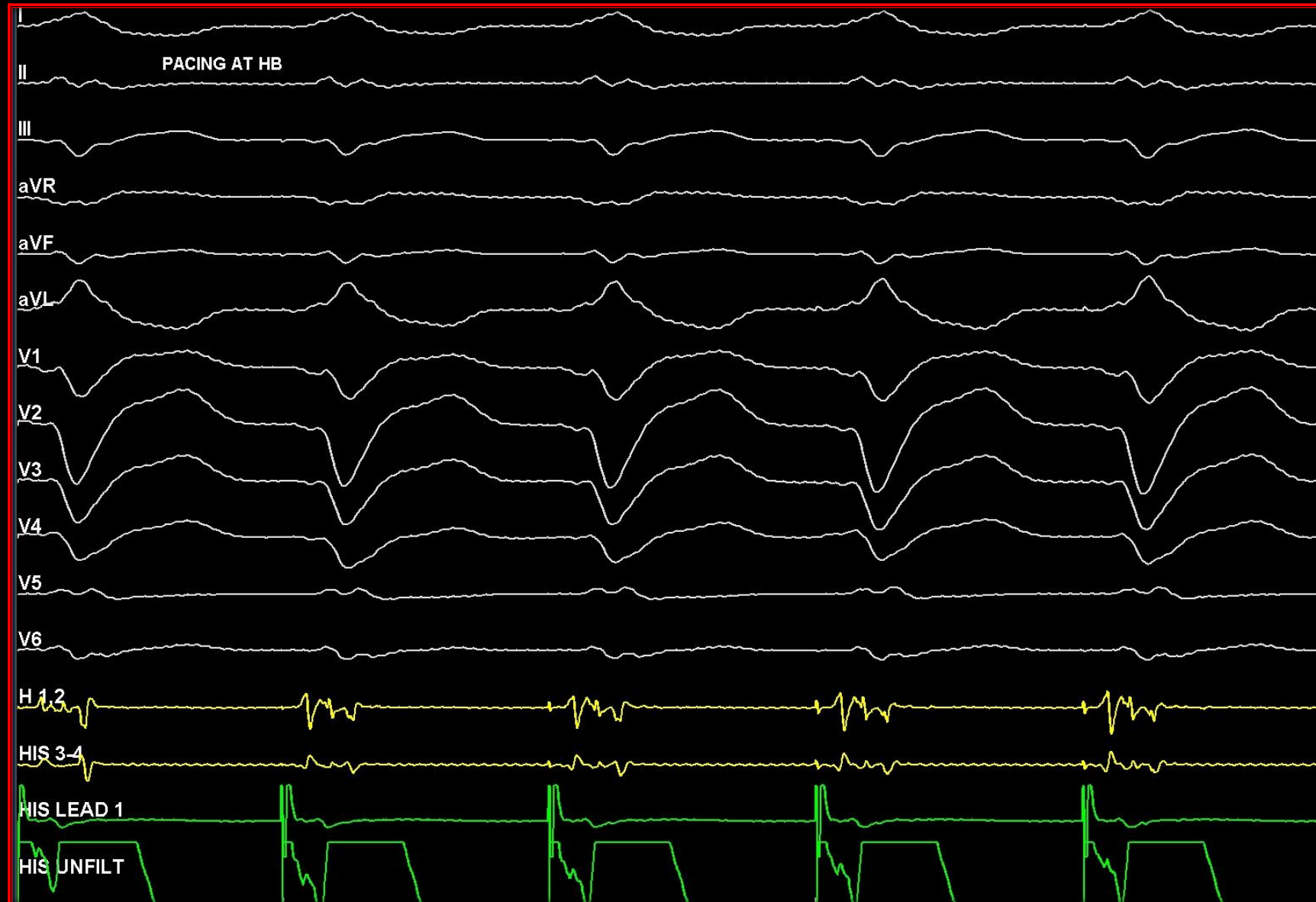
# POST ECG



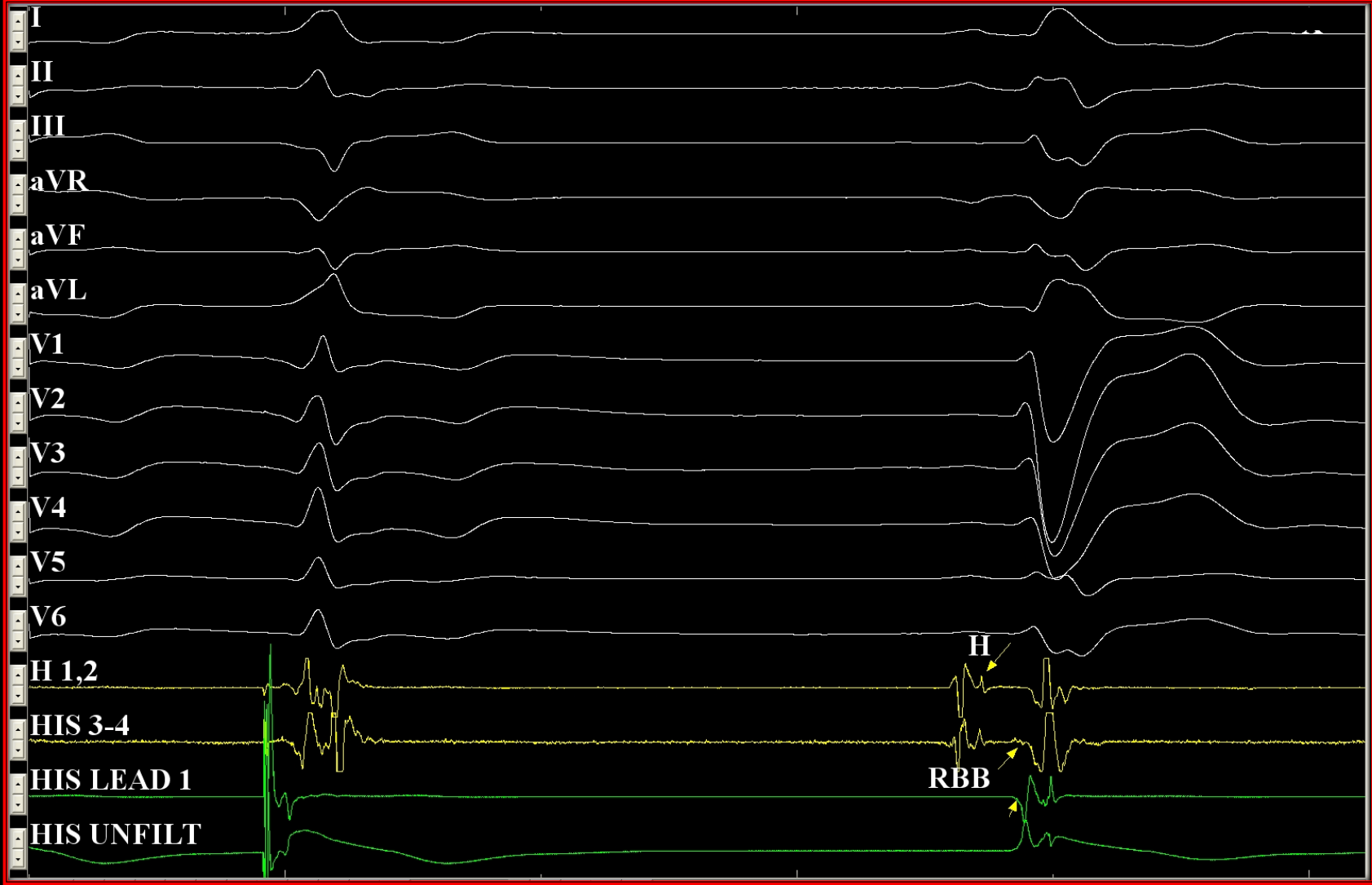
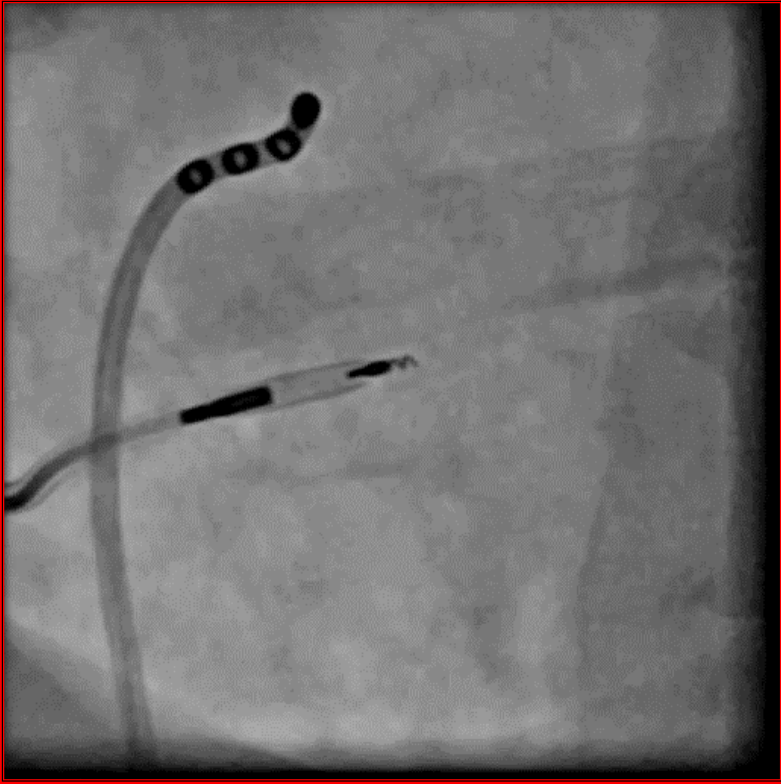
59Y, M, DCM, Severe LV dysfunction, NYHA class III-IV dyspnea

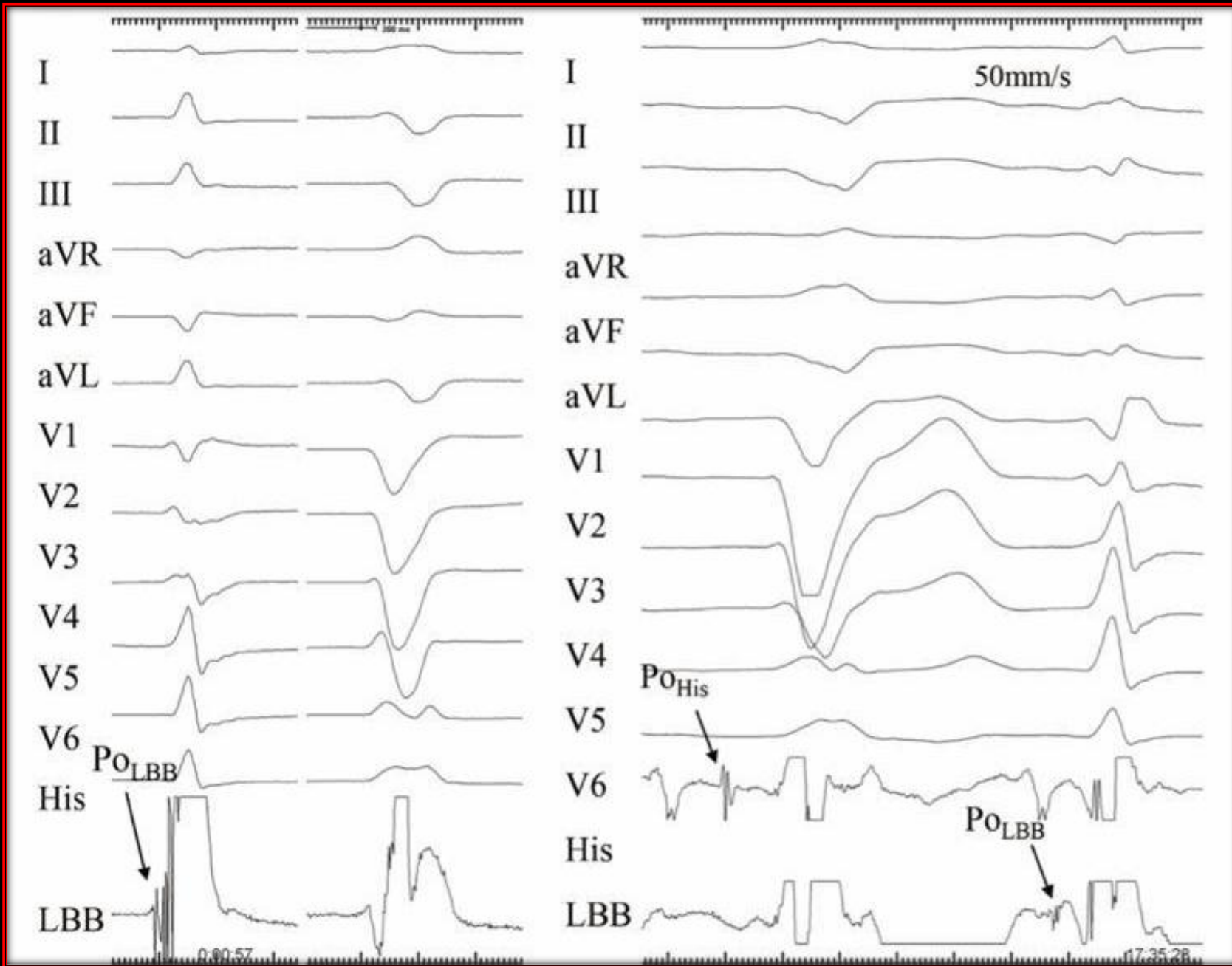


# Pacing at His Bundle

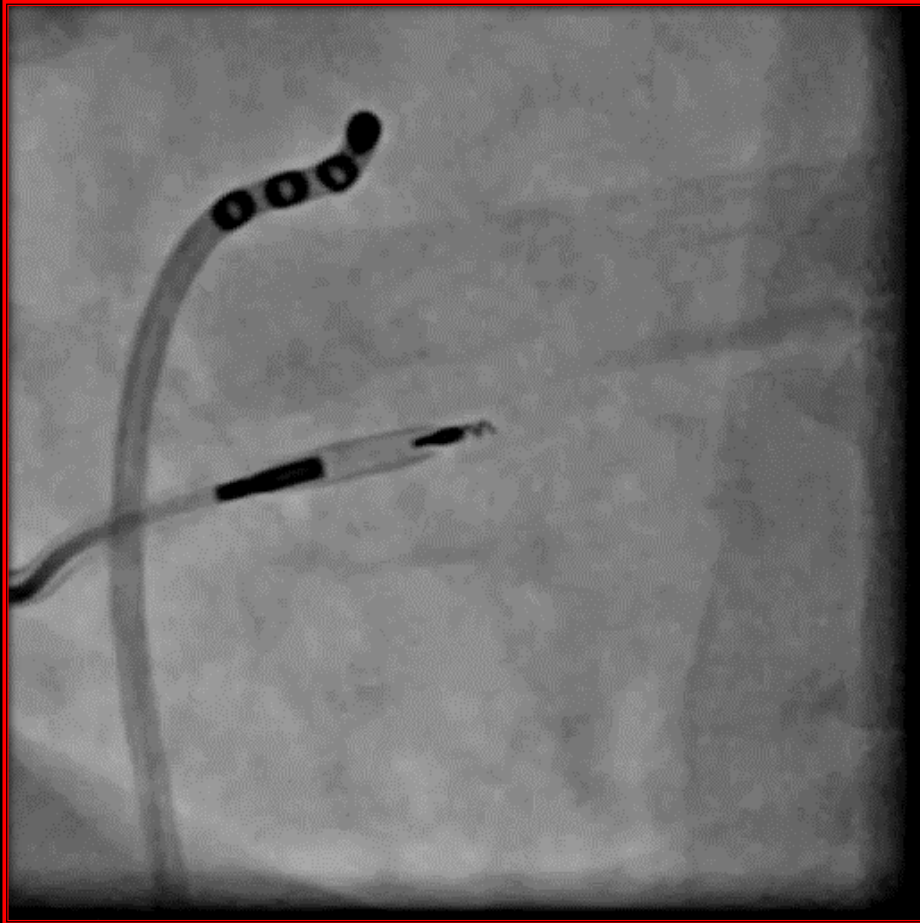


**LAO VIEW**

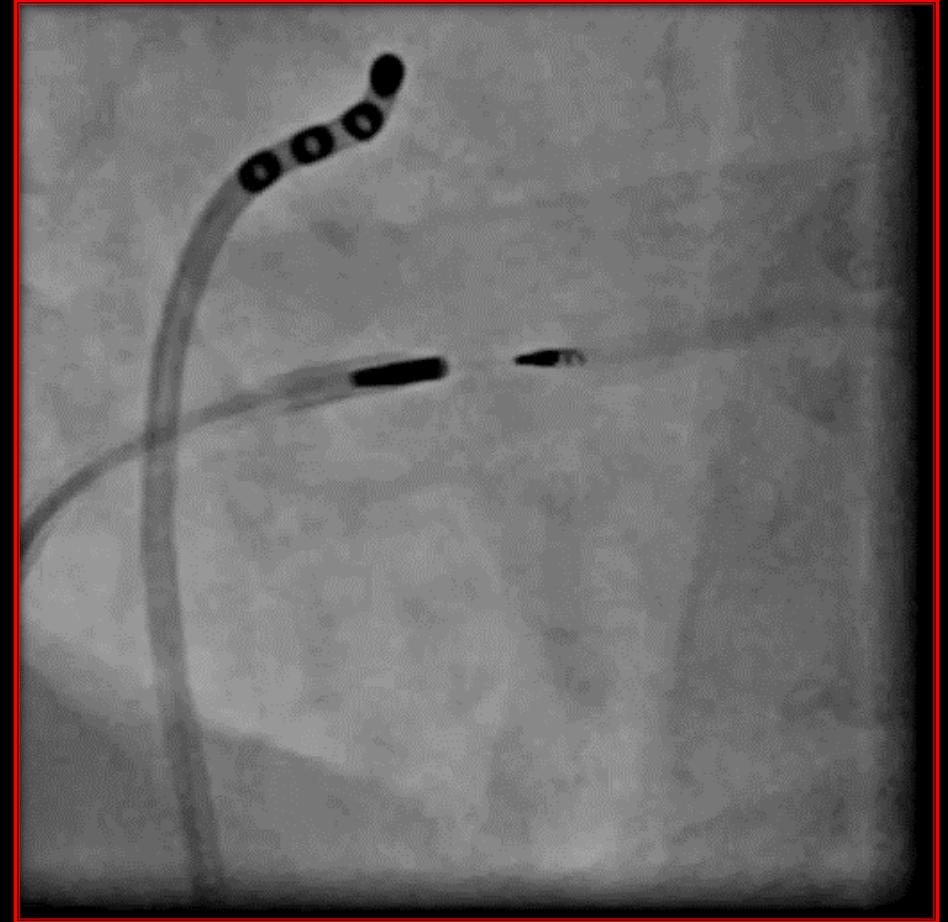




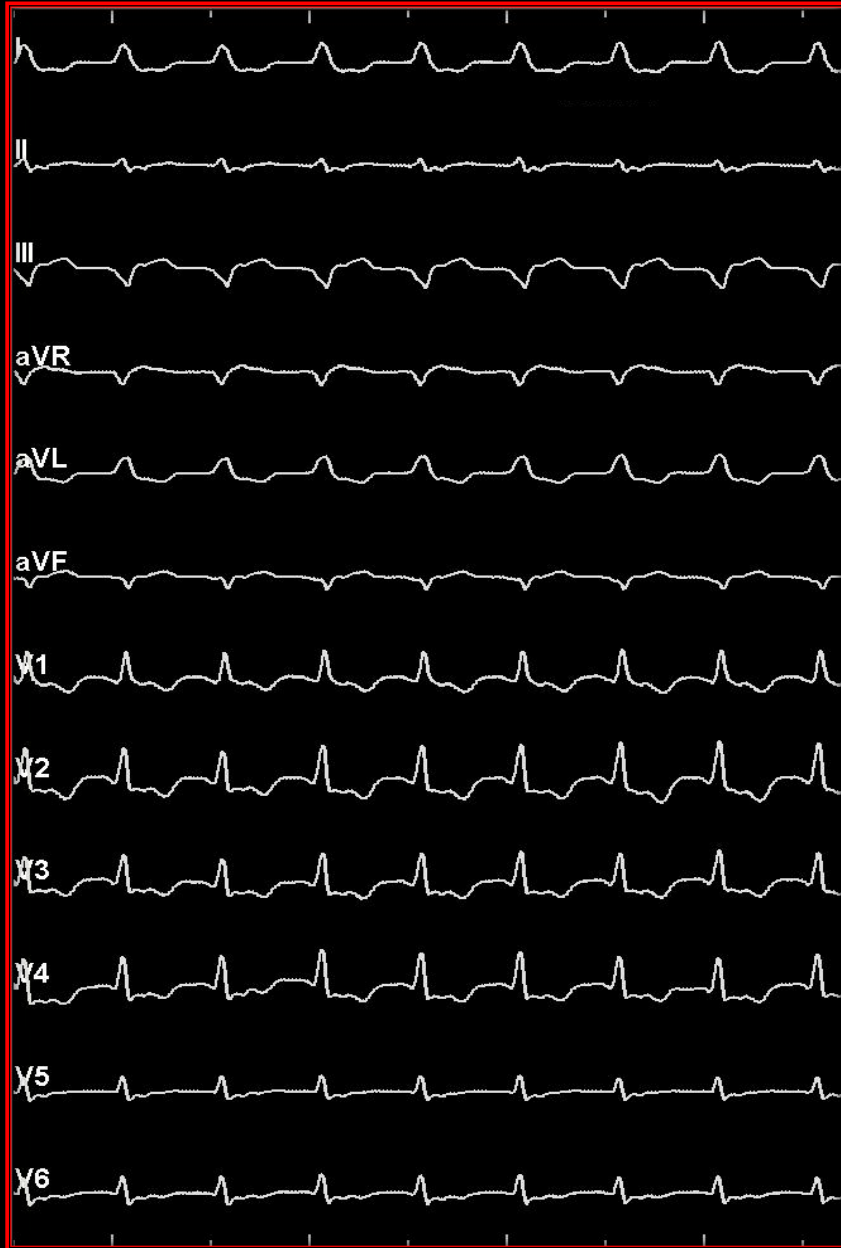
Before Screwing



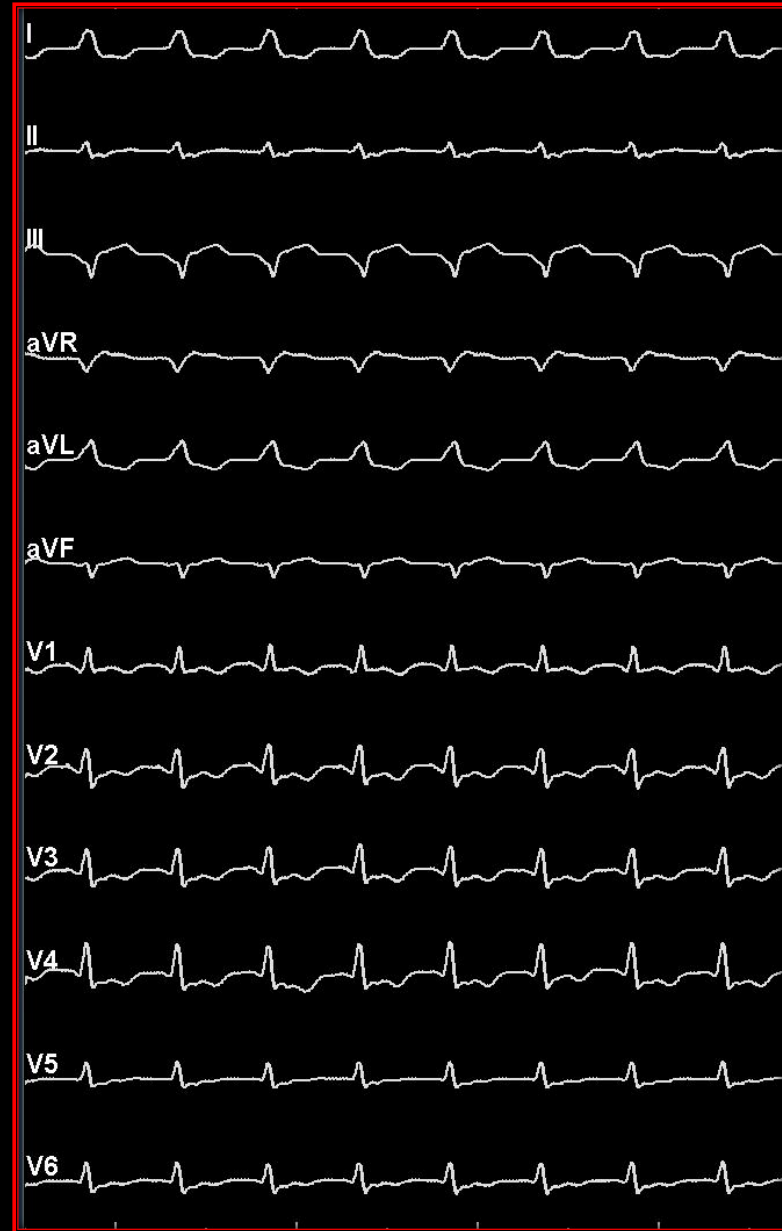
After Screwing

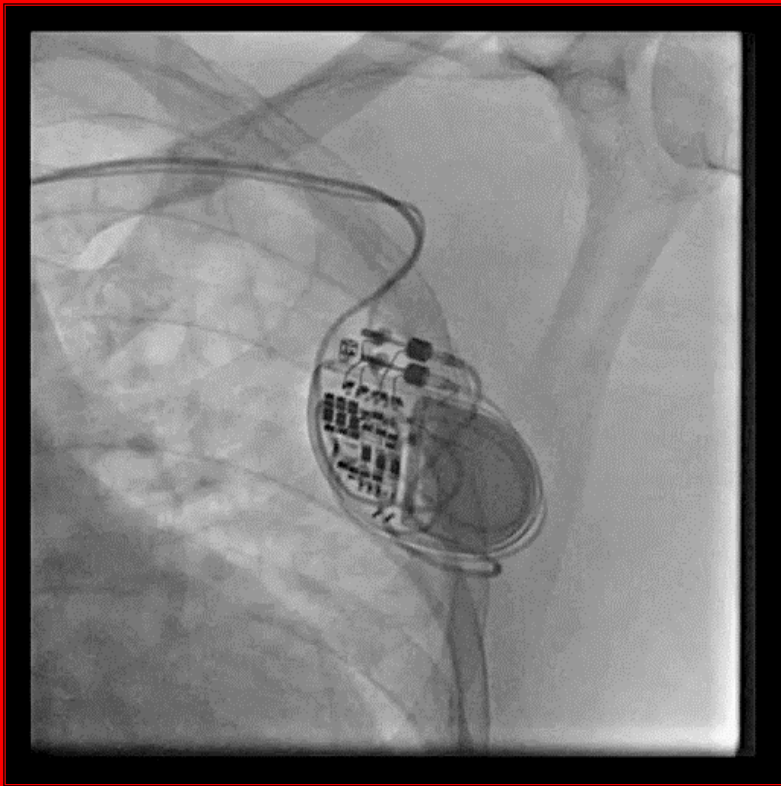


6V @ 0.4ms



1V @ 0.4ms

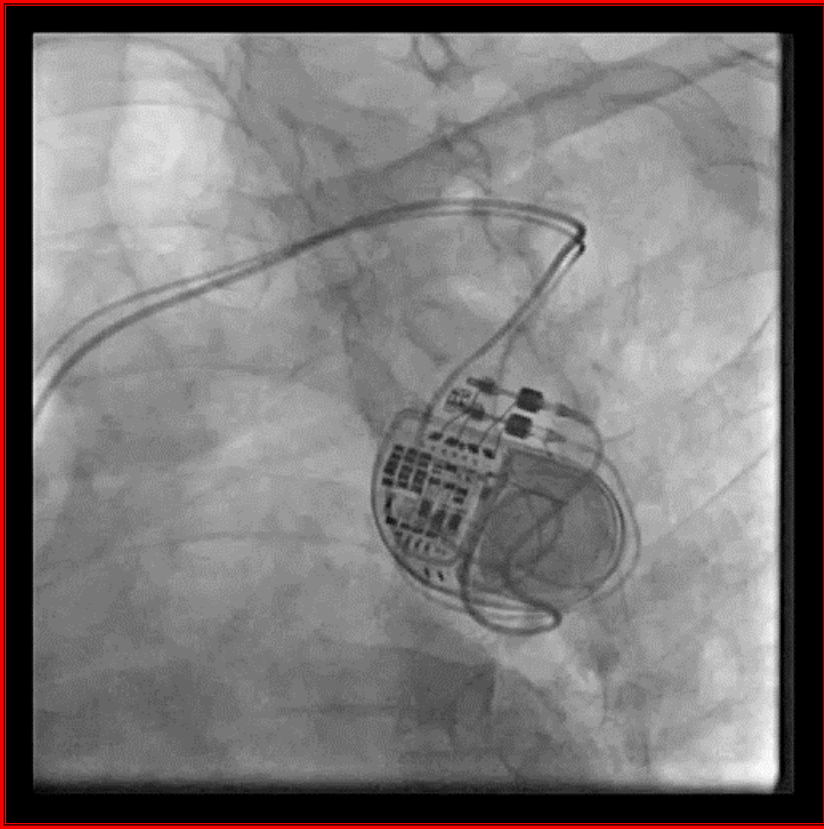




PA

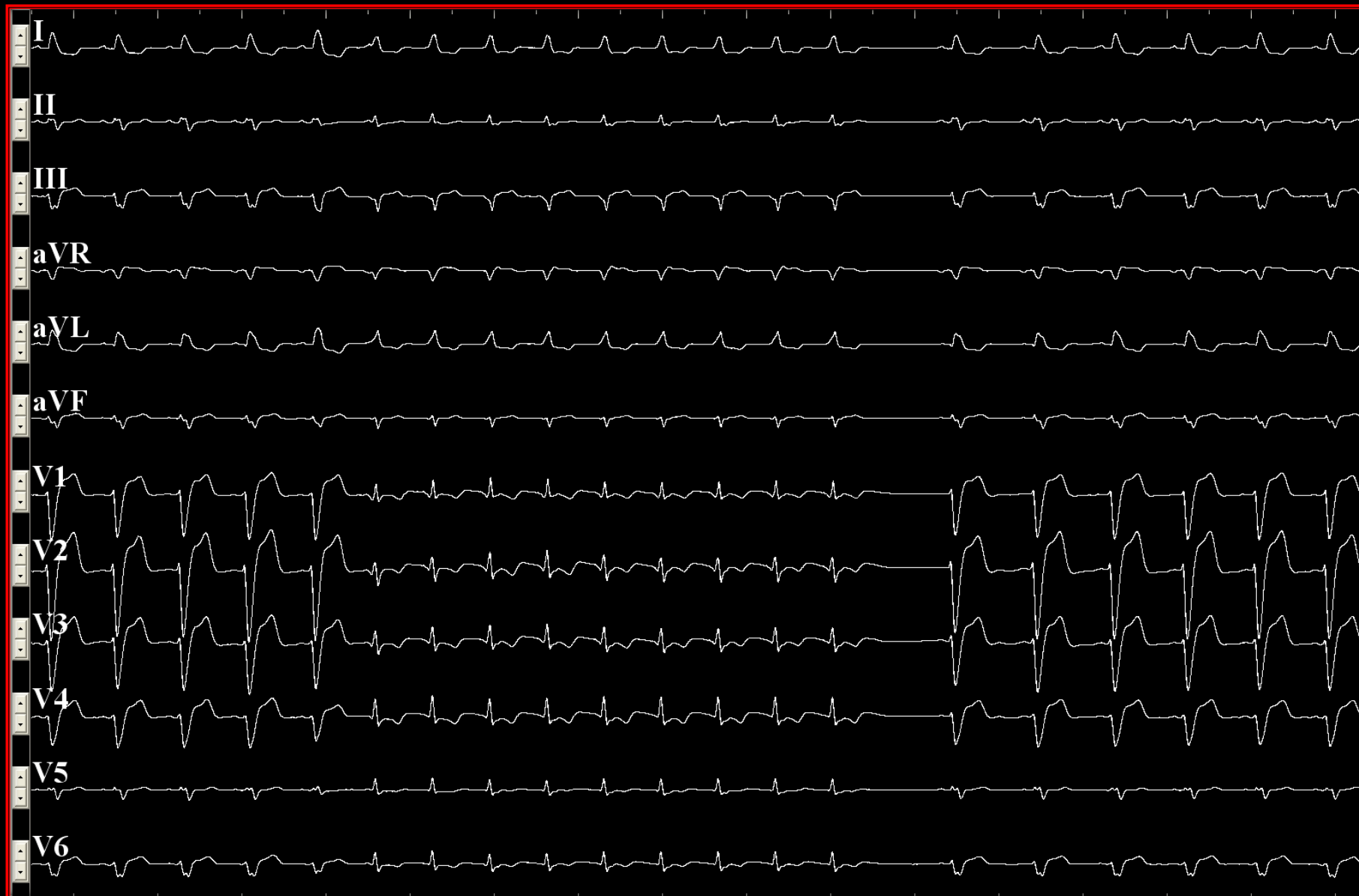


Lateral

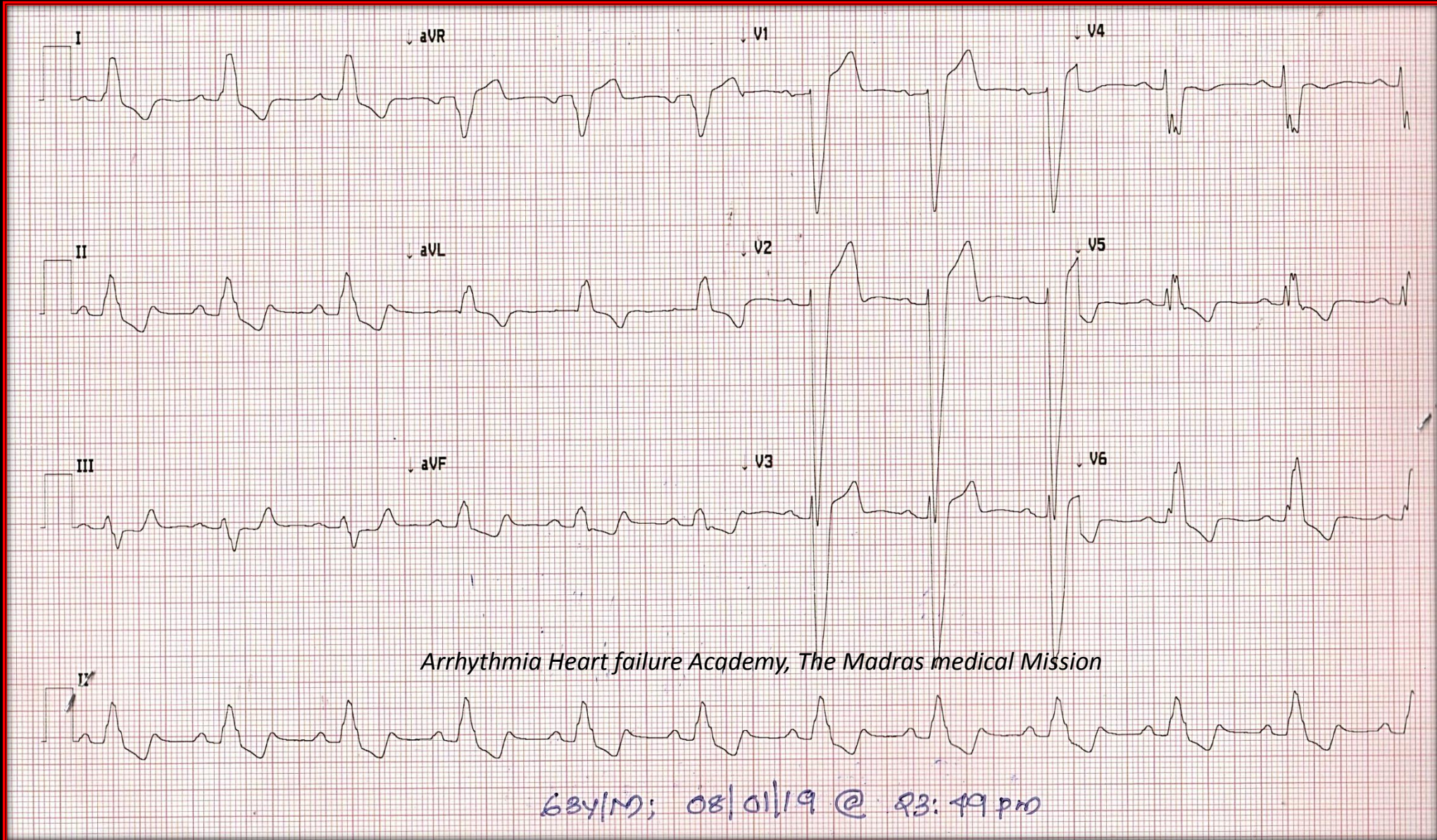


LAO

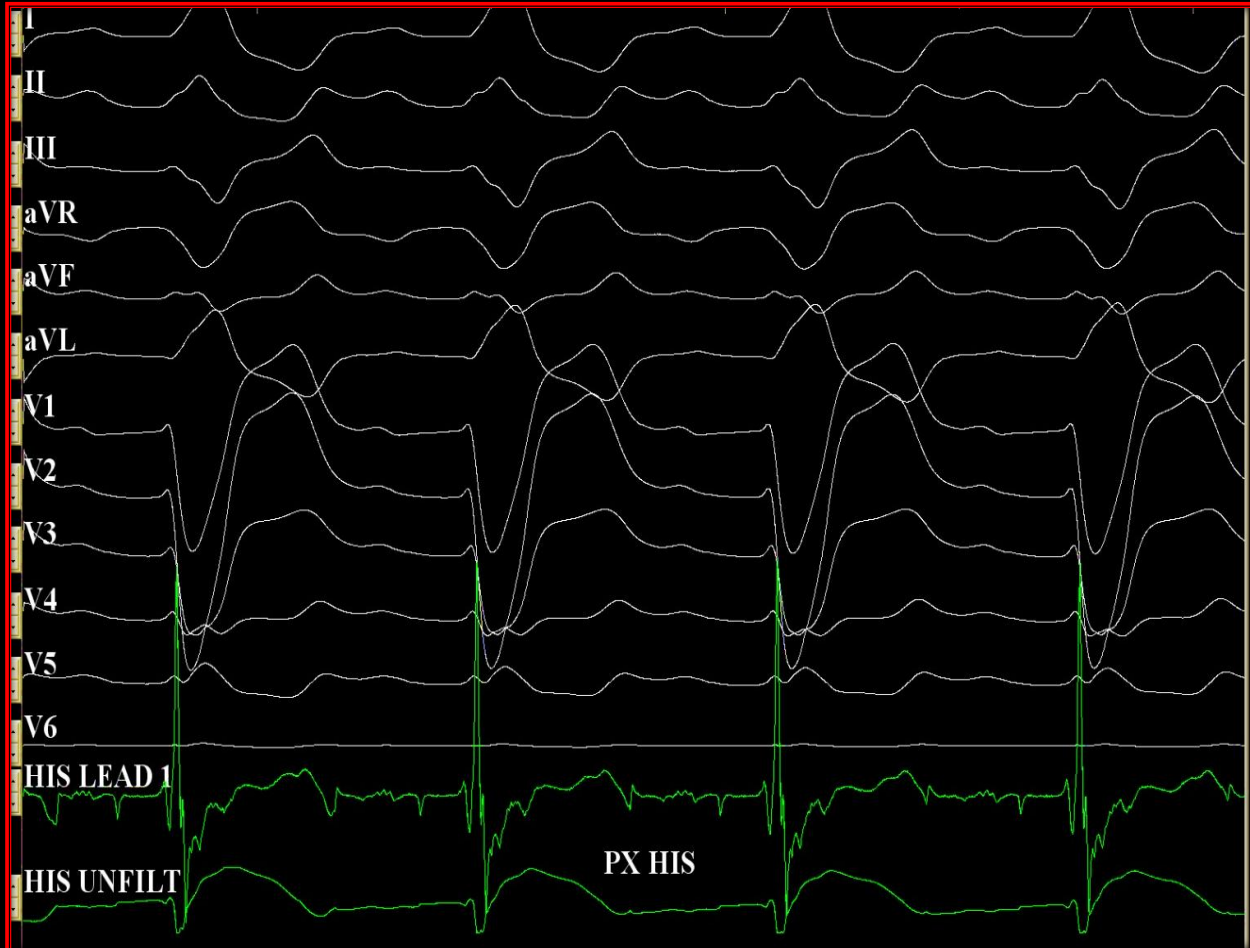
# POST ECG



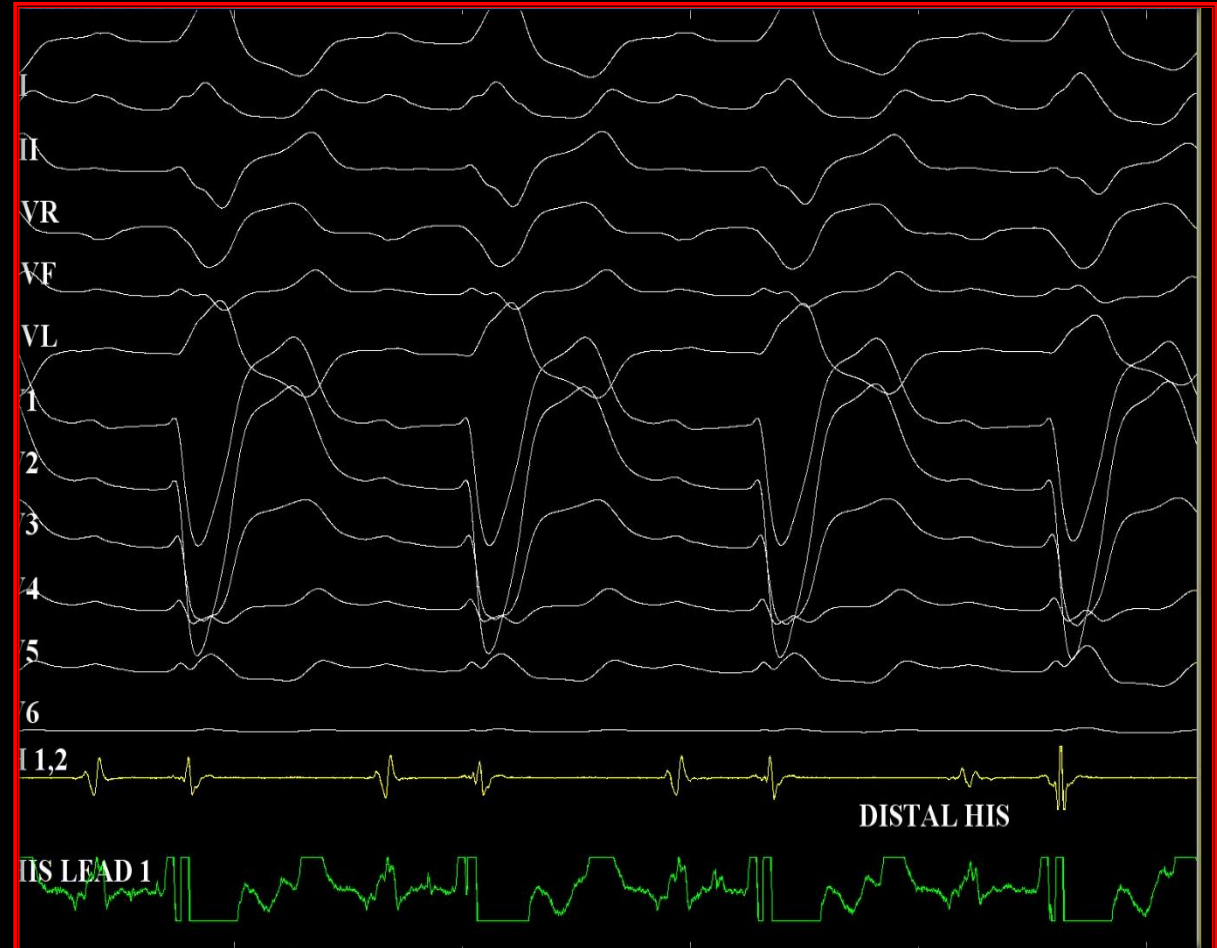
# 63Y, M, ICMP, Severe LV dysfunction

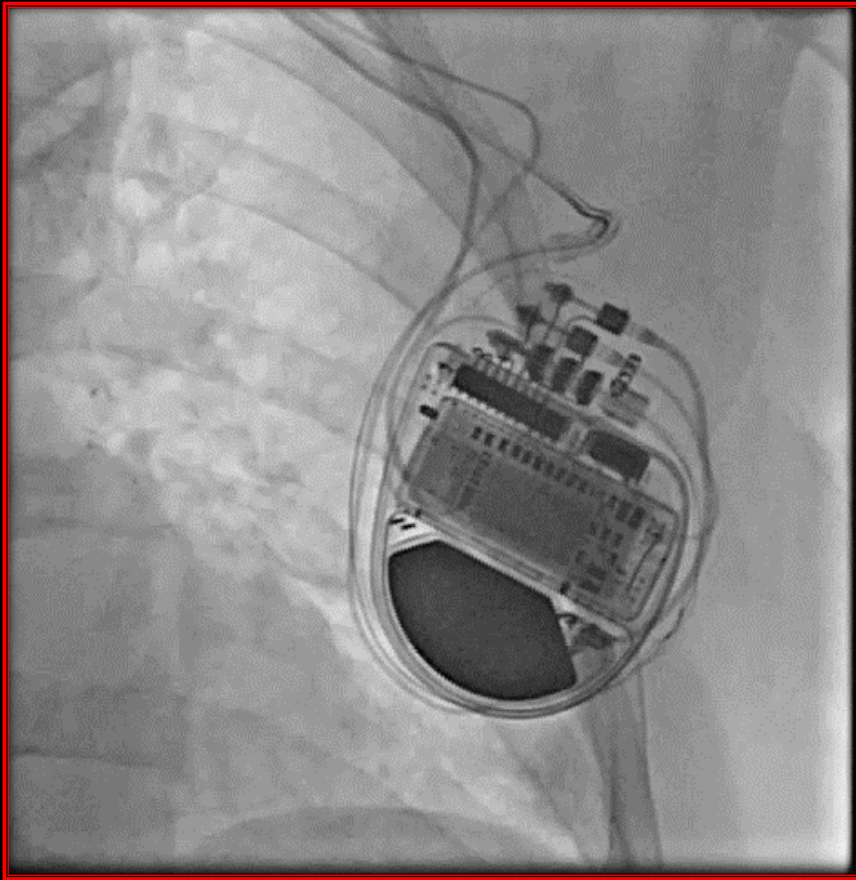


# Proximal HIS



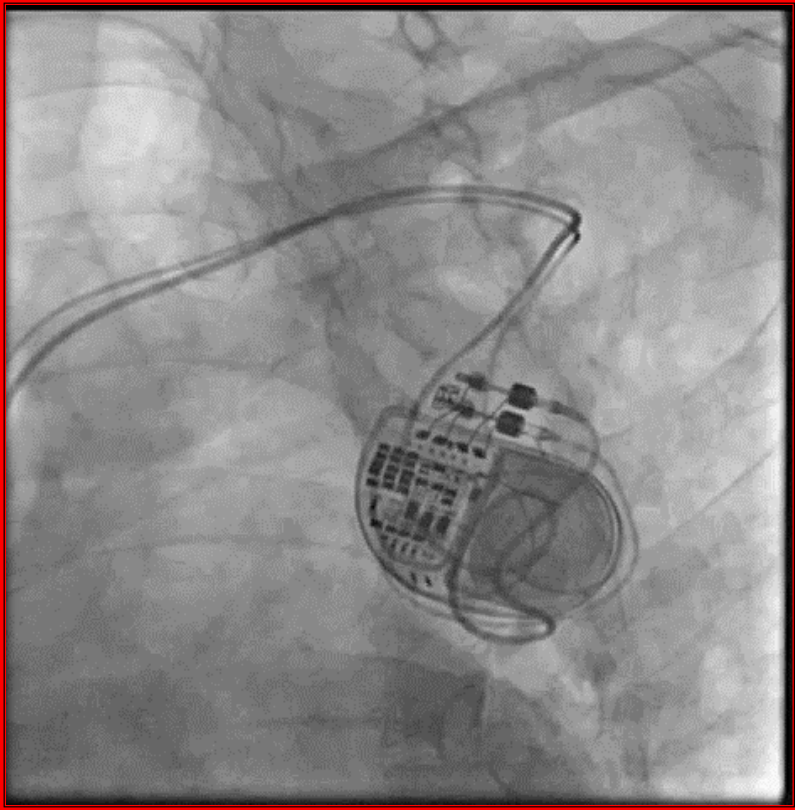
# Distal HIS





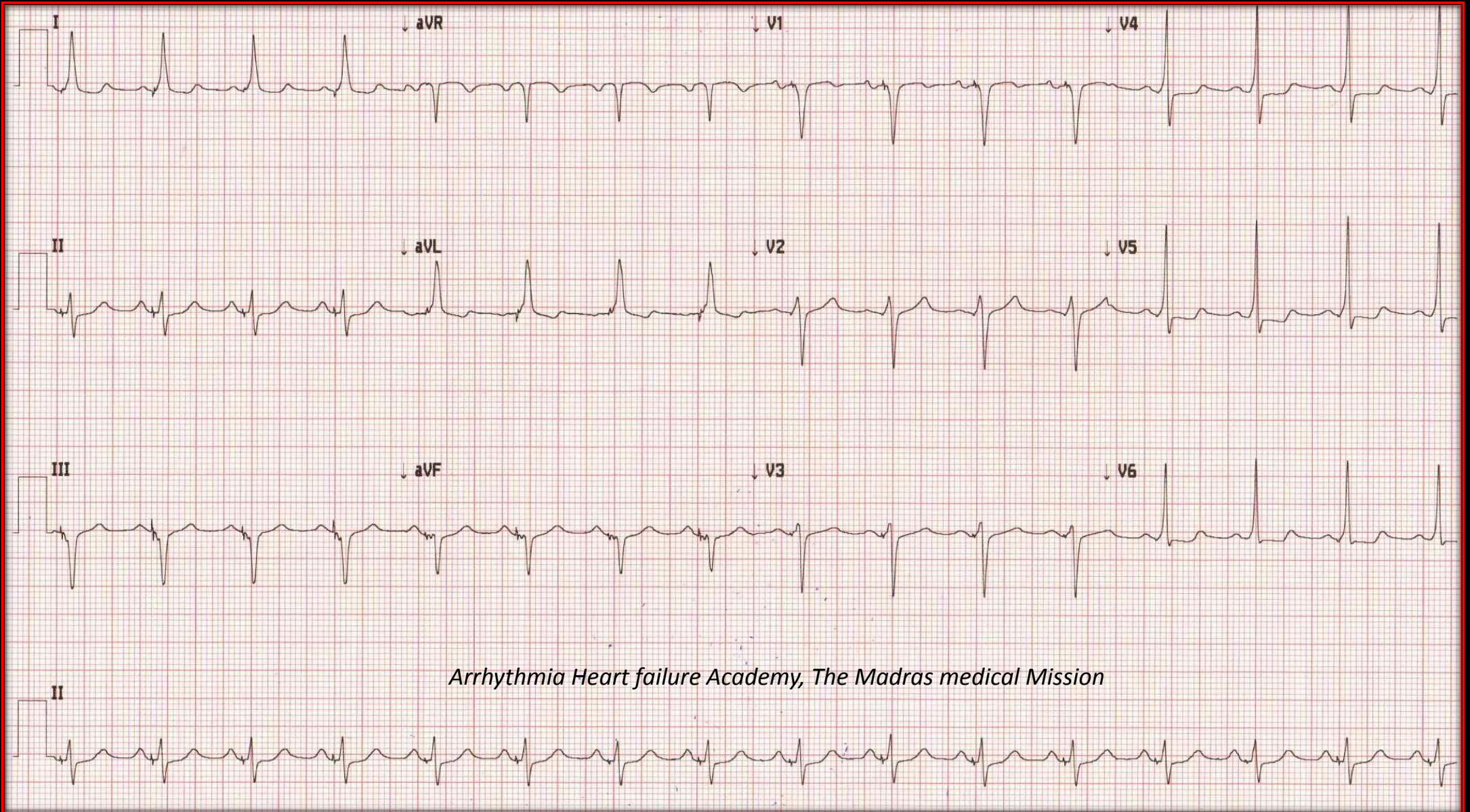
PA

Lateral



LAO

# Post ECG



**62y,M - S/P CABG (01/05/2014)**

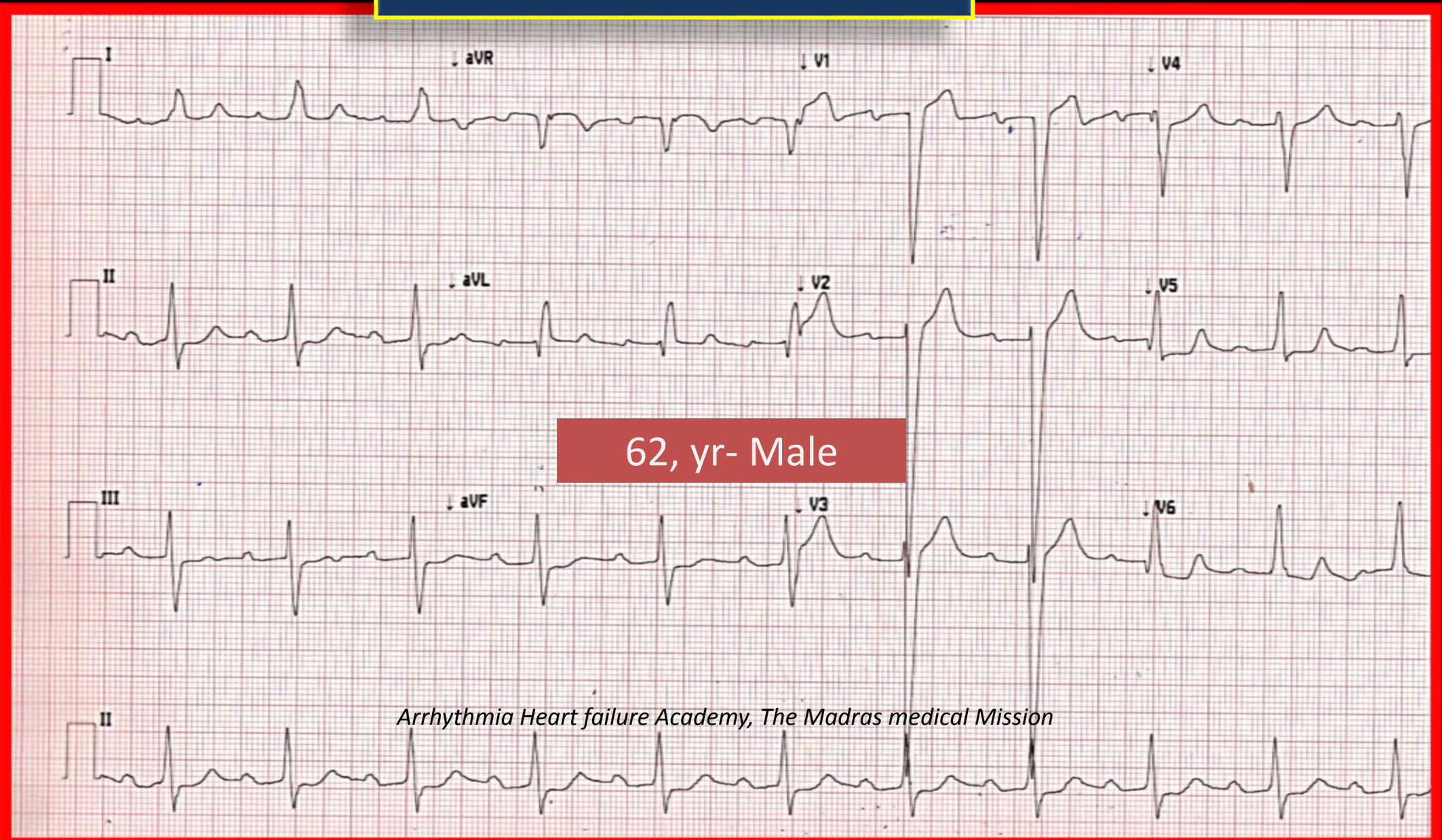
**Ischemic cardiomyopathy, Severe LV systolic dysfunction(LVEF 26%),  
NYHA class III, LBBB (160ms)**

**Two episodes of syncope**

**24hr Holter- No significant pauses, one episode of NSVT**

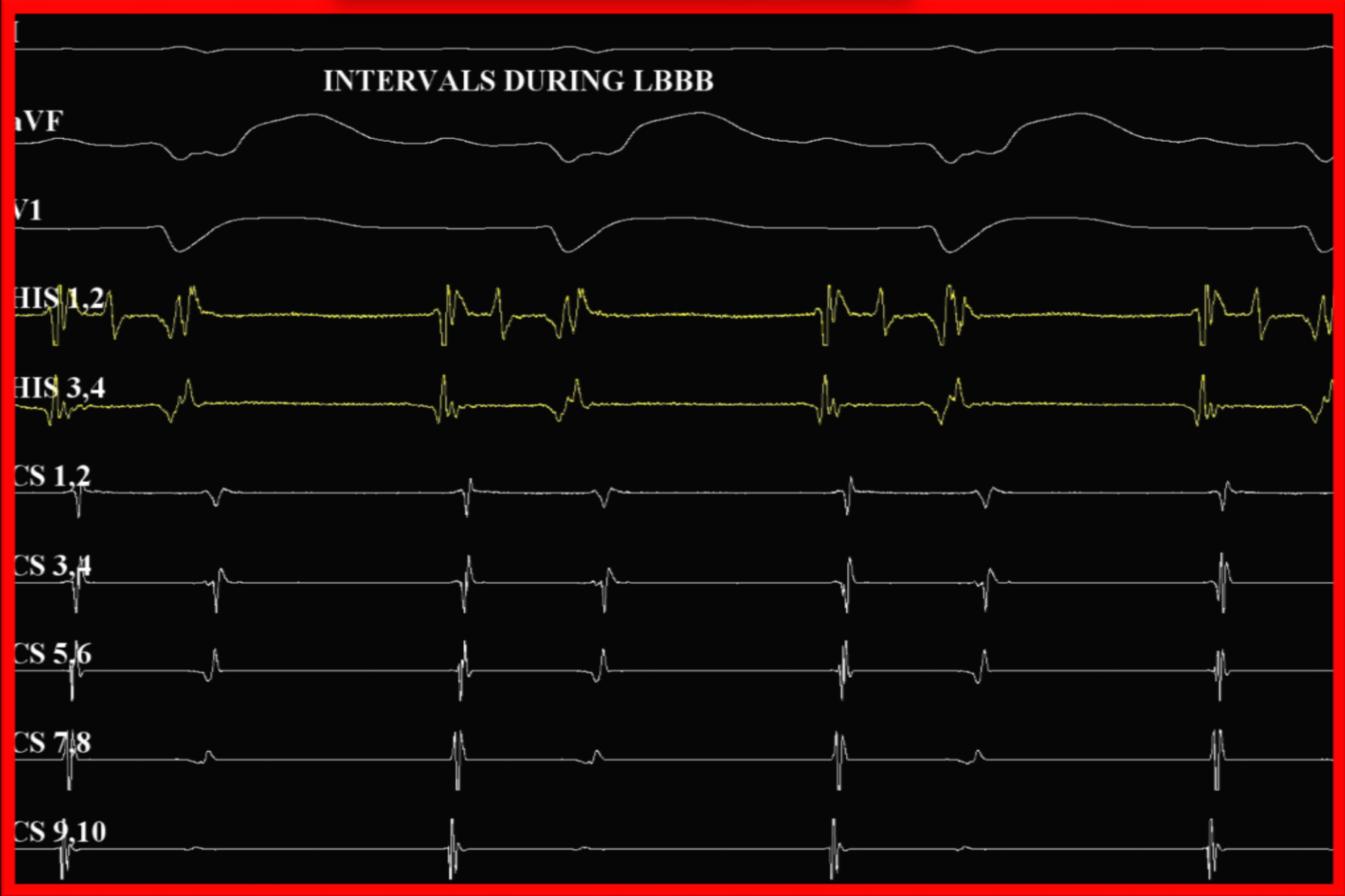
**EP study (03/05/2018; MMM) - Significant Infra-Hisian conduction system disease -  
Intermittent CHB, No inducible VT**

# BASELINE ECG

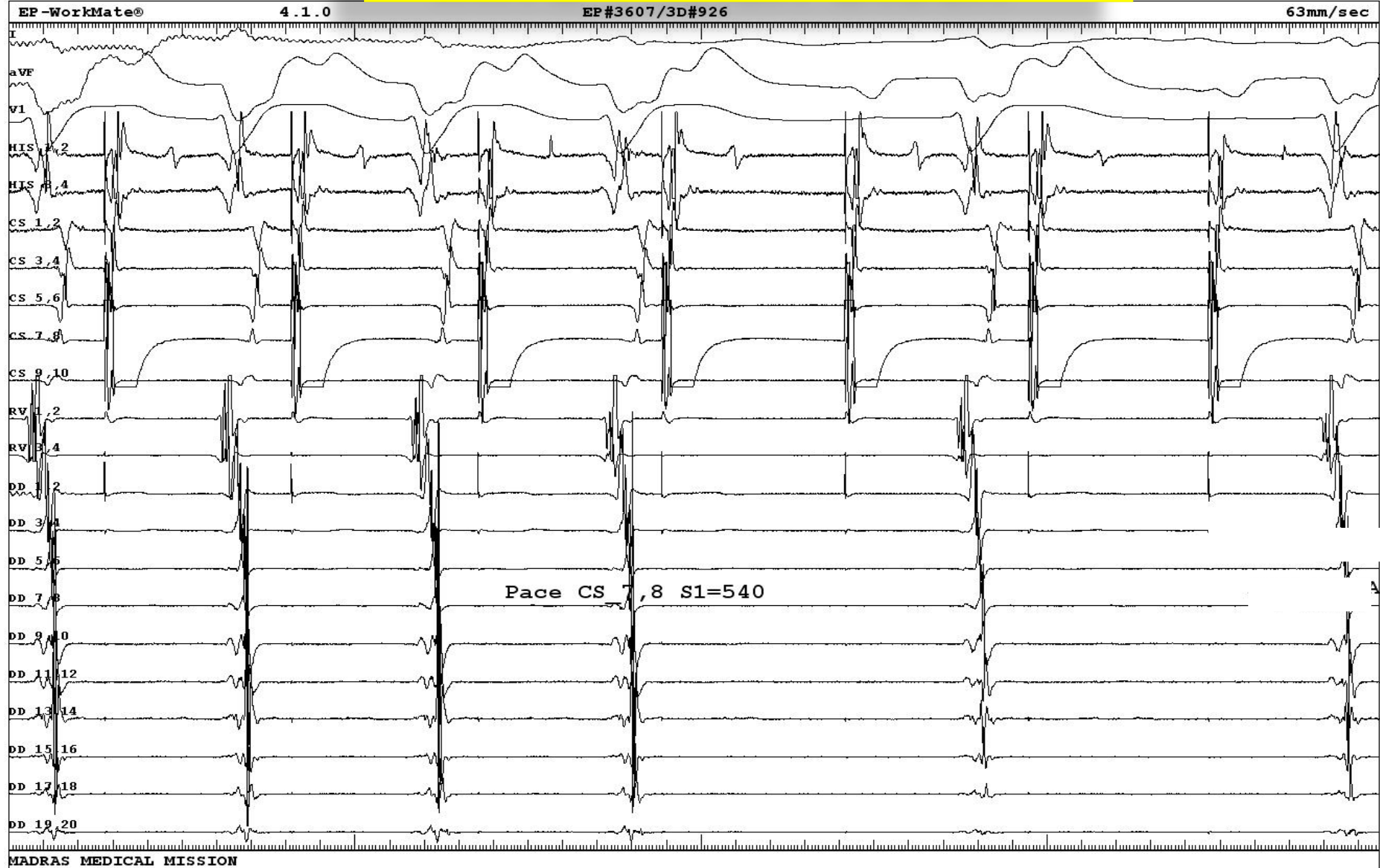


62, yr- Male

# EP study



# Infra-Hisian block



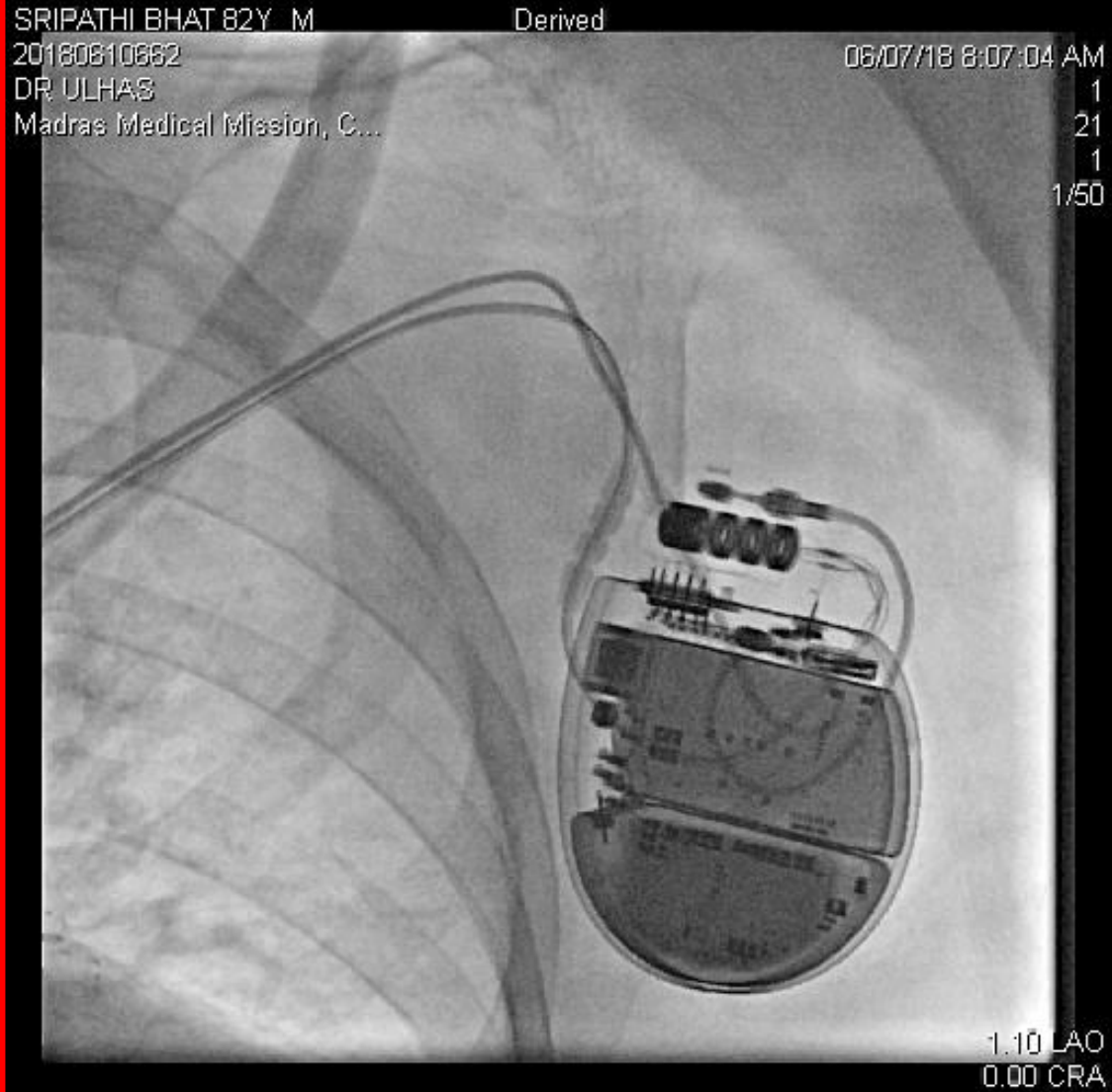
EF:26%, Ischemic cardiomyopathy, Severe LV dysfunction:  
CRT

Syncope, NSVT: AICD

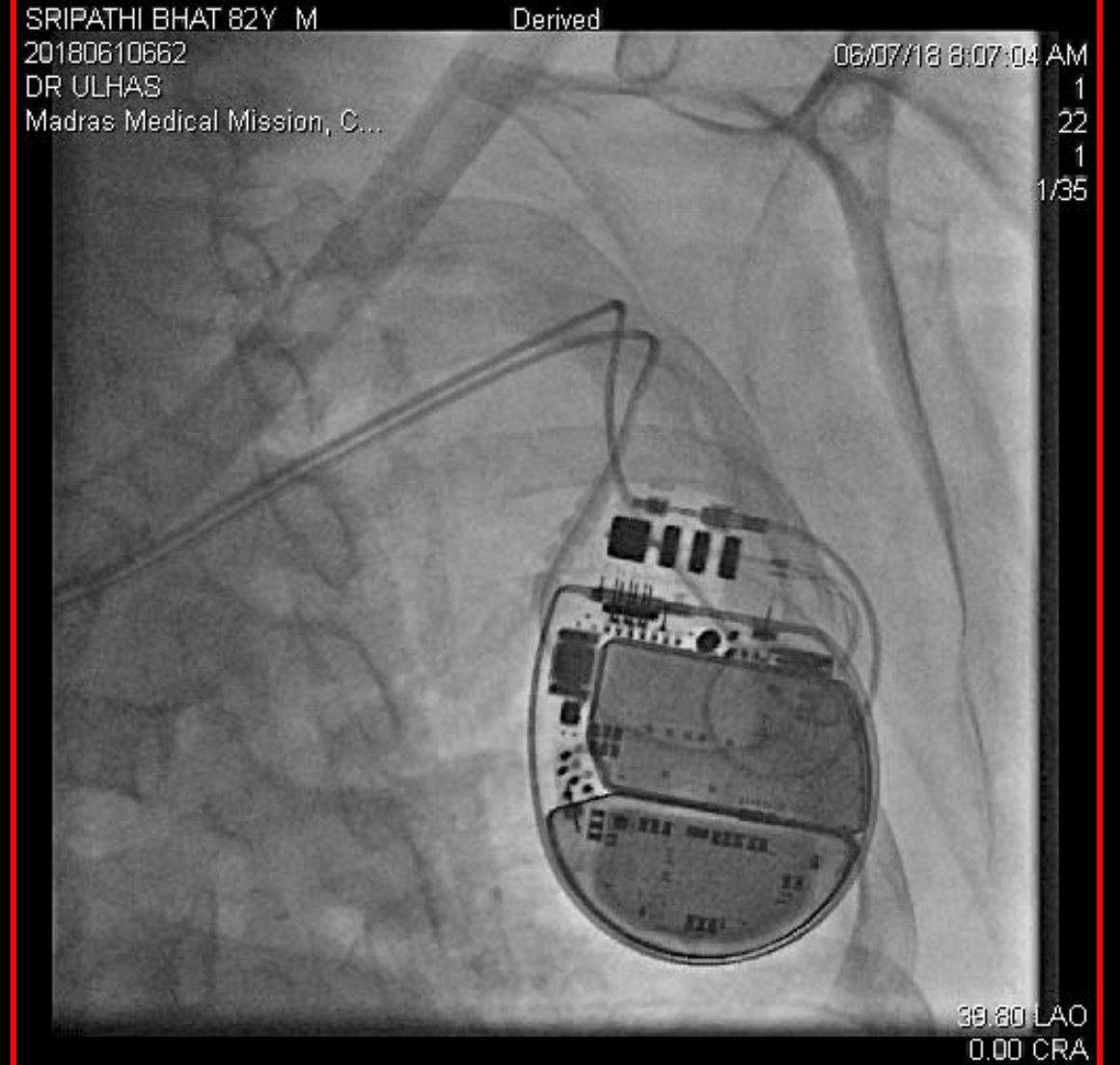
Hence CRT-D indicated.

However HIS bundle pacing by AICD lead without LV lead  
was planned.

# AP view



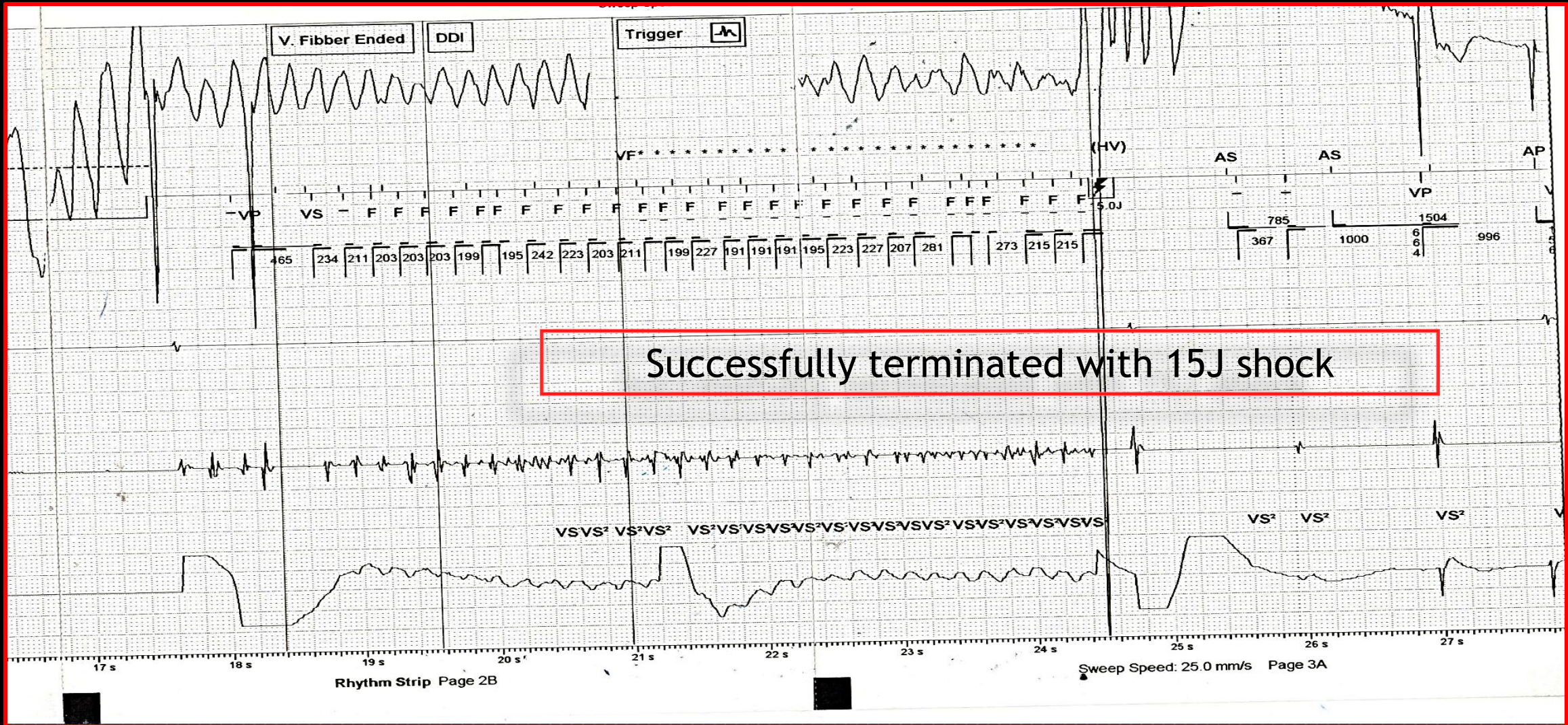
# LAO view



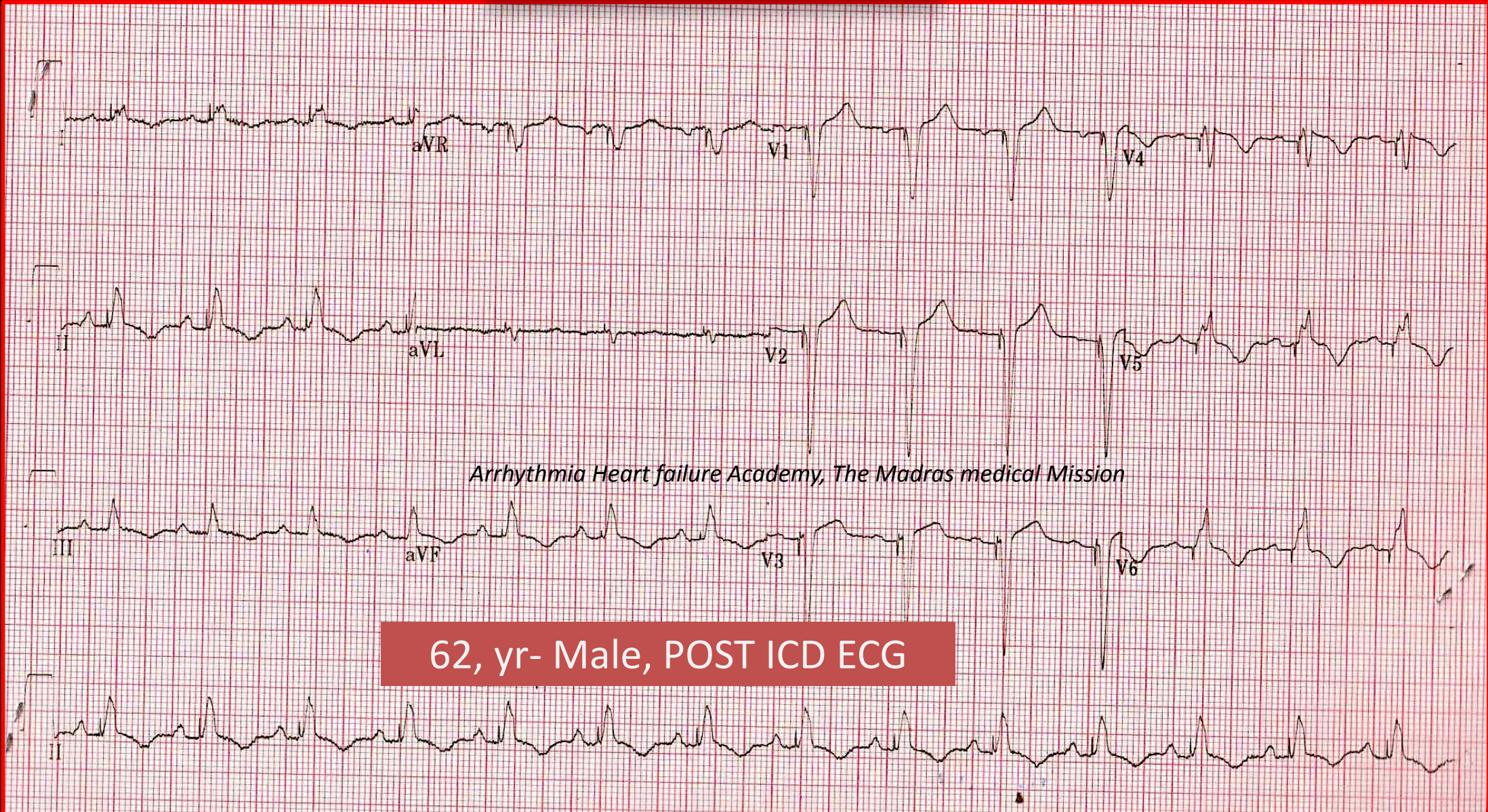
# R wave - >10mV



# DFT



# Post ECG



# 6 Months follow-up

DATE OF IMPLANTATION: 06/05/2018

DATE OF INTERROGATION: 08/11/2018

MODEL: ELLIPSE DR ICD

MODE: DDD

BATTERY VOLTAGE: 3.12V

BATTERY STATUS: 6.7 YRS

LAST FULL ENERGY CHARGE: 7.3 SEC ON 06/05/2018

PACING IMPEDANCE: RA: 590 Ohms RV: 460 Ohms

RV COIL IMPEDANCE: RV: 50 Ohms

PACING / SENSING HISTORY:

AS-VP: 100%

INTRINSIC RHYTHM: SINUS RHYTHM RATE @ 90BPM, PR INTERVAL: 220ms. QRS-130 ms.

DETECTION:

	IMPLANT SETTINGS: (06/05/2018)	CURRENT SETTINGS: (08/11/2018)
VF	>214 BPM (<280MS)	>214 BPM (<280MS)
VT	171-214BPM ( 400-280MS)	171-214BPM ( 400-280MS)

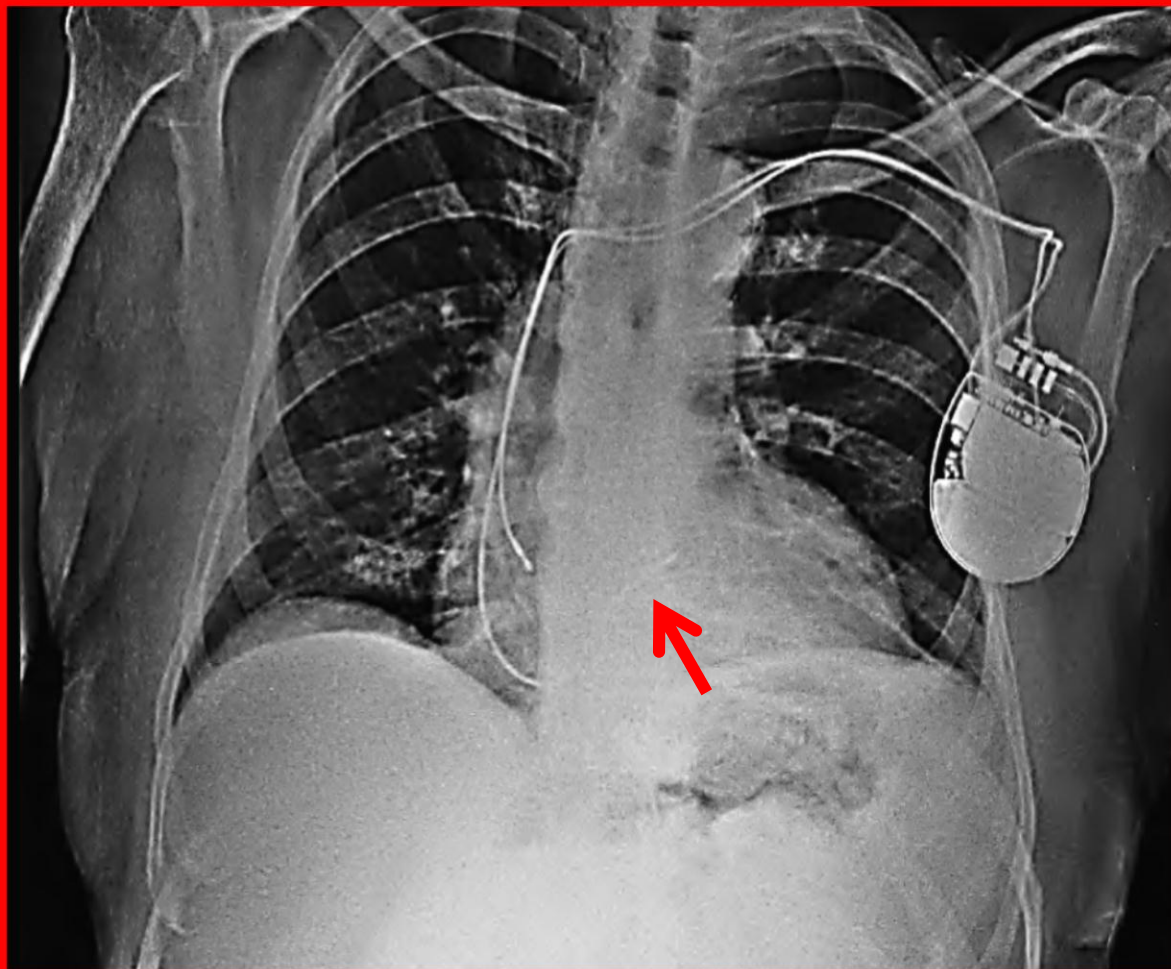
NO: OF INTERVALS TO DETECT:

	IMPLANT SETTINGS: (06/05/2018)		CURRENT SETTINGS: (08/11/2018)	
	NID	RNID	NID	RNID
VF	12	10	12	10
VT	18	10	18	10

PARAMETERS	IMPLANT SETTINGS (06/05/2018)	CURRENT SETTINGS: (08/11/2018)
MODE	DDD	DDD
MODE SWITCH RATE	160 / min	160 / min
LOWER RATE	60 / min	60 / min
UPPER RATE	120/ min	120/ min
<b>ATRIAL LEAD</b>		
THRESHOLD	1.5V	0.75 V
IMPEDENCE	690 Ohms	590 ohms
AMPLITUDE	3.0 V	3.0 V
R- WAVE	2 mV	2 mV
PULSE WIDTH	0.4 ms	0.4 ms
SENSITIVITY	AUTO	AUTO
POLARITY	BIPOLAR	BIPOLAR
PACED AV DELAY	160 ms	250 ms
SENSED AV DELAY	160 ms	250 ms
<b>VENTRICULAR LEAD</b>		
THRESHOLD	0.5V	< 0.25
IMPEDENCE	540 Ohms	460 ohms
AMPLITUDE	2.5 V	2.5 V
R- WAVE	12.0 mV	12.0 mV
PULSE WIDTH	0.4 ms	0.4 ms
SENSITIVITY	AUTO	0.3 mV
POLARITY	BIPOLAR	BIPOLAR

## No therapies

# X-Ray



# ECHO

## M MODE & 2-D PARAMETERS:

	VALUES	NORMAL-RANGE
AO	27	25-37mm
LA	40	19-40mm
LVID (d)	69	33-55mm
LVID (s)	58	24-42mm
IVS	9	6-11mm
LVPW	9	6-11mm
EF	32%	50-70%

DILATED LA AND LV .

LA MEASURES:44X54mm IN APICAL 4c VIEW

OTHER CHAMBERS NORMAL SIZED.

REGIONAL WALL MOTION ABNORMALITY PRESENT - BASAL AND MID ANTERO SEPTUM CONTRACTING REST OF THE SEGMENTS HYPOKINETIC .MID AND APICAL SEPTUM ,APEX THINNED

MODERATELY SEVERE LV SYSTOLIC DYSFUNCTION.

MILD RV SYSTOLIC DYSFUNCTION.

PML BASE CALCIUM PRESENT .

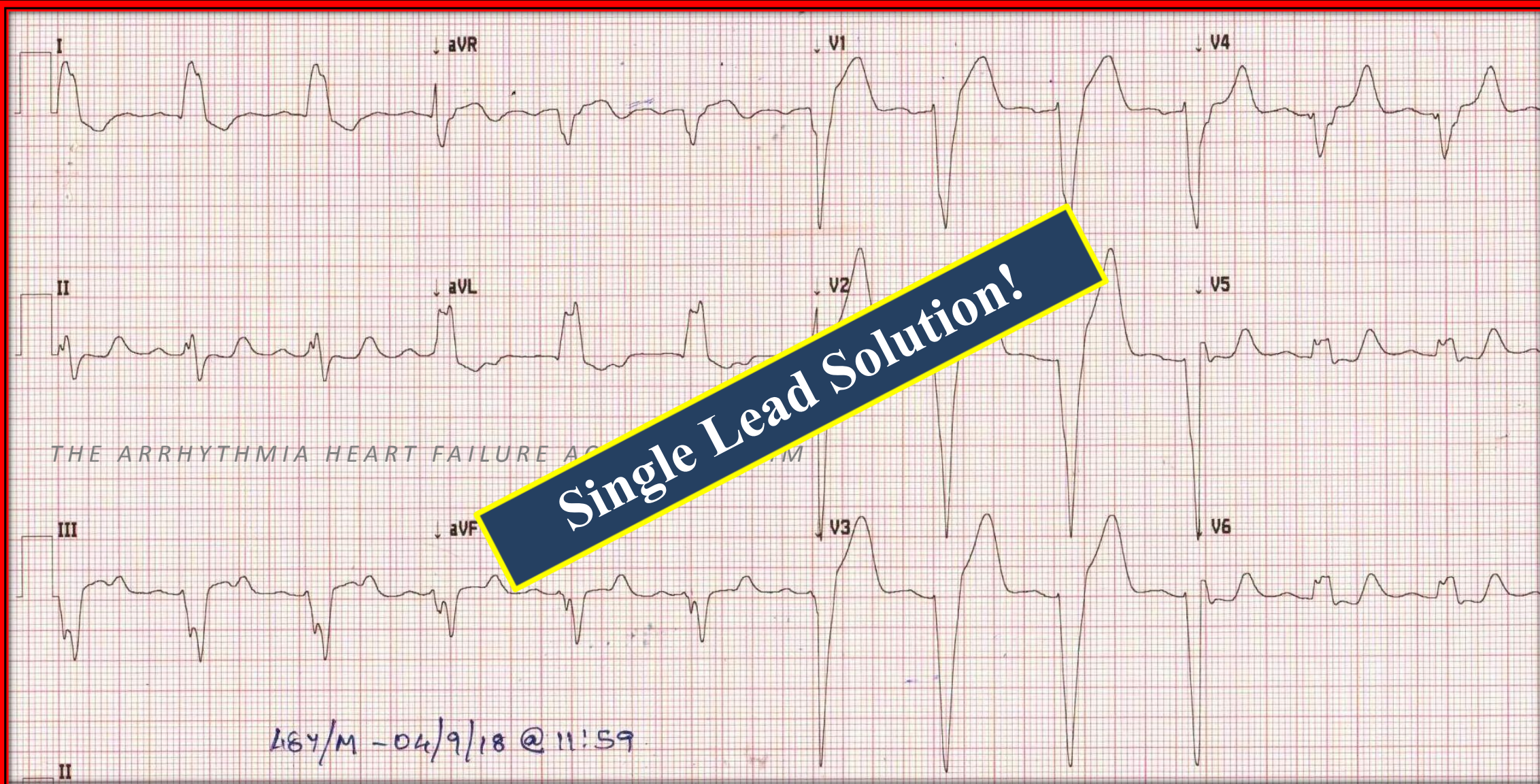
SCLEROSED AORTIC VALVE.

OTHER VALVES STRUCTURALLY NORMAL.

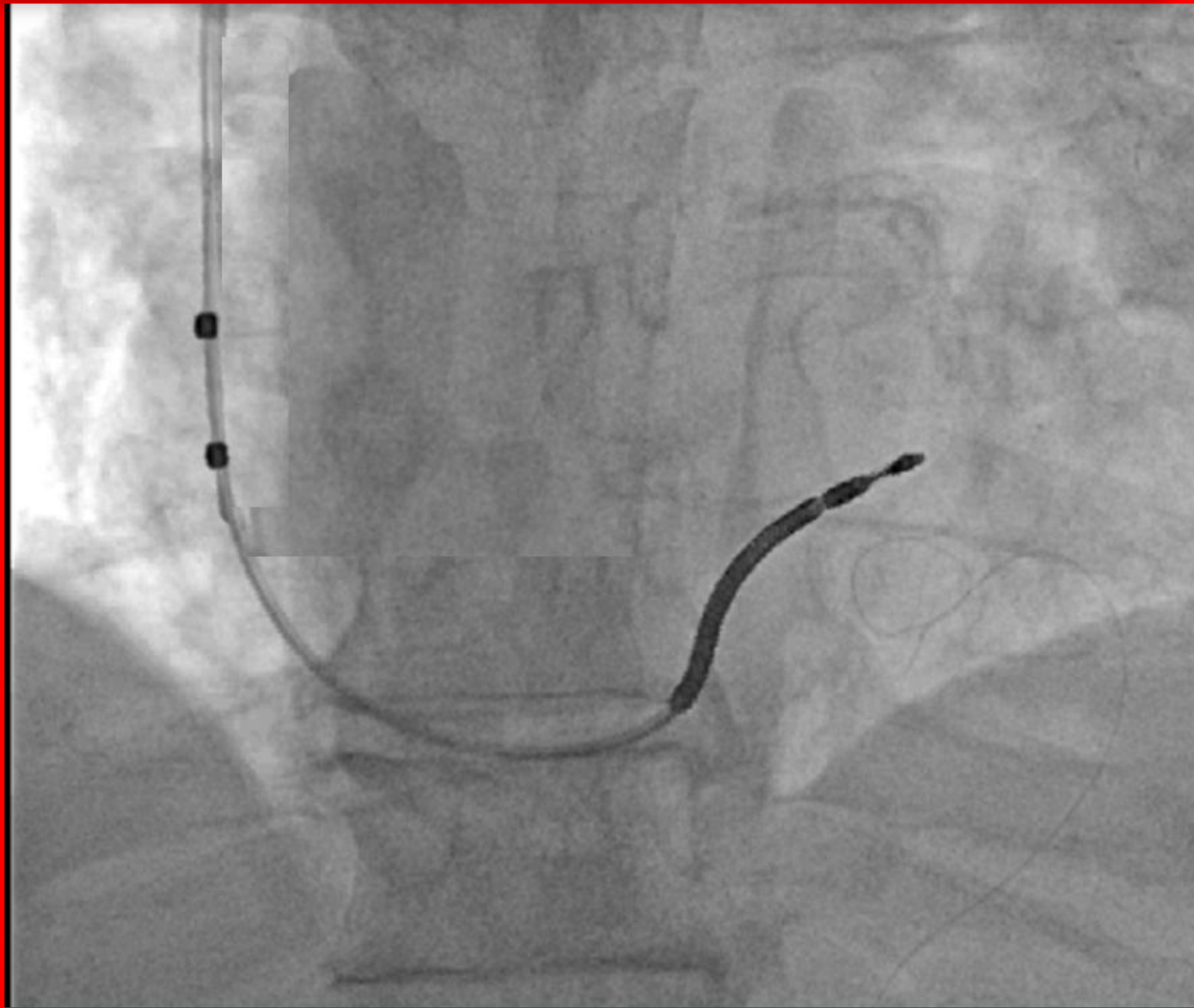
IAS/IVS INTACT.

NO CLOT/VEGETATION/EFFUSION

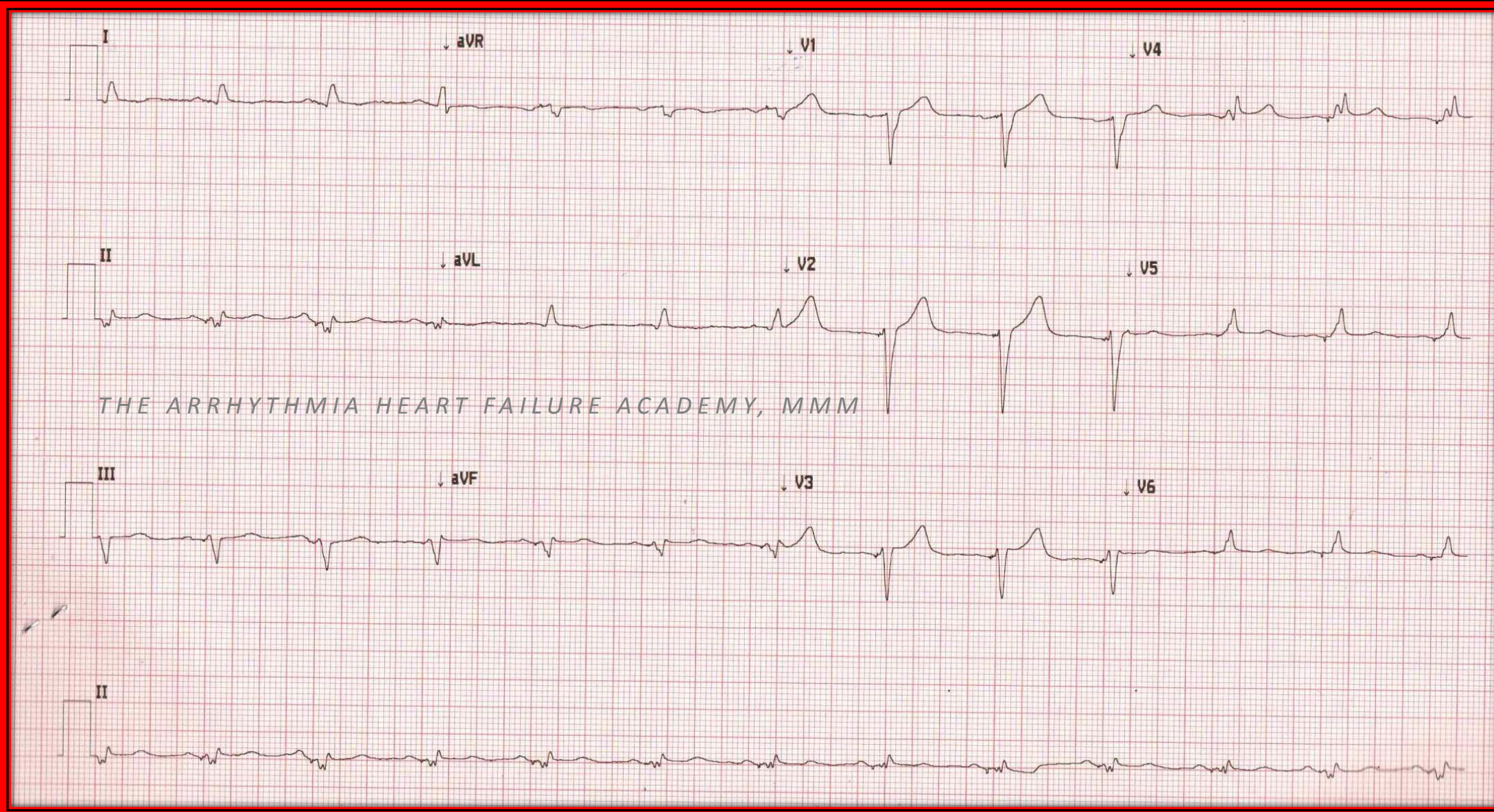
48 Y, M, ICM, LVEF=30%, NYHA III, LBBB, SCA



Single Lead DX ICD  
“IN LIEU OF 3 Leads CRT-D”



# POST ECG





THANK YOU

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