

Difficult VT Cases in the EP Lab

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Conflict of Interest to Declare

- None

Objectives

- ❖ Discuss an overview of 2 difficult ventricular tachycardia cases performed in SDH EP lab
- ❖ Discuss pre-operative, intra-operative and post-operative care of patients s/p VT ablation
- ❖ Discuss complications that may be associated with VT ablations
- ❖ Discuss discharge planning after VT ablation

Case Study #1

- ❖ 45 year old male
- ❖ Pre-procedure diagnosis: PVC's
- ❖ History
 - ❖ Frequent PVC's
 - ❖ Monomorphic ventricular tachycardia during stress test
 - ❖ Structurally normal heart
 - ❖ Unable to tolerate beta-blocker therapy due to increased fatigue

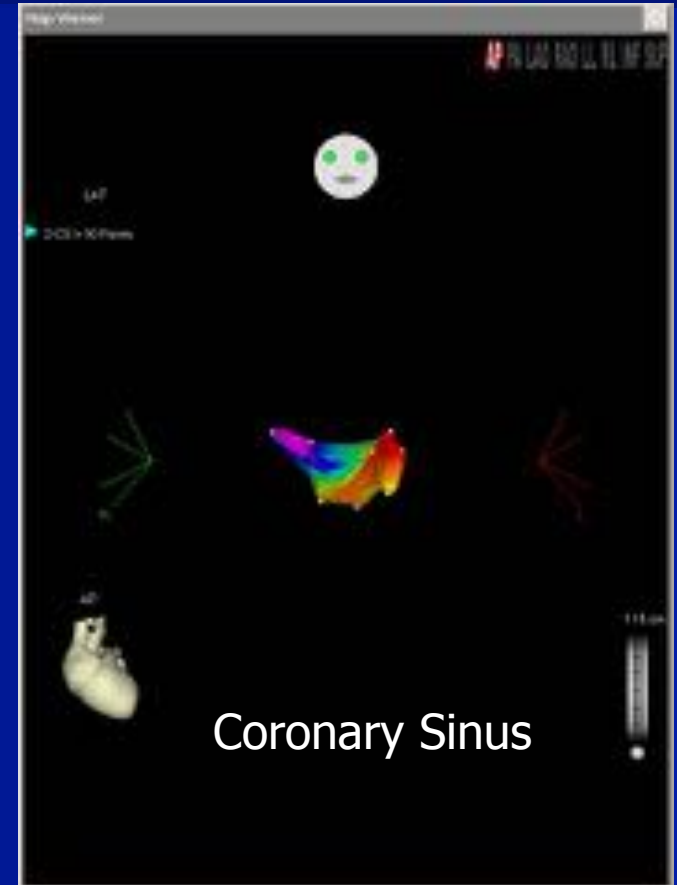
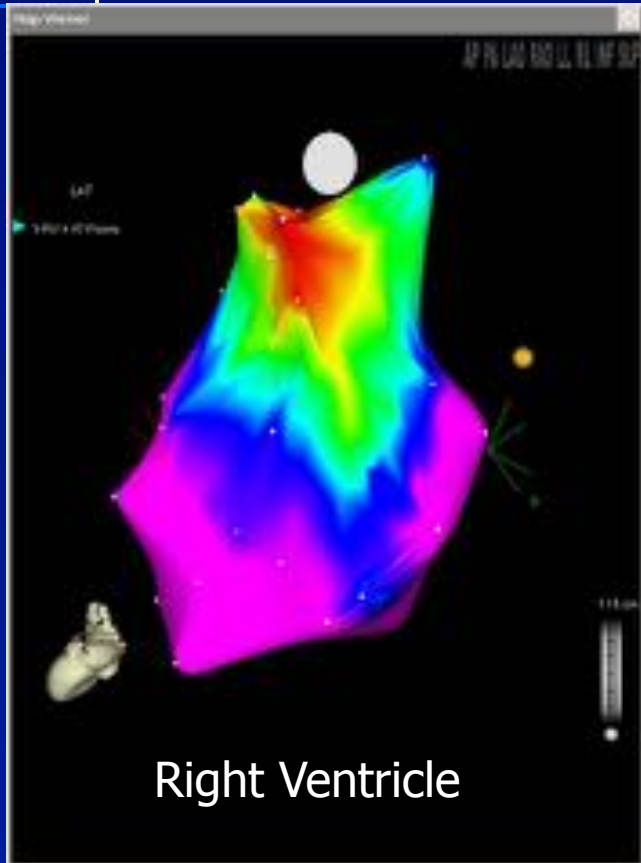
Intra-operative

- ❖ Access obtained:
 - ❖ 8F and 11F right femoral vein
 - ❖ 8F right femoral artery
 - ❖ 8F subxyphoid (epicardial)
- ❖ Medications administered:
 - ❖ Isuprel
 - ❖ Phenylephrine
 - ❖ Epinephrine

EKG

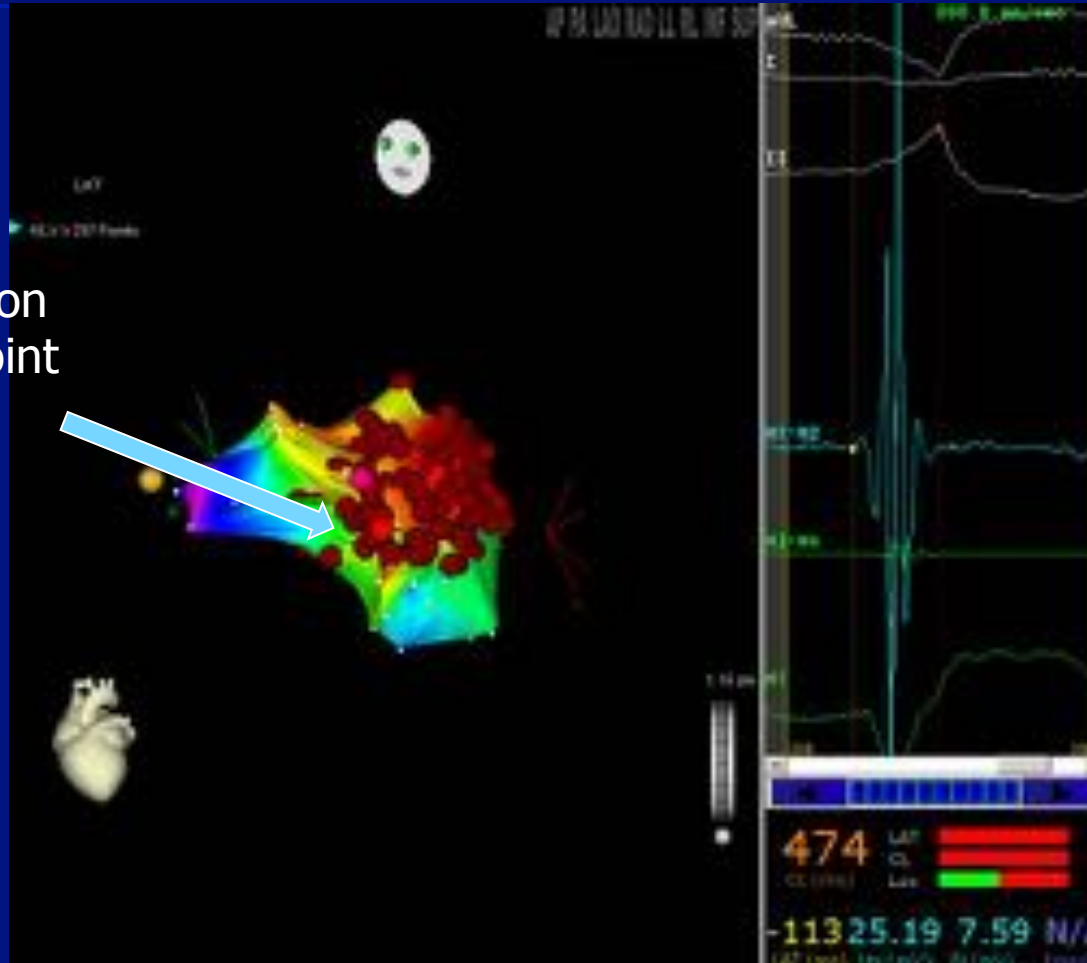


Intra-cardiac 3D Mapping



3D Mapping and Ablation of Left Ventricle

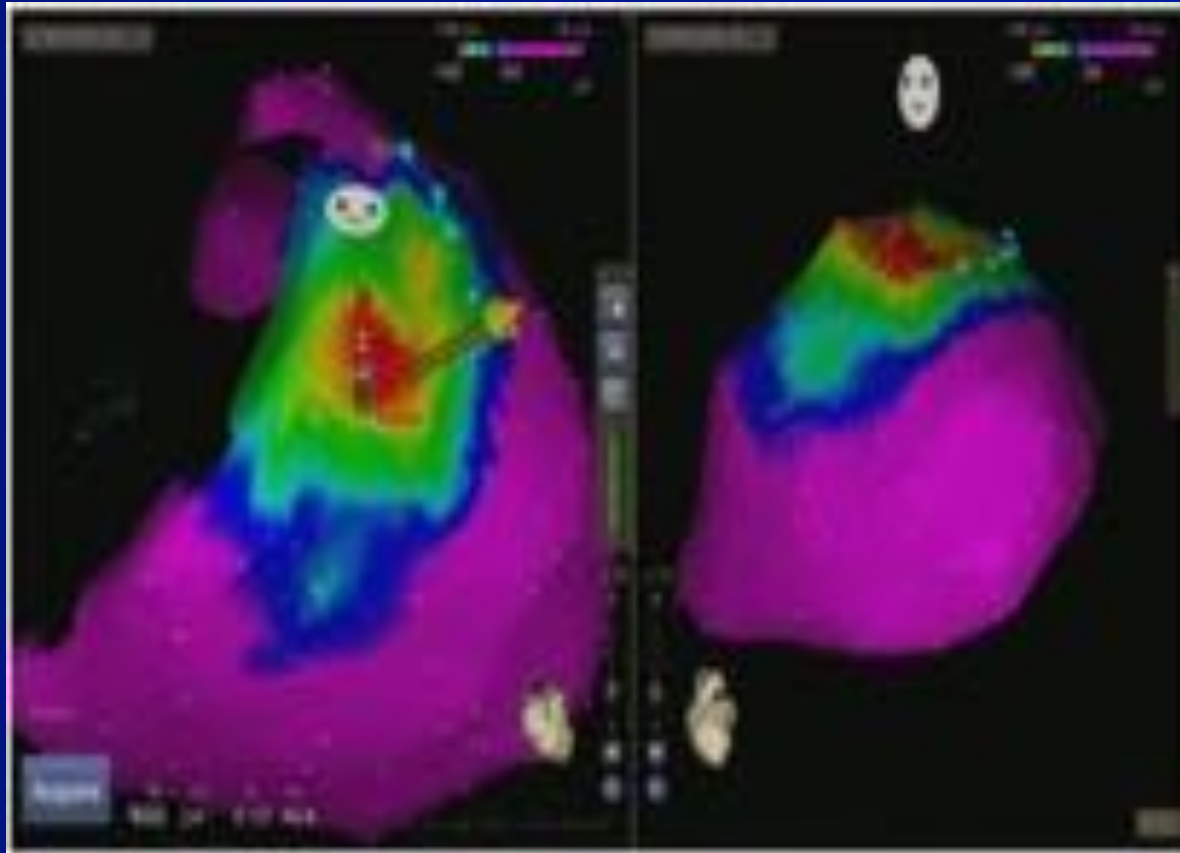
Earliest activation
and ablation point
of left ventricle



Fluoroscopic Imaging of Epicardial Access



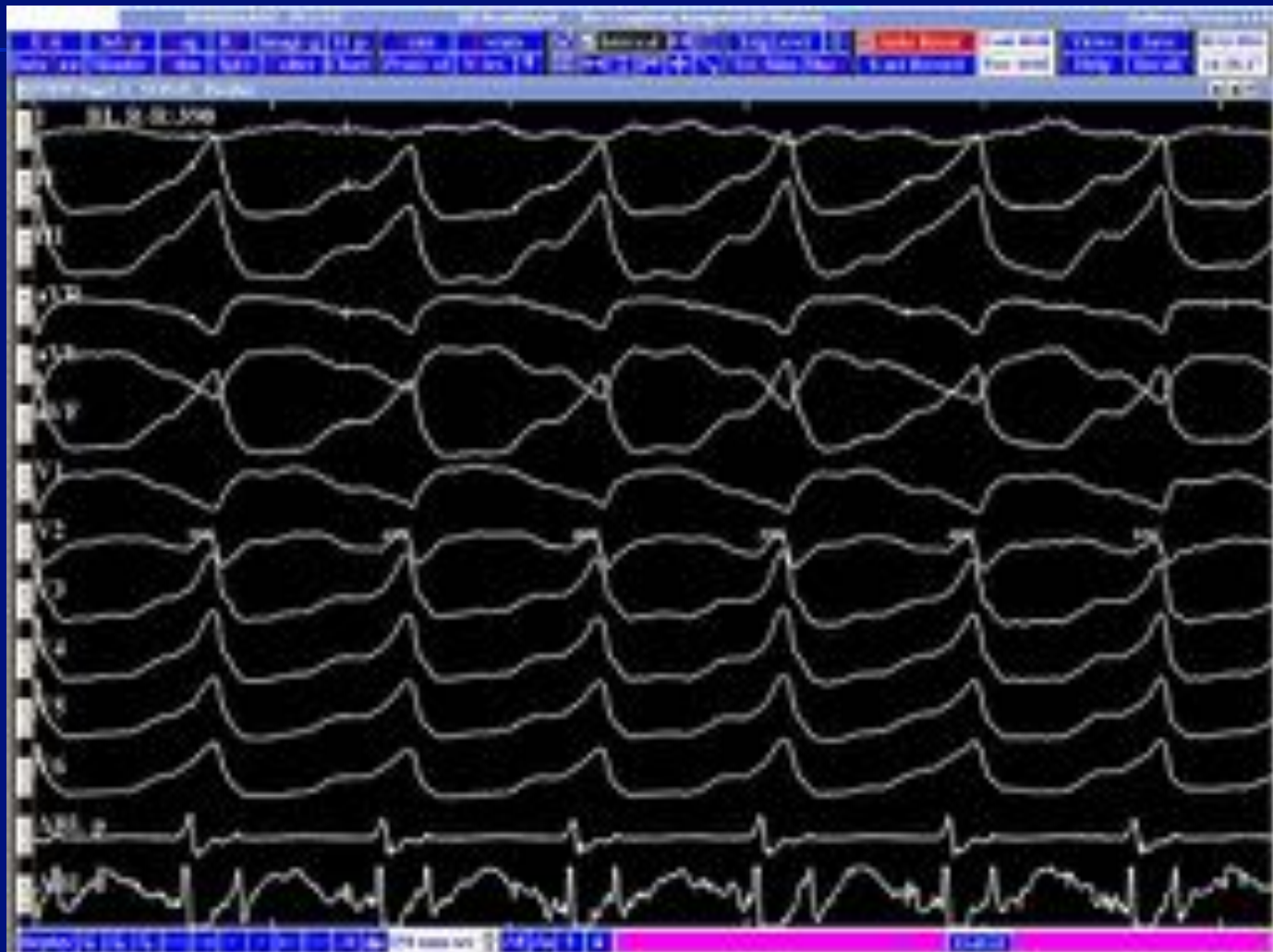
Epicardial 3D Mapping of Earliest Activation



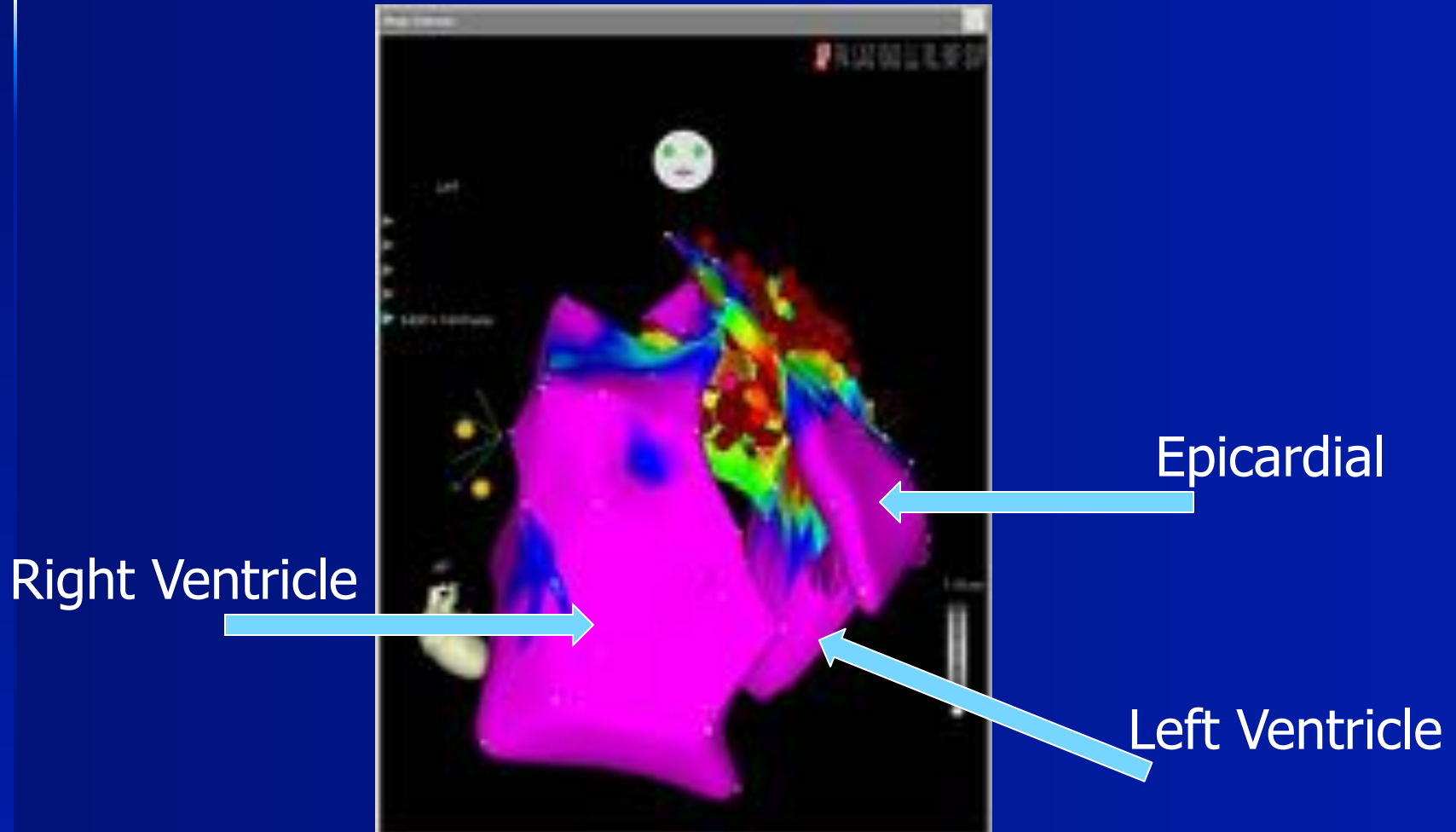
Epicardial Balloon Lifting Phrenic Nerve



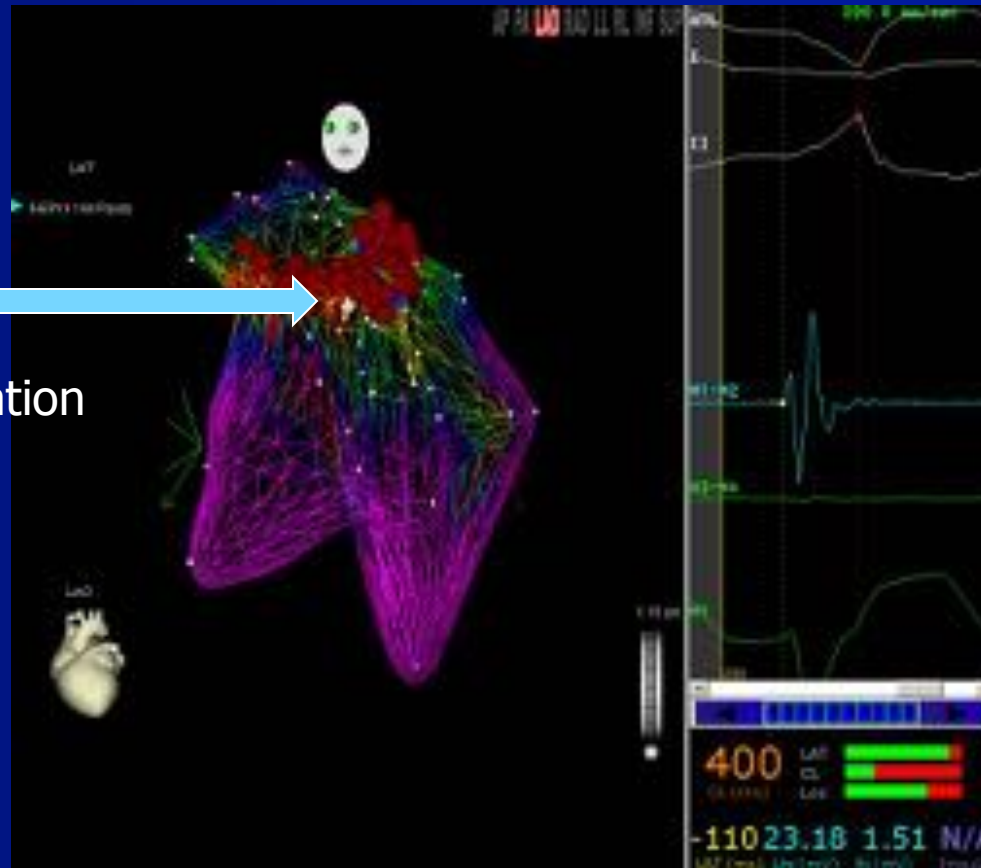
EKG During RF Ablation



3D Mapping Post Ablation



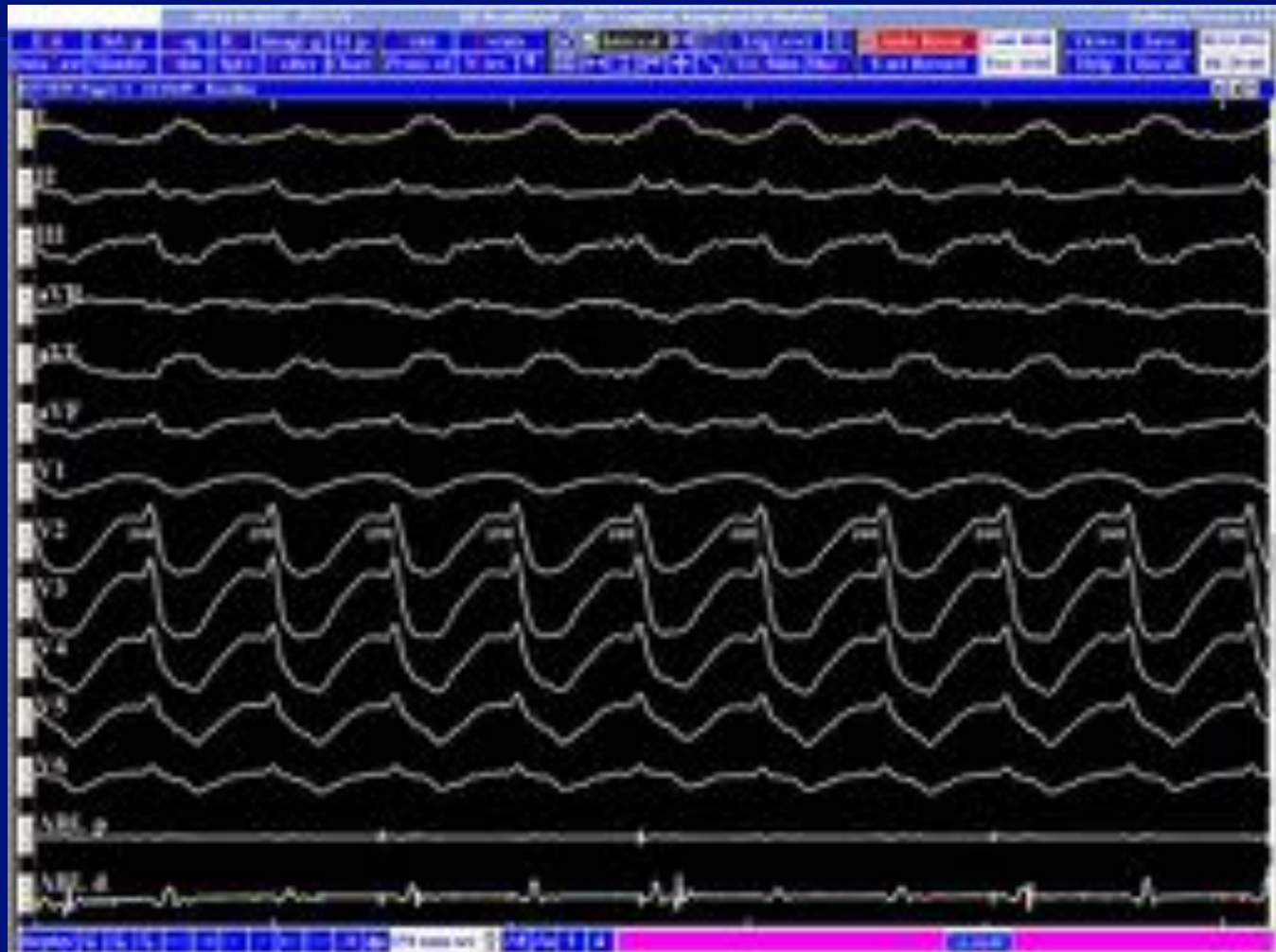
3D Mapping Post Ablation



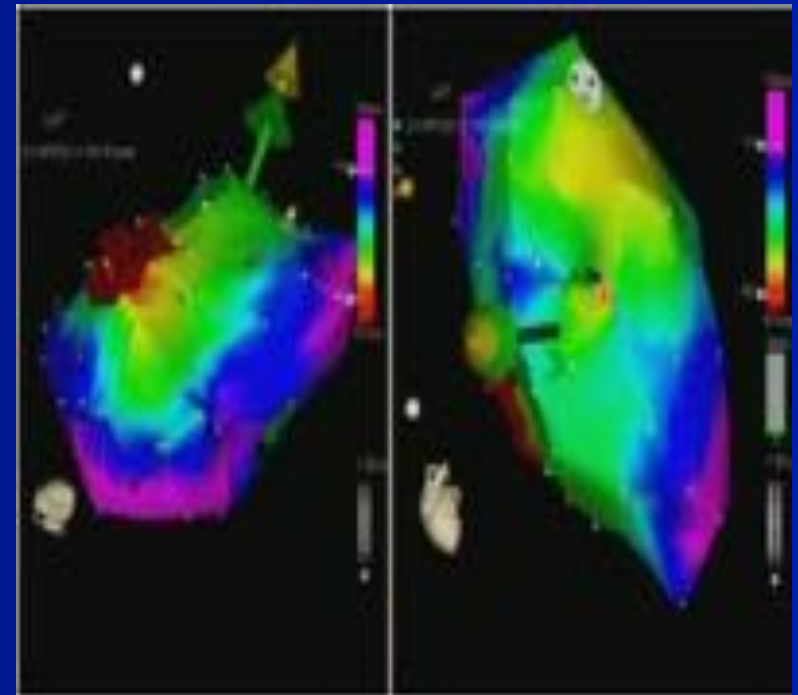
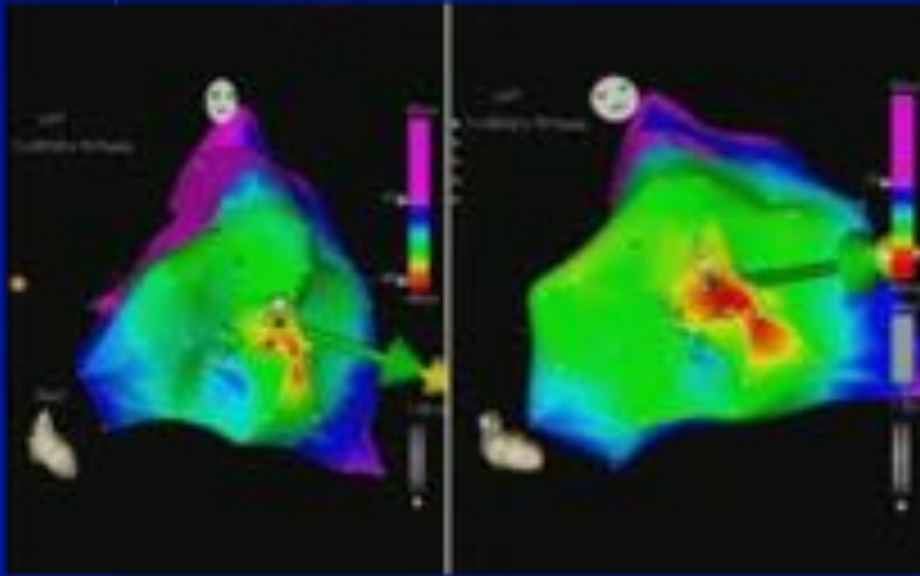
Case Study #2

- ❖ 51 year old female
- ❖ Pre-procedure diagnosis: ICD shocks, Ventricular fibrillation, Ventricular Tachycardia
- ❖ History
 - ❖ Ventricular tachycardia/fibrillation
 - ❖ Dual chamber ICD
 - ❖ Ischemic Cardiomyopathy EP 20-30%

EKG

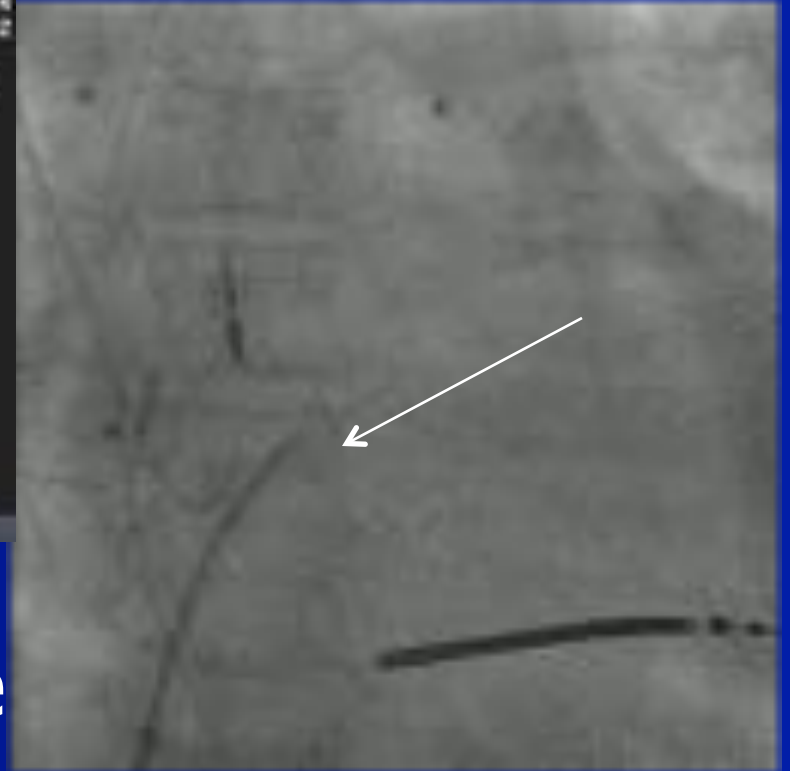


Intra-cardiac 3D Mapping and Ablation of Right Ventricle



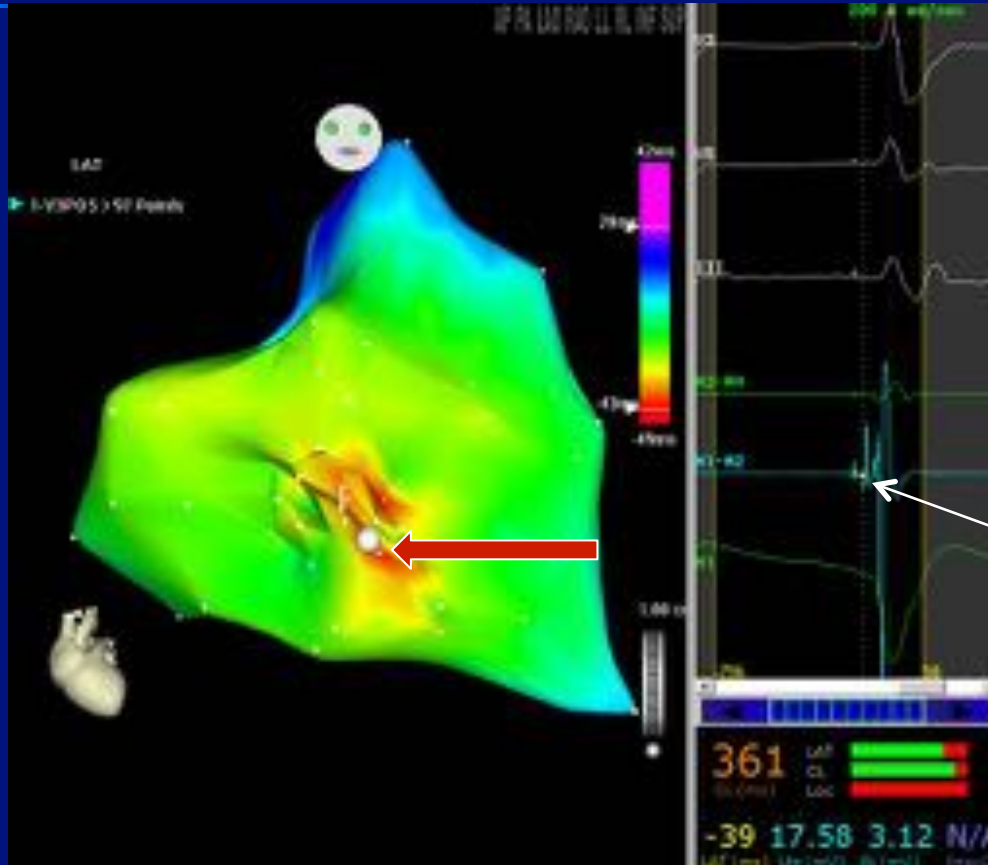
Ablation performed without
elimination of PVC's and VT

Intra-cardiac Echo and Fluoroscopic imaging



Single Trans-septal puncture

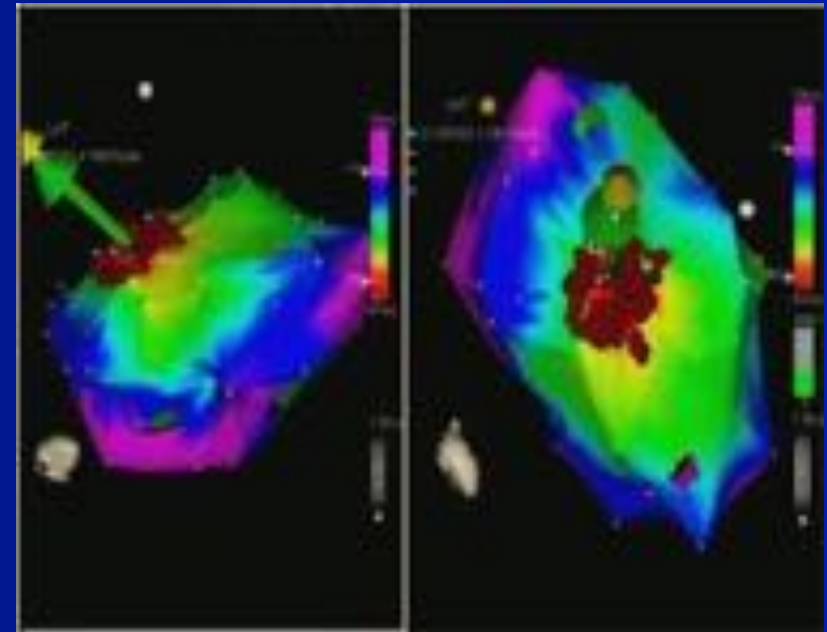
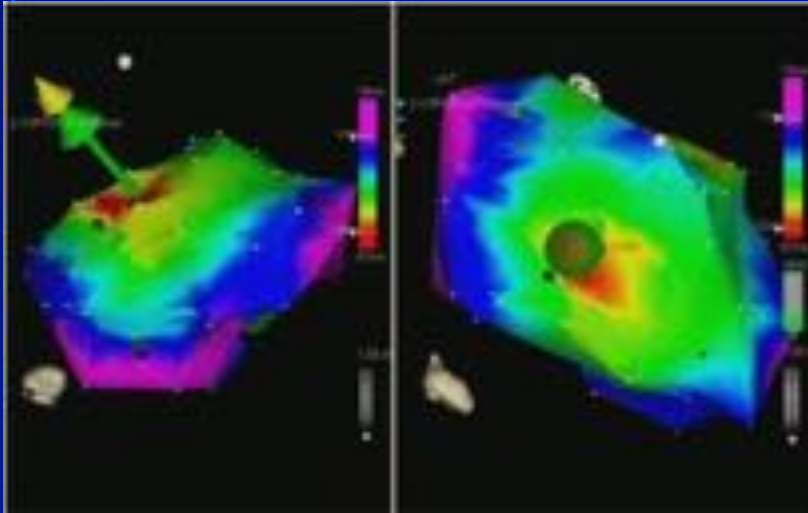
Earliest Activation Left Ventricle



Purkinje potential demonstrates earliest activation

Intra-cardiac 3D Mapping and Ablation of Left Ventricle

Ablation antero-septal near mitral
valve annulus and at Purkinje fibers



Earliest activation in left ventricle

Pre-operative care

- ❖ Paperwork completed: history and physical, consents, etc.
- ❖ Anesthesia pre-op
- ❖ IV access obtained
- ❖ Labs drawn: Chemistry, Coagulation, Hematology, Urinalysis, TEG, Type and Screen
- ❖ EKG performed

Intra-operative Care

- ❖ Patches placed: monitor, mapping, ablation
- ❖ Bilateral groins and subxyphoid prepped: hair clipped, chloraprep applied
- ❖ Anesthesia personnel monitors hemodynamics and sedation level (level of sedation determined per ectopy and patient comfort)
- ❖ Foley placed (dependent upon procedure)
- ❖ Lines placed per physician (venous, arterial, epicardial)
- ❖ Interrogation of device (ICD or PPM) if applicable

Intra-operative Care

- ❖ Heparinization and monitoring of anticoagulation
- ❖ Intravenous fluids required for ablation
- ❖ Medications used for drug stimulation (Isuprel, Phenylephrine, IV caffeine, calcium bolus and aminophylline)
- ❖ Monitoring of drainage from foley and epicardial space during procedure

Post-operative Care of Patient

- ❖ Post Anesthesia Care Unit (PACU)
- ❖ Pulling of sheaths
- ❖ Pain management
- ❖ Education
- ❖ Follow up care post discharge
- ❖ Re-interrogation of device (ICD or PPM) if applicable

Potential Complications

- ❖ Bleeding of access site (hematoma)
- ❖ Pericardial bleeding
- ❖ Epicardial coronary artery injury (angiography and ICE utilized)
- ❖ Left phrenic nerve damage-epicardial
- ❖ Pericarditis
- ❖ AV fistula-access
- ❖ Complete heart block-ablation
- ❖ Stroke
- ❖ Valvular and papillary muscle damage-ablation, catheter manipulation

Discharge Planning

- ❖ Ibuprofen for pleuritic discomfort related to epicardial access for the ablation
- ❖ Removal of epicardial drain if left in for excess bleeding
- ❖ Repeat ECHO next day to rule out effusion
- ❖ Pain medication

Discharge Planning

- ❖ Avoid strenuous activity and lift no more than 10 pounds for 5 days
- ❖ Twenty four hour Holter monitor and follow up with physician in 6 weeks
- ❖ Instruct patient to call if experiencing any: palpitations, light headedness, low blood pressure, shortness of breath

Successful Outcomes for Patients

Collaborative working relationships between all staff members involved with providing care for these patients!

Thank You!