

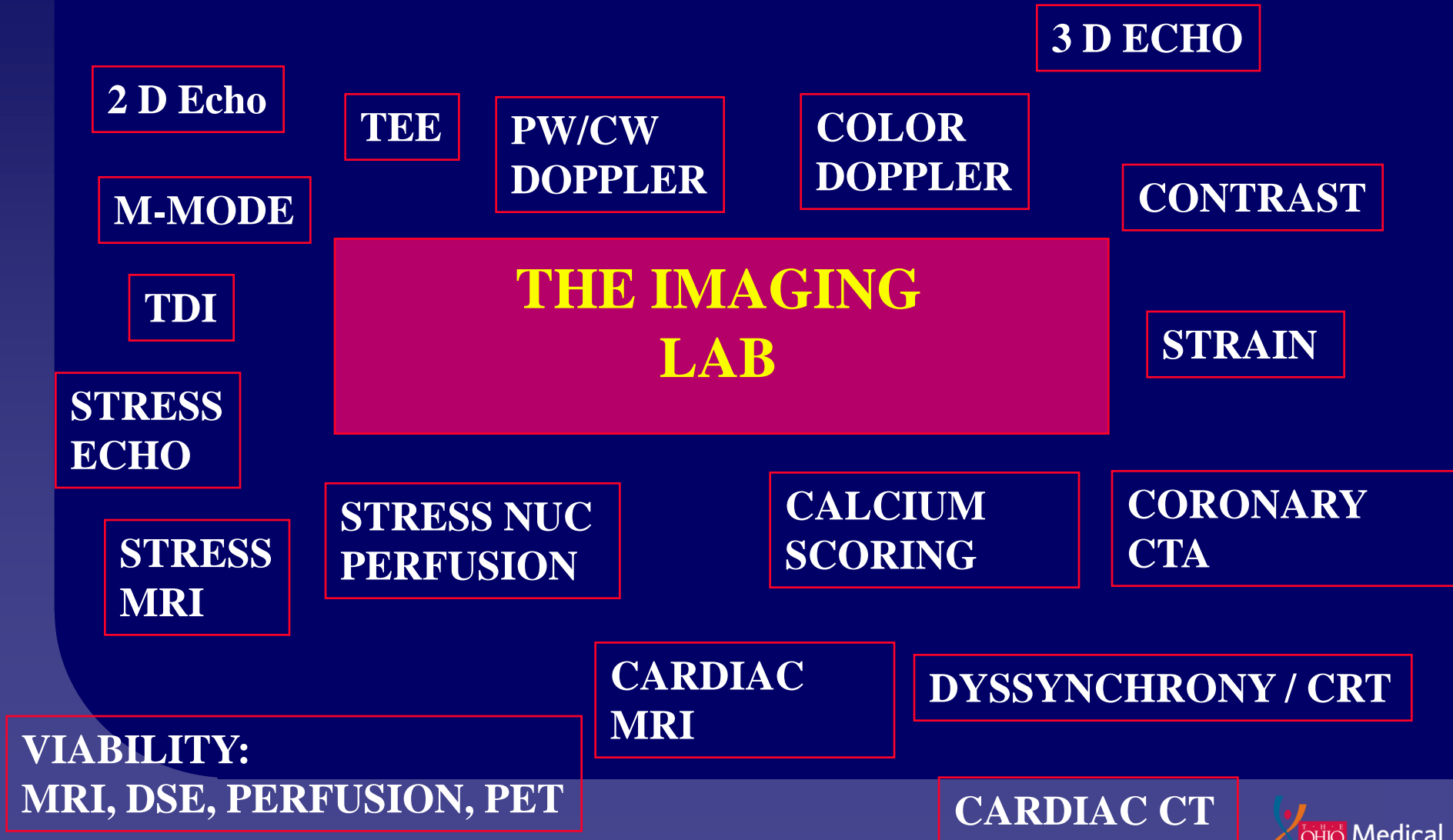


CASES IN ADVANCED IMAGING

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WHICH IMAGING TOOL AND WHEN ?



IMAGING CASES

- ♥ **BRIEF CLINICAL HISTORY**
- ♥ **INITIAL IMAGING DATA**
- ♥ **EXPERTS' OPINIONS**
- ♥ **FOLLOW-UP IMAGING DATA**
- ♥ **CLINICAL OUTCOME**

CASE 1

VIABLE or NOT?

- ♥ **62 year old man with severe CAD, PVD (prior BKA), DM1, HTN, HLD, ESRD (s/p kidney txp 5 yrs ago), presents with CHF**
- ♥ **INITIAL EVALUATION FOR RENAL TXP**
 - ♥ **DSE (no ischemia / inadequate HR) done prior to PV surgery**
 - ♥ **MODEST LV DYSFUNCTION, EF IMPROVED WITH BP TREATMENT**
 - ♥ **Cardiac Cath: diffuse 3 V CAD, preserved EF**
 - ♥ **TREATED MEDICALLY**
 - ♥ **RENAL TXP WITH NO SUBSEQUENT CARDIAC ISSUES FOR 4 yrs**
- ♥ **POST RENAL TXP**
 - ♥ **MULTIPLE VASCULAR ISSUES / INFECTIONS etc.**
 - ♥ **NSTEMI AFTER HIP SURGERY, TREATED MEDICALLY (4 yrs post TXP, one year prior to current presentation)**

CASE 1

VIABLE or NOT?

- ♥ **PRESENTS WITH WORSENING PVD / INFECTION**

- ♥ **PRE-OP EVALUATION**

- ♥ **ADENOSINE MIBI: “Impressive large, dense, and fixed defects noted throughout the septum, inferior, and apical walls.” No ischemia. Severe LV dysfunction, LVEF of 26%.**

- ♥ **ECHO: Large LAD territory WMA (new), est EF 30%**

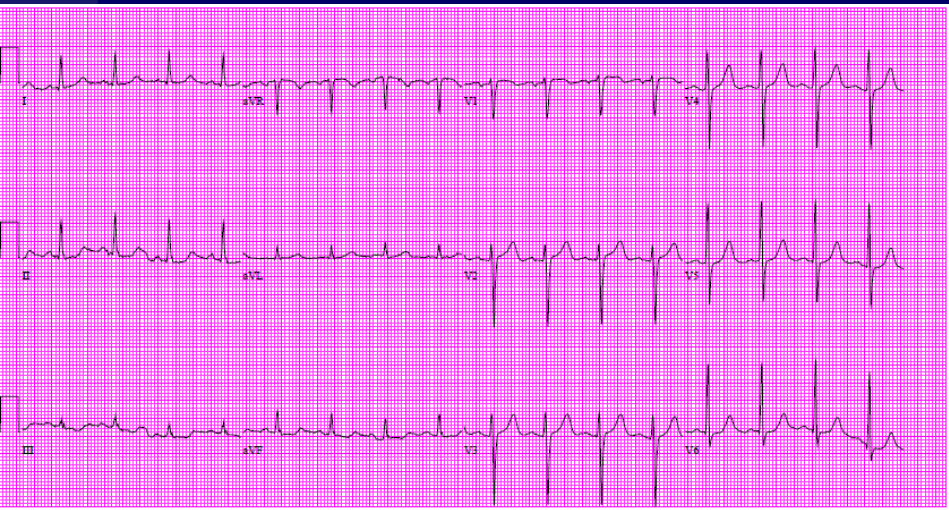
CASE 1

VIABLE or NOT?

- ♥ **MANAGED “MEDICALLY”**
 - ♥ **PLAN: PROCEED TO PV SURGERY, RE-EVALUATE POST OP**
- ♥ **SUBSEQUENTLY PRESENTED WITH INCREASING DYSPNEA AND CHEST PAIN**
- ♥ **GIVEN ECHO IMAGES AND STRESS TEST, IS ANY FURTHER TESTING / IMAGING WARRANTED?**
 - ♥ **CARDIAC CATH: RENAL / VASCULAR ISSUES**
 - ♥ **VIABILITY TESTING: ANY USE WITH ECHO / PERFUSION DATA?**

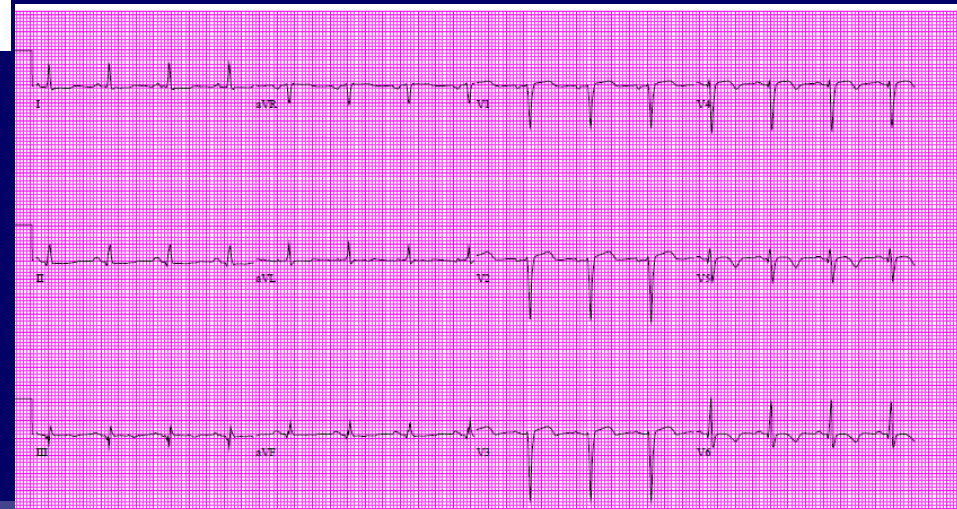
CASE 1

VIABLE or NOT?

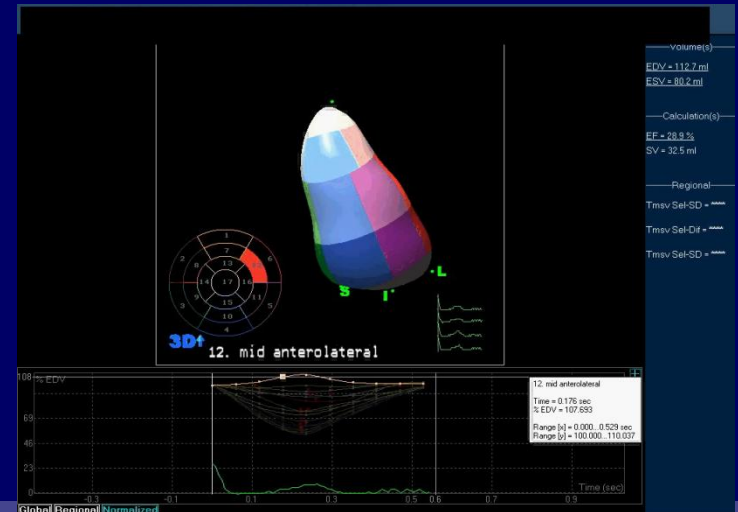
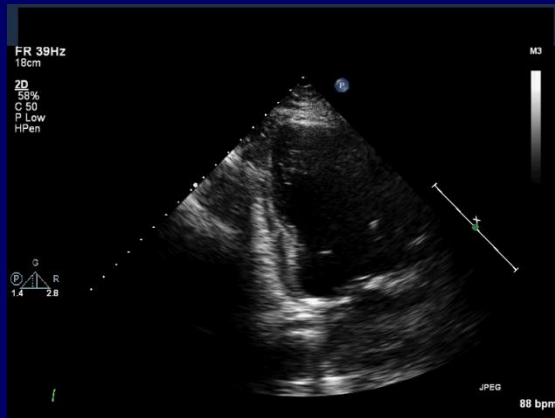
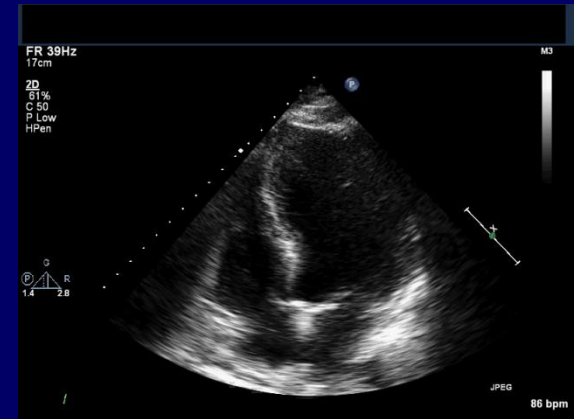
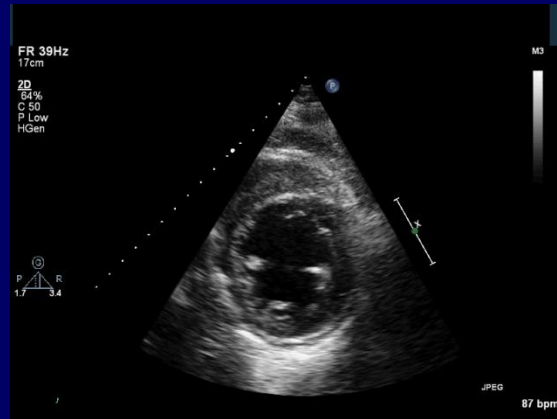
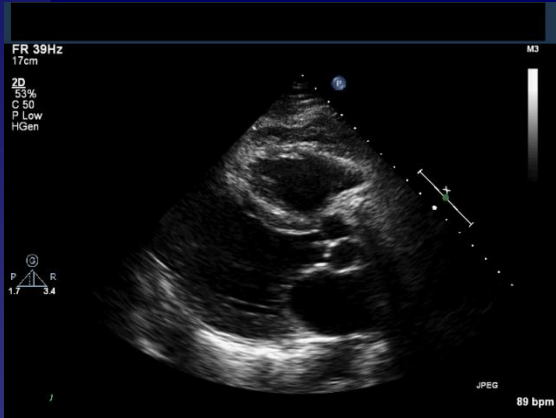


12 MONTHS PRIOR

CURRENT

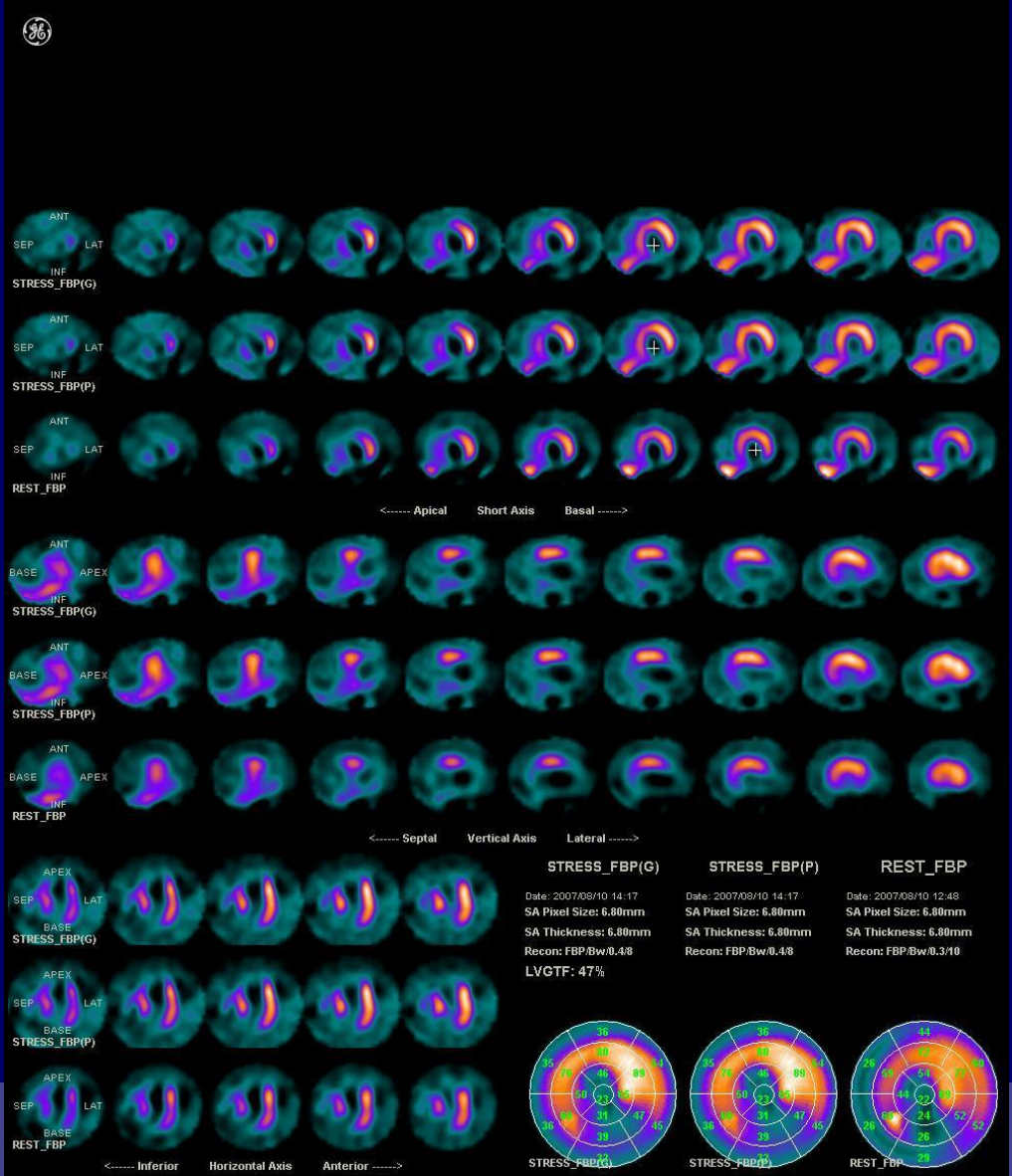


VIABLE or NOT?: ECHO IMAGES

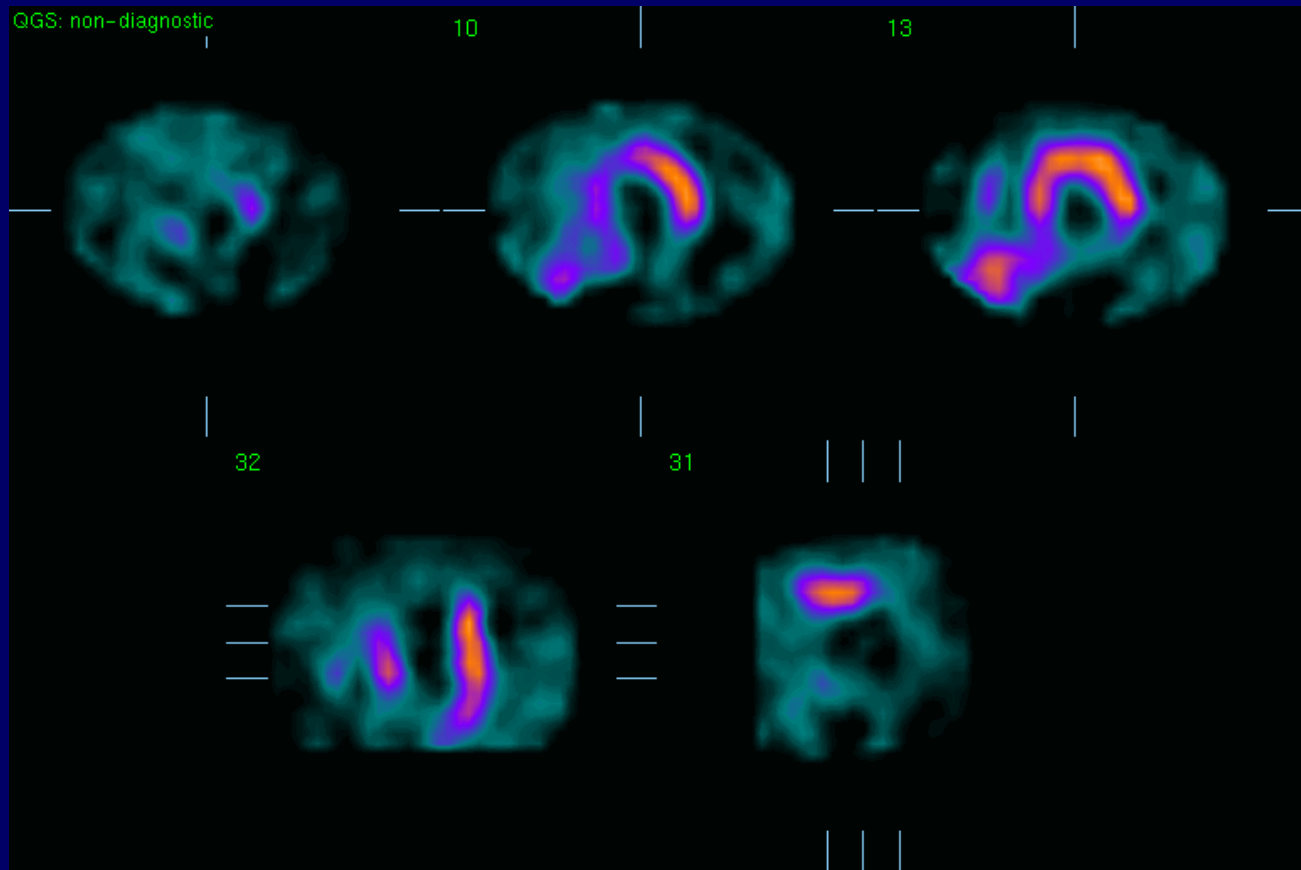


EF = 29%

VIABLE or NOT?: NUCLEAR IMAGES



VIABLE or NOT?: NUCLEAR IMAGES



CASE 1

VIABLE or NOT?

- ♥ **VIABILITY TESTING OPTIONS:**
 - ♥ **NONE: UNLIKELY TO HAVE VIABILITY BASED ON ECHO / MIBI / ECG**
 - ♥ **DOBUTAMINE STRESS ECHO**
 - ♥ **NUCLEAR (?REST – REDISTRIBUTION TI)**
 - ♥ **PET**
 - ♥ **MRI**

CASE 1

VIABLE or NOT?

♥ Dr. Raman: opinions / options

CASE 1: VIABLE or NOT?

Conclusions / Case Outcome / Summary

CASE 2: ADVANCED IMAGING IN HCM: RISK STRATIFICATION

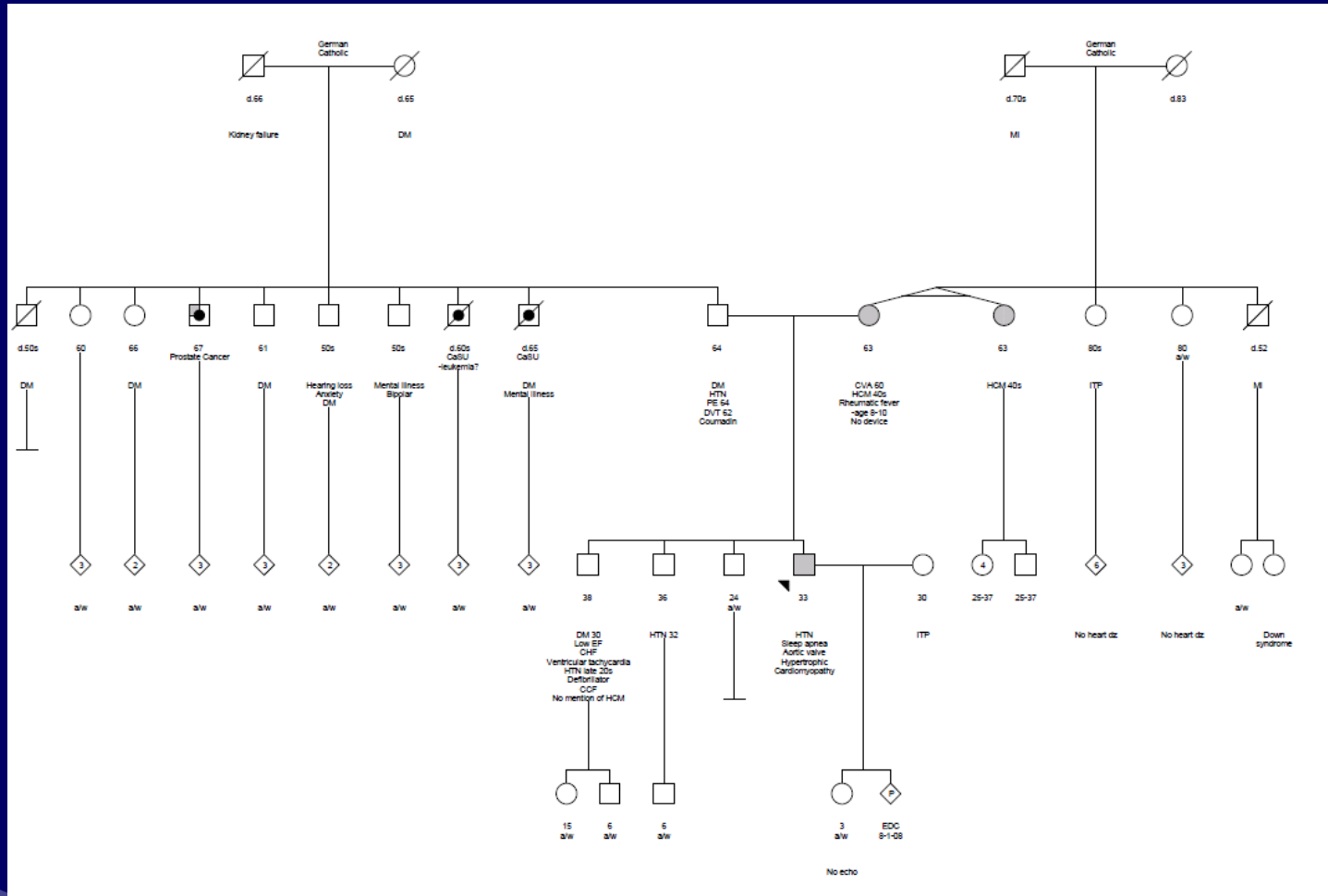
- ♥ 35 y/o man with a history of HTN, a heart murmur and OSA
- ♥ Initially presented for second opinion for need for AVR
- ♥ Denied any symptoms
- ♥ Medications: Metoprolol, diltiazem and lisinopril
- ♥ PE: Normal carotid upstrokes; Ejection click; I/VI SEM; II/VI diastolic murmur; Clear Lungs
- ♥ Repeat Echo revealed a bicuspid AV (2-3+ AR, no AS, nl EF and LVEDD 5.9 cm); Asymmetric hypertrophy (1.5 cm) with no gradient

CASE 2

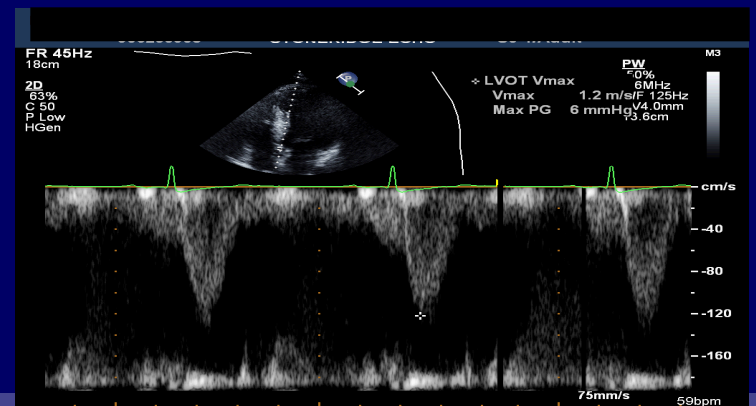
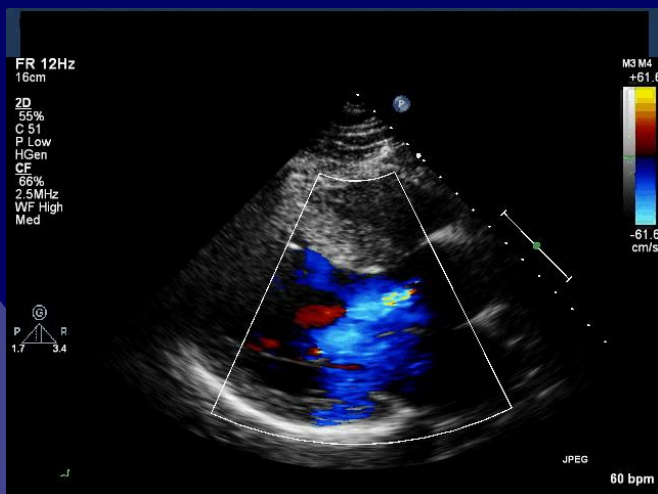
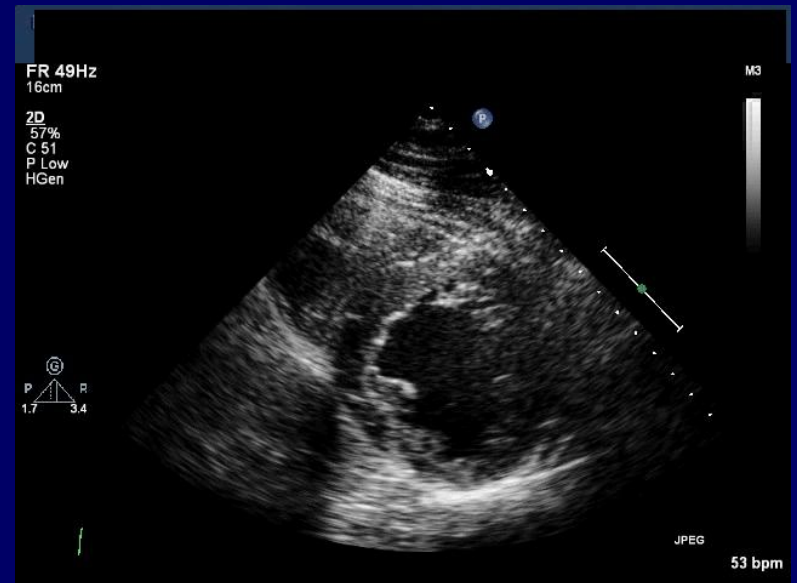
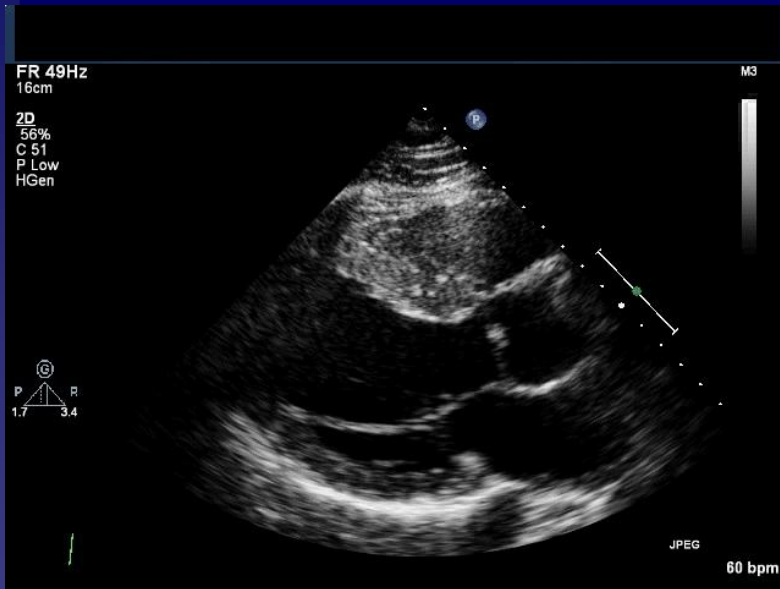
HCM CLINICAL EVALUATION

- ♥ New diagnosis of HCM
- ♥ Further FH (initially not mentioned)
 - ♥ Mother (62 y/o) has “IHSS”
 - ♥ Her twin also has HCM
 - ♥ Maternal uncle died at age 35 y/o (no etiology)
 - ♥ 2 other maternal aunts with no dx of HCM
 - ♥ Brother with “CHF” and ICD (unknown dx)

HCM CLINICAL CASE: PEDIGREE

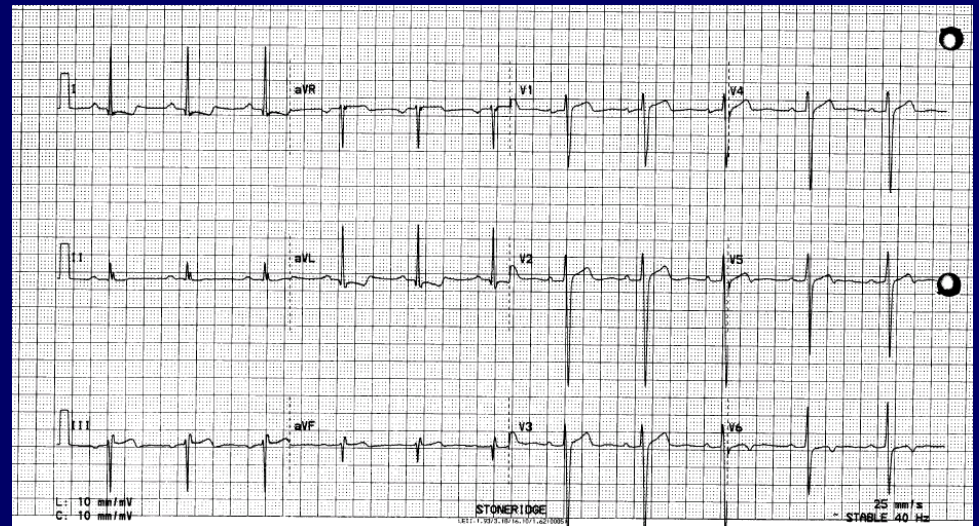


HCM: INITIAL DATA ECHO



HCM: ECG / HOLTER / STRESS TEST

- ♥ Holter: 22 PVC's, no VT
- ♥ Stress Test: No sx, nl BP and HR response



RECOMMENDED EVALUATION

- ♥ EKG
- ♥ Echo
- ♥ CK-MM (1st visit only)
- ♥ Holter
- ♥ Exercise treadmill testing
- ♥ MRI

CURRENT RECOMMENDATIONS FOR RISK STRATIFICATION IN HCM

Table 2. Risk Factors for Sudden Death in HCM*

Major	Possible in Individual Patients
Cardiac arrest (ventricular fibrillation)	Atrial fibrillation
Spontaneous sustained ventricular tachycardia	Myocardial ischemia
Family history of premature sudden death	LV outflow obstruction
Unexplained syncope	High-risk mutation
LV thickness greater than or equal to 30 mm	Intense (competitive) physical exertion
Abnormal exercise blood pressure	
Nonsustained ventricular tachycardia (Holter)	

HCM “TRADITIONAL” RISK FACTORS

- ♥ Patient with no “traditional RF” other than ?? FH in uncle
- ♥ CAN ADVANCED IMAGING ADD TO DX AND / OR RISK STRATIFICATION?

HCM: ROLE OF MRI

Dr. Raman Comments

HCM CLINICAL CASE FOLLOW-UP

Thank You !

