Cardiology Cath Conference

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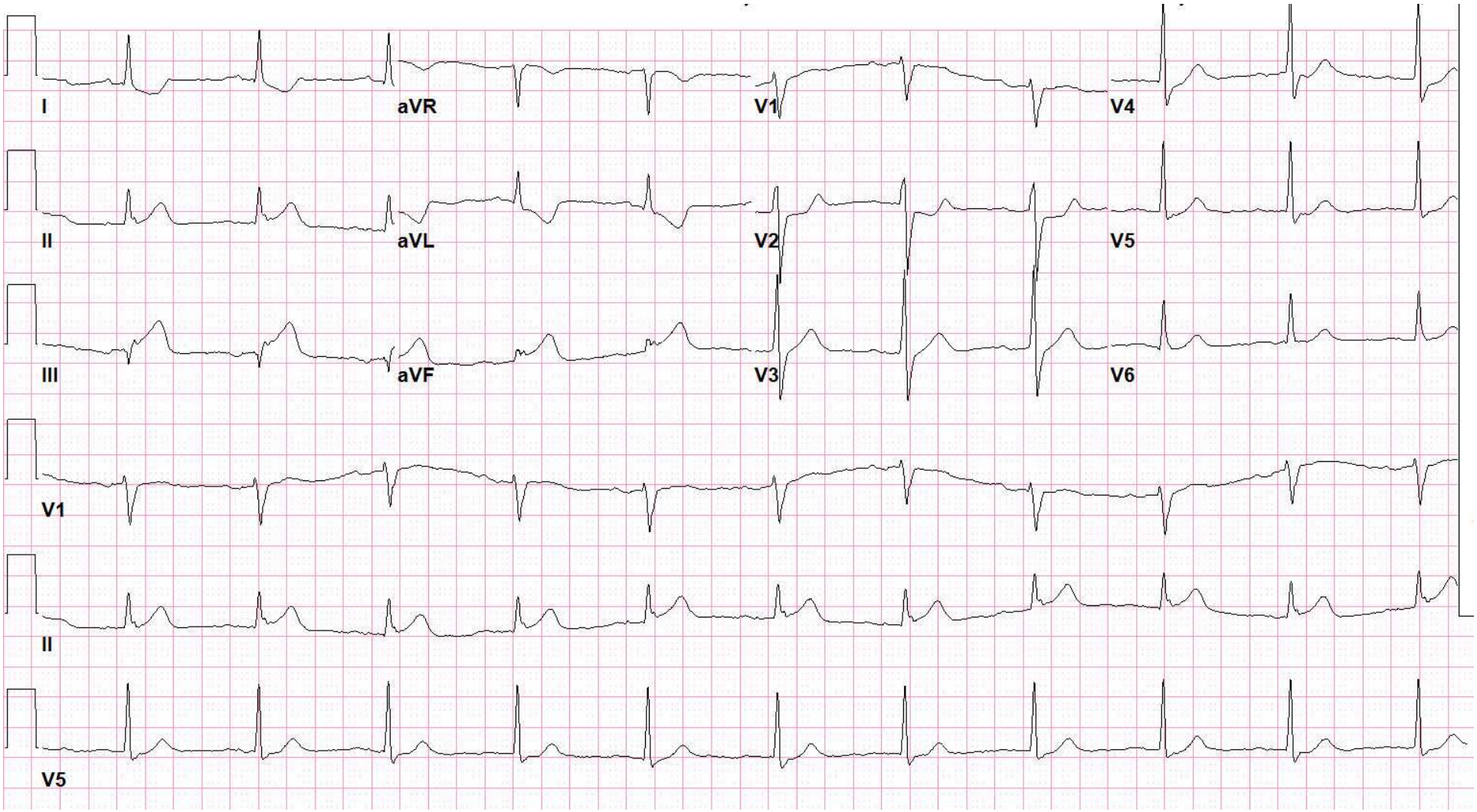
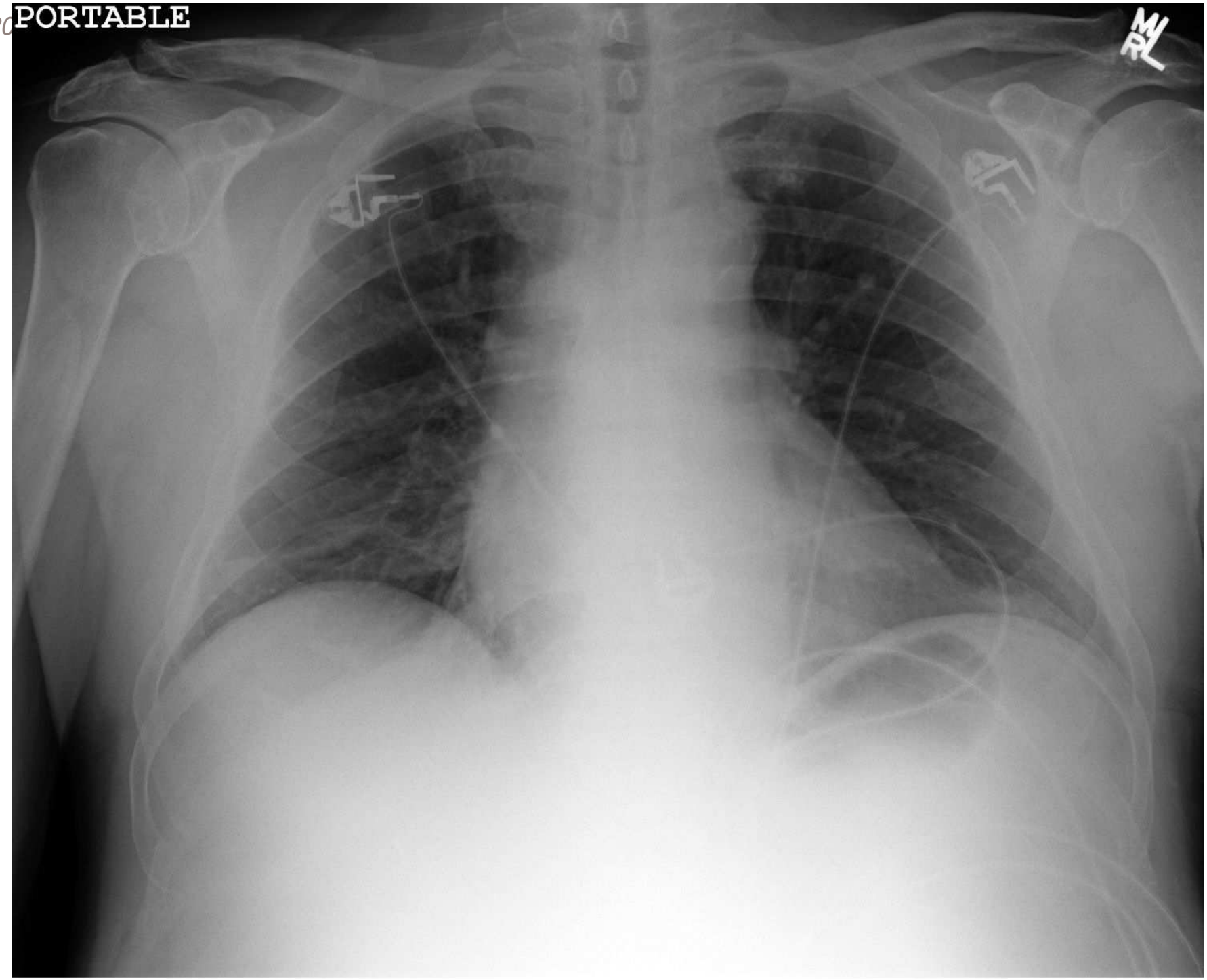
Case #1

- 84 yo WM brought by squad this am for ? syncope
- Pt reports Chest pain stuttering over several days. This am awoke with CP and apparently had syncope (found by sons). Brought to ED, reports CP 8/10.

- No hx GIB, CVA
- NKDA
- Has hx of '5 caths' and possible thoracic aortic aneurysm?

EKG





Lytics or PCI?

Fibrinolysis is generally preferred if (see Section 6.3.1.6.3.1 of the full-text guidelines):

- *Early presentation (3 hours or less from symptom onset and delay to invasive strategy; see below)*
- *Invasive strategy is not an option*
  - Catheterization laboratory occupied/not available
  - Vascular access difficulties
  - Lack of access to a skilled PCI laboratory†‡
- *Delay to invasive strategy*
  - Prolonged transport
  - (Door-to-Balloon) – (Door-to-Needle) time is greater than 1 hour*§
  - Medical contact–to-balloon or door-to-balloon time is greater than 90 minutes

An invasive strategy is generally preferred if (see Section 6.3.1.6.4.2 of the full-text guidelines):

- *Skilled PCI laboratory available with surgical backup †‡*
  - Medical contact–to-balloon or door-to-balloon time less than 90 minutes
  - (Door-to-Balloon) – (Door-to-Needle) is less than 1 hour*
- *High risk from STEMI*
  - Cardiogenic shock
  - Killip class greater than or equal to 3
- *Contraindications to fibrinolysis, including increased risk of bleeding and ICH*
- *Late presentation*
  - Symptom onset was more than 3 hours ago
- *Diagnosis of STEMI is in doubt*

Figure 3. Assessment of reperfusion options for patients with STEMI. STEMI indicates ST-elevation myocardial infarction; PCI, percutaneous coronary intervention; ICH, intracranial hemorrhage. *Applies to fibrin-specific agents (see Figure 15 in the full-text STEMI guidelines). †Operator experience greater than a total of 75 primary PCI cases per year. ‡Team experience greater than a total of 36 primary PCI cases per year. §This calculation implies that the estimated delay to the implementation of the invasive strategy is greater than 1 hour vs initiation of fibrinolytic therapy immediately with a fibrin-specific agent.

ACC 2004 STEMI

Absolute contraindications to Lytics

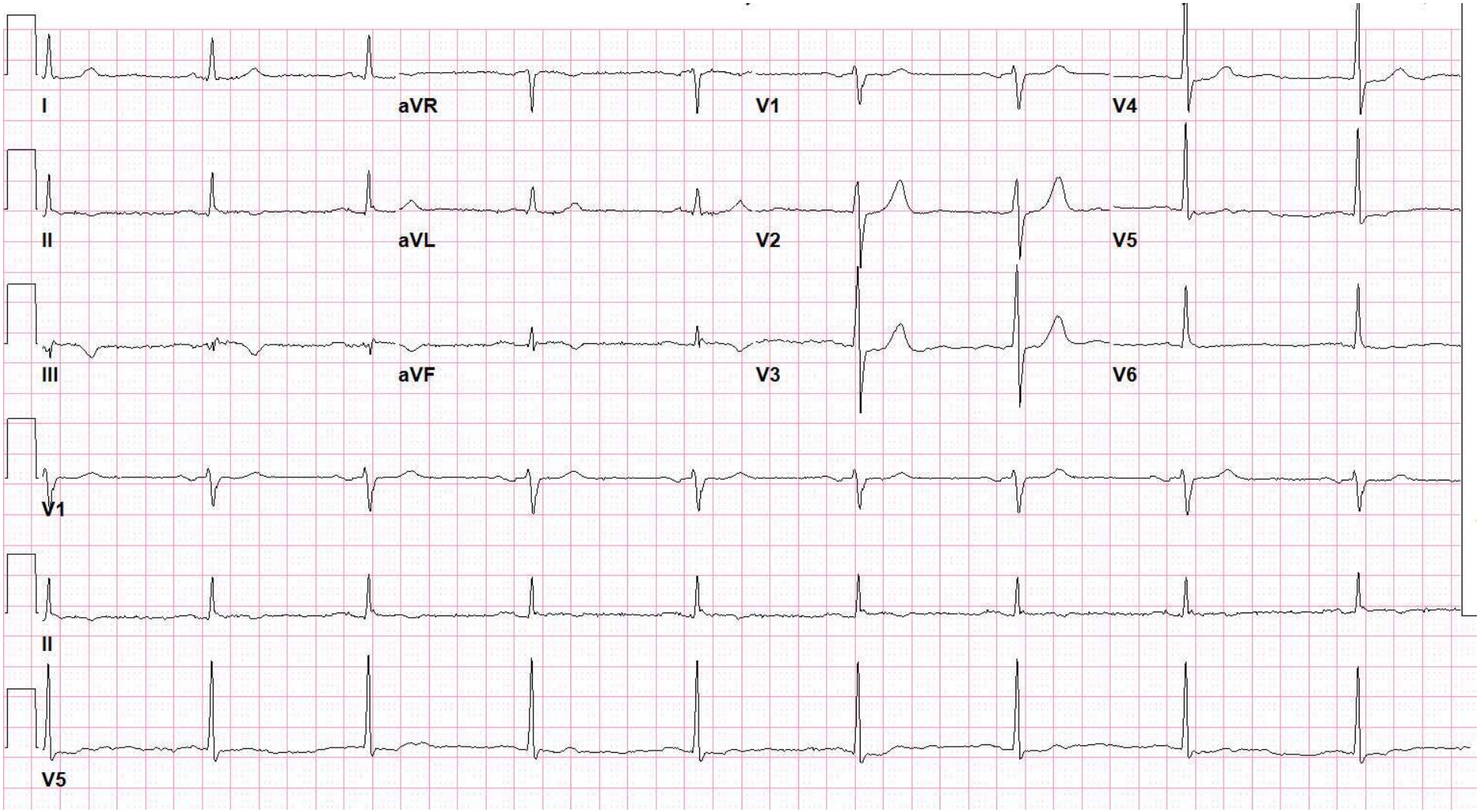
- Any prior ICH
- Known structural cerebral vascular lesion (eg, AVM)
- Known malignant intracranial neoplasm (primary or metastatic)
- Ischemic stroke within 3 months EXCEPT acute ischemic stroke hours
- Suspected aortic dissection
- Active bleeding or bleeding diathesis (excluding menses)
- Significant closed head or facial trauma within 3 months

Relative Contraindications for Lytics

- History of chronic severe, poorly controlled hypertension
- Severe uncontrolled hypertension on presentation (SBP greater than 180 mm Hg or DBP greater than 110 mm Hg)†
- History of prior ischemic stroke greater than 3 months, dementia, or known intracranial pathology not covered in contraindications
- Traumatic or prolonged (greater than 10 minutes) CPR or major surgery (less than 3 weeks)
- Recent (within 2 to 4 weeks) internal bleeding
- Noncompressible vascular punctures
- For streptokinase/anistreplase: prior exposure (more than 5 days ago) or prior allergic reaction to these agents
- Pregnancy
- Active peptic ulcer
- Current use of anticoagulants: the higher the INR, the higher the risk of bleeding

Post PCI EKG

100% prox total RCA --> 3.0x32mm Taxus --> 0%, TIMI 3



Case #2

- 59 yo WM with COPD, DM, HTN seen as outpatient
- He has significant sob/doe with walking 50 feet
- Occasional CP - described as sharp in his left chest which is worse at night, last a few seconds and come and go - intensity of pain has gotten worse as well as dyspnea.
- ROS: mild edema, and 3 pillow orthopnea; no PND, claudication

Past History

- Hx of cath with “30% blockages”
- DP-Thallium (1 year ago) – LVEF 67%, normal wall motion, no ischemia
- MUGA (8 months ago) – LVEF 64%, probable normal RVEF

- COPD, OSA, DM, HTN, HLP

- Soc Hx: tob 1ppd quit 20 yrs ago, rarely etoh
- Fhx: DM, HTN, CAD

- Right/Left heart cath to evaluate for CAD, Pulmonary HTN

Current Meds

- ALBUTEROL
- AMLODIPINE
- ASPIRIN 81MG
- CLOTRIMAZOLE 1% CREAM
- FLUNISOLIDE
- GLIPIZIDE 5MG
- IPRATROPIUM
- ISOSORBIDE DINITRATE 10MG
- LEVOTHYROXINE NA (SYNTHROID) 0.1MG
- LISINOPRIL 40MG
- LORATADINE 10MG
- METFORMIN HCL 1000MG
- METHOCARBAMOL 500MG
- METOPROLOL TARTRATE 25mg bid
- OMEPRAZOLE 20MG
- SIMVASTATIN 40mg qhs
- TRAZODONE
- VENLAFAXINE HCL 150MG

Hemodynamics

	Pressure	O2 sat
RA	10	70
RV	28/5 (11)	
PA	16/31	
PCWP	10	
LV	120/6 (21)	
Aorta/FA	123/72	93

How to Calculate Cardiac Output

$$\frac{\text{Oxygen Consumption}}{\text{Oxygen Delivery}}$$

O2 consumption

- Douglas bag most accurate
  - Never used
- Estimated common (10% error)
  - 125 mL/m^2 (110 mL/m^2 for elderly)
  - BSA (m^2) = Sq Root (wt in kg * height in cm/3600)
- AV difference (Fick) (5% error)
  - Photodetector technique of expired air
- Cardiac ouput = O2 consumption/A-V O2 oxygen content difference
    - Hgb x 1.36 [x 10] x (Arterial O2 – Mixed Venous O2)

Calculation of CO

- FA 93
- RA 70
- Hgb 14.9 g/dL (0.149 g/mL)
- BSA = 2.49 m2

- $\frac{[2.49] \times 125 \quad \text{(Oxygen consumption)}}{0.149 \times 1.36 \times 10 \times (93\text{-}70) \text{ (Oxygen delivery)}}$
- CO = 6.68 L/min

Case #3

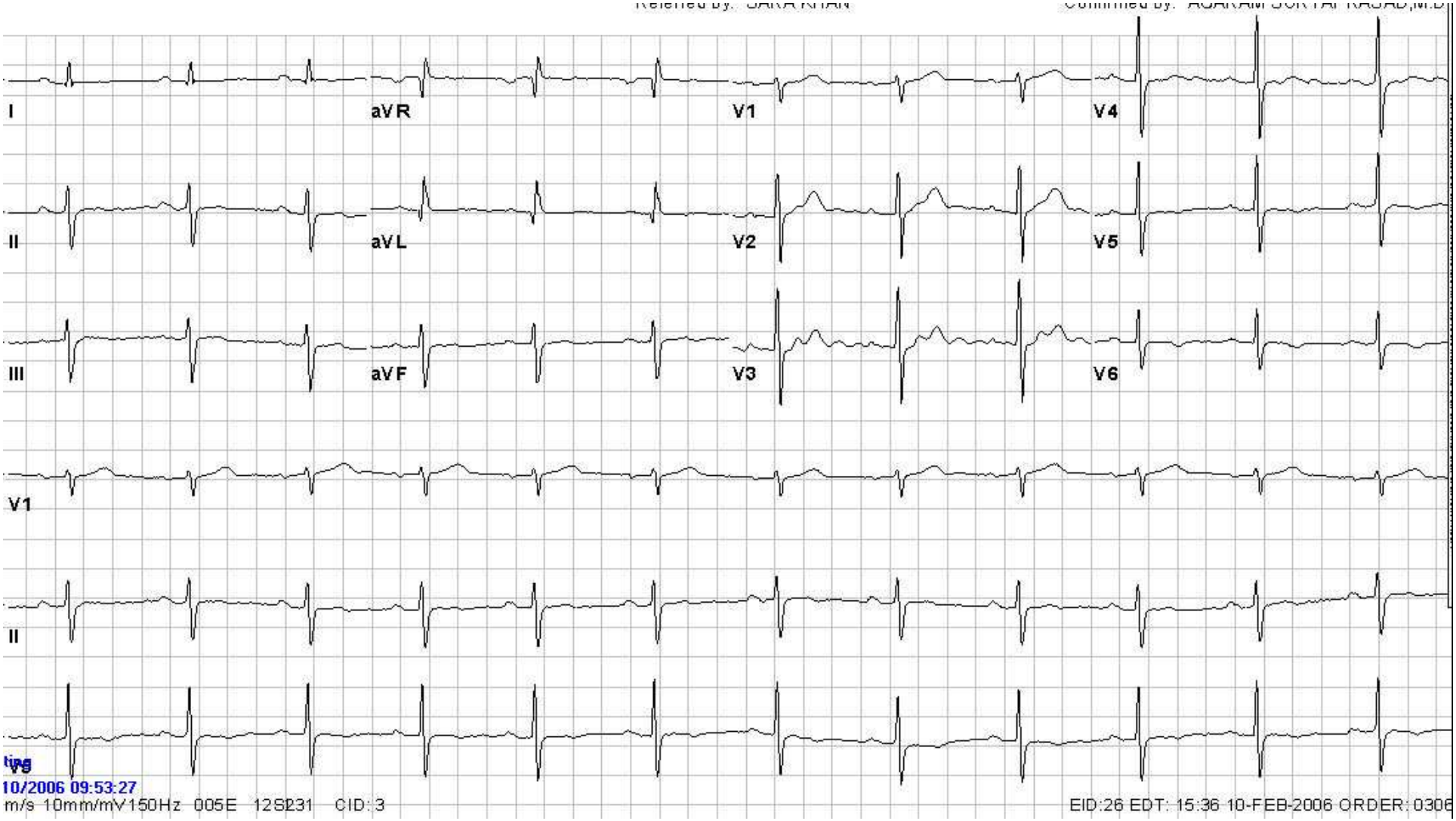
- 73 yo M admitted at outside hospital 2/8 with chest pressure
- Ultimately diagnosed with NSTEMI by positive cardiac enzymes
- Transferred to VA for further evaluation last night.

- Currently with mild chest discomfort, on NTG IV
- No prior CAD symptoms - no CP/SOB
- Previously able to walk up 1 flight of steps without problem
- No CHF symptoms

- No prior cardiac hx

- Soc - no tob
- Fam - + CAD uncle, father in late 50's/early 60's age

Current EKG



Case #4

- 51 yo male HTN, HLP, CAD, s/p PCI of Cx/OM 8 months ago
- Complains of exertional chest tightness for the last 2 months similar to what he was experiencing prior to last PCI

- Stress test 2.5 years ago – suboptimal, Questionable mild inferolateral ischemia
- Echocardiogram 8 months ago
  - Moderate LVH, EF 55-60%
  - Grade 1 diastolic dysfunction
  - Moderate Aortic regurgitation
  - Mild Mitral and Tricuspid regurgitation
  - RVSP 40mm Hg

Cath results

- Principle Findings:
- 1) 60% mid segmental LAD
- 2) 40-50% prox Cx
- 3) patent OM2 stent, aneurysm
- 4) 100% prox RCA, with distal L-R collaterals
- 5) LVEF 50%, mildly dilated LV
- 6) Mild aortic dilitation
- 7) 2+ Aortic regurgitation

- Recommendations:
- 1) Bacterial endocarditis prophylaxis
- 2) Will get dp-thal to eval for ischemia with CAD intermediate lesions
- 3) Cont ACE, statin, B-blocker, plavix, ASA
- 4) Change isordil to 20mg bid (8am and 4pm)

Case #5

- 78 yo male, HTN, HLP, PVD, CAD
- PCI with STent Cx 6 months ago
- Complains of exertional chest discomfort

- Stress test 1 month ago (Dp-Thal)
  - EKG ST depression during DP infusion with chest pain
  - No ischemia by thallium

Cath Results

- 1) 70% ostial LAD, eccentric stenosis
- 2) 70-80% ostial OM1, moderate size
- 3) 40-50% OM2
- 4) Patent OM2 (Mid Cx) Stent
- 5) 95% prox RCA
- 6) 70% long prox PLV
- 7) Normal LVEF 55-60%
- 8) No mitral regurgitation
- 9) High EDP (26)