

12 – Lead EKG of the Month

Month February Year 2009

EKG	#1	#2	#3
Clinical info.	77 year old male Patient developed chest pain nausea and SOB after using the restroom. Poor skin signs.	60 year old male Patient with a history of CHF, diabetes and an MI in 2005 developed chest pain and shortness of breath at MD's office during evaluation of fluid in the left lung.	80 year old female Hx of intermittent CP x 2 weeks. CP became "dramatically" worse 30 minutes prior to EMS arrival with severe SOB. 8/10 "pressure" radiating to the epigastric area. No nausea or vertigo.
Rate	43	112	88
Rhythm	Complete heart block	Sinus tachycardia	Sinus (however, bizarre)
ST Elevation?	Yes	Yes	Yes
Leads	II, III, aVF	V1-V3	V1-V4
Location (if STEMI)	Inferior	Anteroseptal	Anteroseptal
Arteries (if STEMI)	RCA (think right sided MI)	LAD	Left anterior descending
Reciprocity (if STEMI)	I, aVL	No	Possibly in leads I and II
Imposter(s)?	No	No	No
List imposter(s)	N/A	N/A	N/A
Other info.	Always keep in mind the importance of obtaining a view of the right ventricle with inferior wall MIs by placing the right sided chest leads V4R - V6R. At the minimum obtain V4R. If you have ST elevation in V4R (or V5, V6) be very cautious with nitroglycerin as right sided MIs have a problem with reduced preload that is adversely affected by nitro. Make sure you have an IV with 1000 CCs of normal saline in place before nitro administration. Consider 250-500 cc fluid bolus.	This patient is just under the voltage criteria for LVH so one should look at this EKG with extra care. There is 1 mm of ST elevation in leads V1 – V4. This is very borderline, but coupled with the patient's past medical history and the patient's doctor reporting a positive troponin test, it seems prudent to treat this patient with the utmost caution as an ACS patient. Remember the criteria for determining LVH: first, choose the largest negative (downward) deflection of leads V1 or V2 and count the boxes; second, choose the largest positive (upward) deflection of leads V5 or V6 and count the boxes; lastly, add the two numbers (the total off the boxes you just counted) and if they are >35 mm you have met "voltage" criteria for LVH.	Even though this patient has LBBB, notice the clear ST elevation (>5mm in opposite direction of QRS) in V4 that has a more flattened ST segment. The Sgarbossa criteria: > 1mm ST elevation with QRS concordance (QRS complex and ST segment, T wave are pointing in the same direction; >1mm ST segment depression in leads V1-V3.; >5 mm ST elevation with QRS discordance (QRS and ST segment, T Wave are pointing in opposite directions) in the precordial leads. These criteria give you a score of 0-3, with each test worth one point. The higher the score, the higher the likelihood of the patient having an MI. This patient also had more than one high risk conditions: female patient; >75 years old; she has a history of CHF; she has diabetes; ST elevation in more than 3 leads. Always be a patient advocate.