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# EKG Underwriting Puzzler

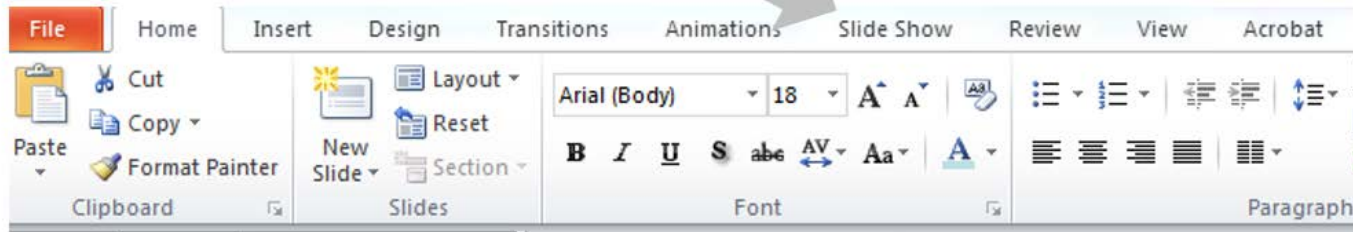
Presented by: Regina Rosace, M.D.



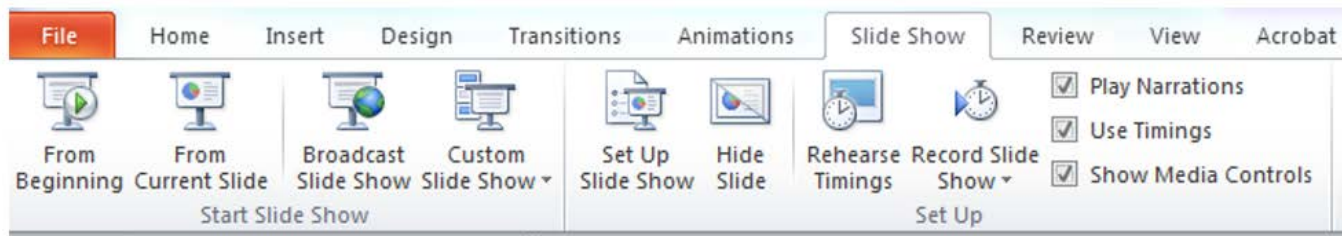
# Obtaining Best Results from this presentation

For best results—please do the following:

- Select “Slide Show” from the menu option on top

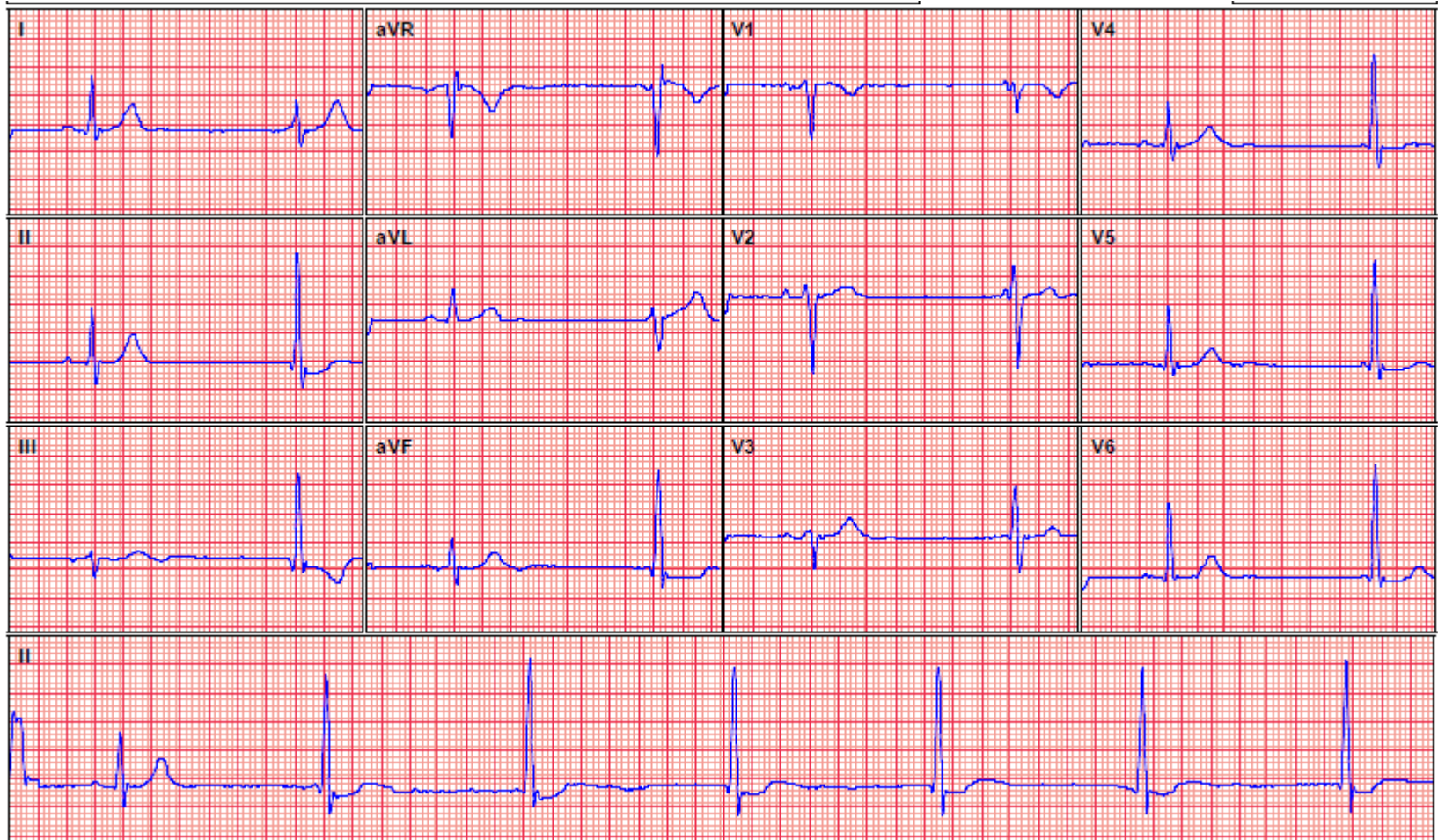


- Select “From the beginning”

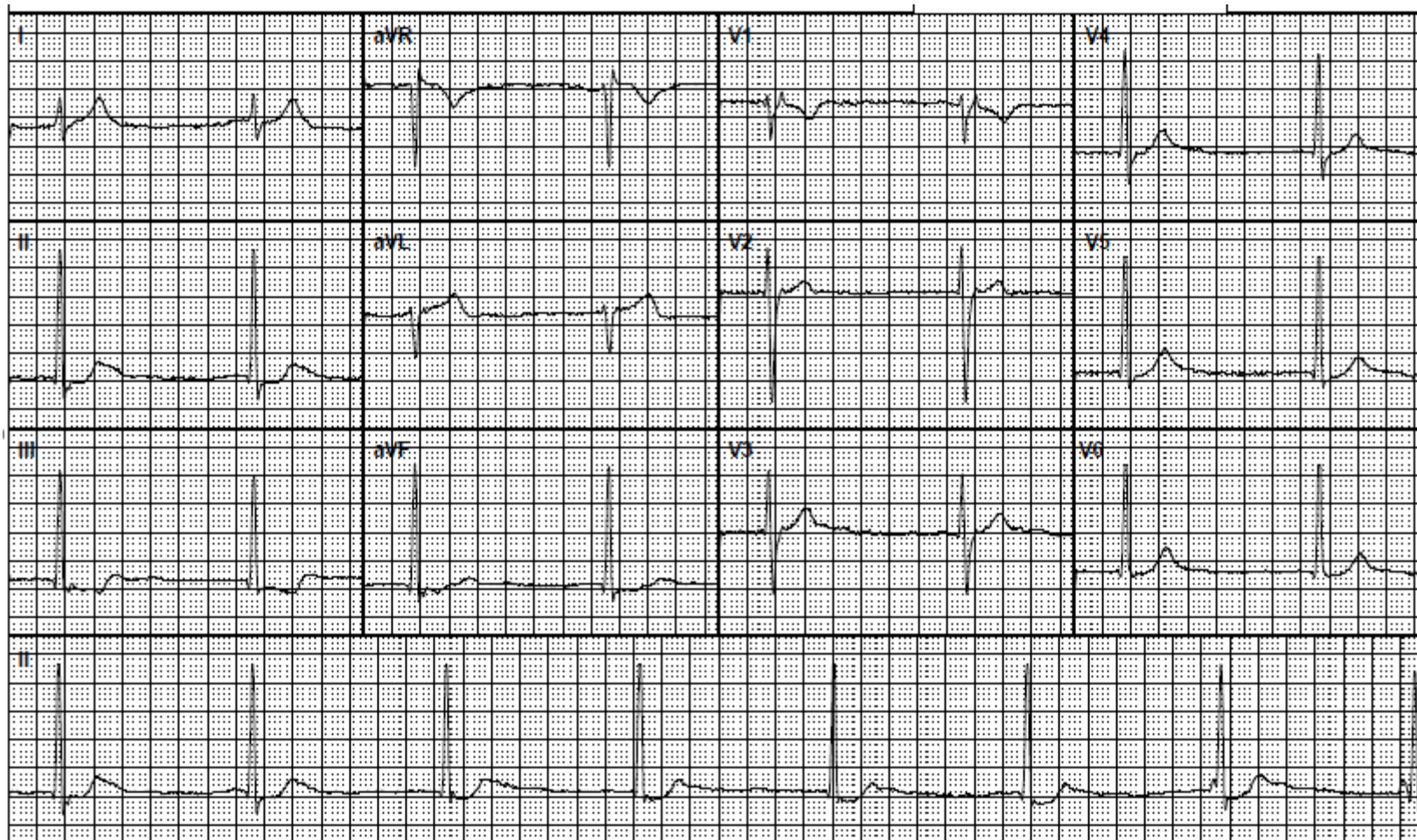


- Slowly click through the presentation
- Have fun!---Good luck

54 yo male, no symptoms or illnesses declared.



This EKG is from the same person 1 year earlier.

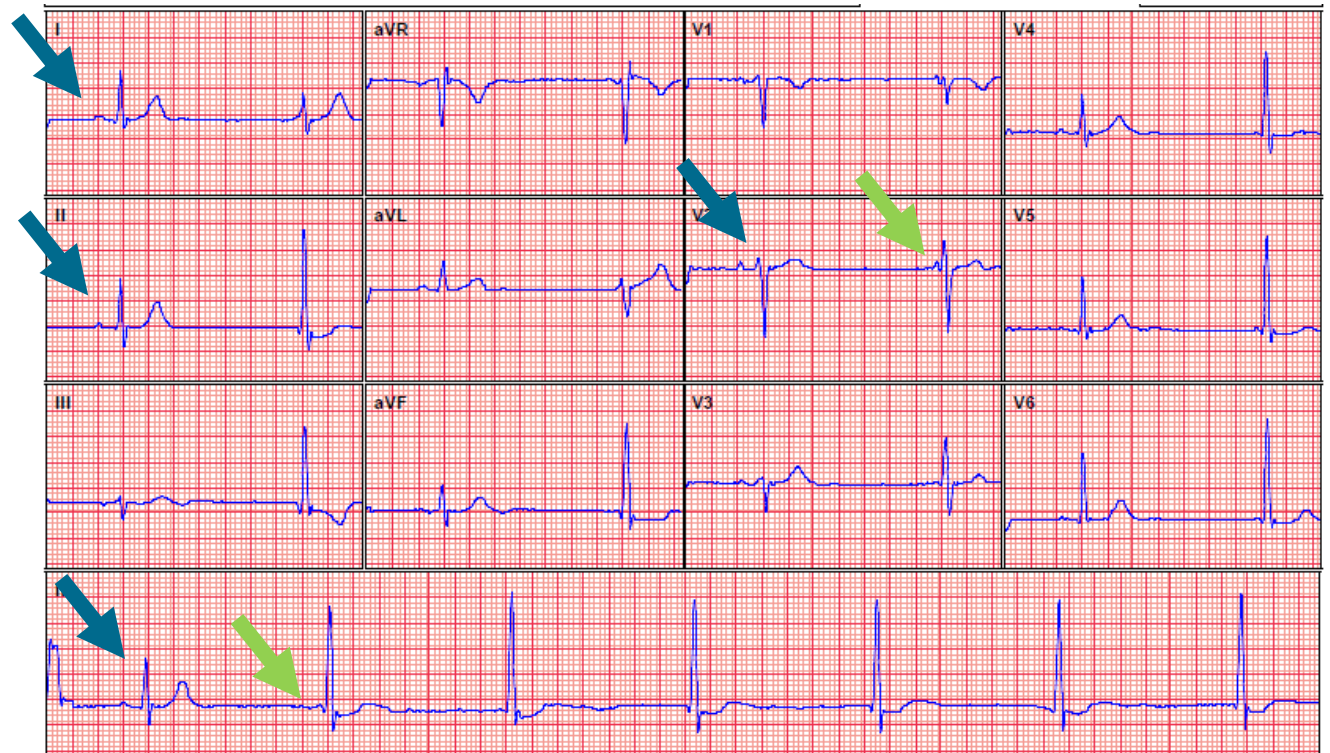


Let us review the first EKG.

The rate is about 40-45 bpm.  
But is it sinus bradycardia?

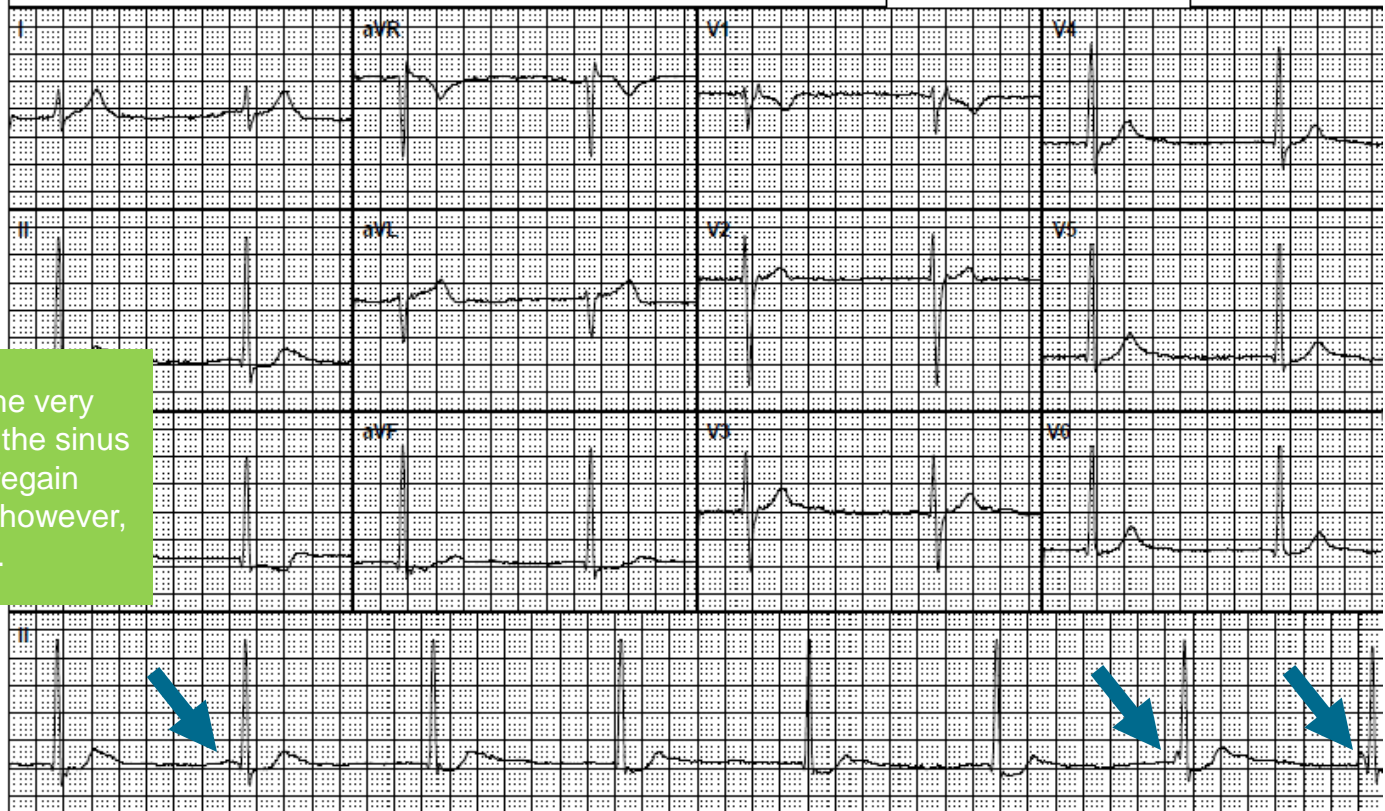
The first beat in all of the leads appears to be sinus, with a normal appearing P wave and an average length PR interval.

The rest of the beats have either no P wave or a P wave with a very shortened PR interval.



Now for the other EKG. The rate is about 40-45 bpm. But is it sinus bradycardia?

There are only a few P waves on this tracing, and the PR interval is shortened.



The P waves with the very short PR intervals are the sinus node's attempt to regain command. They are, however, unsuccessful.

# Junctional Escape Rhythm

## Definition of Junctional Escape Rhythm

- A junctional rhythm with a rate of 40-60 bpm.
- QRS complexes are typically narrow (< 120 ms).
- No relationship between the QRS complexes and any preceding atrial activity.

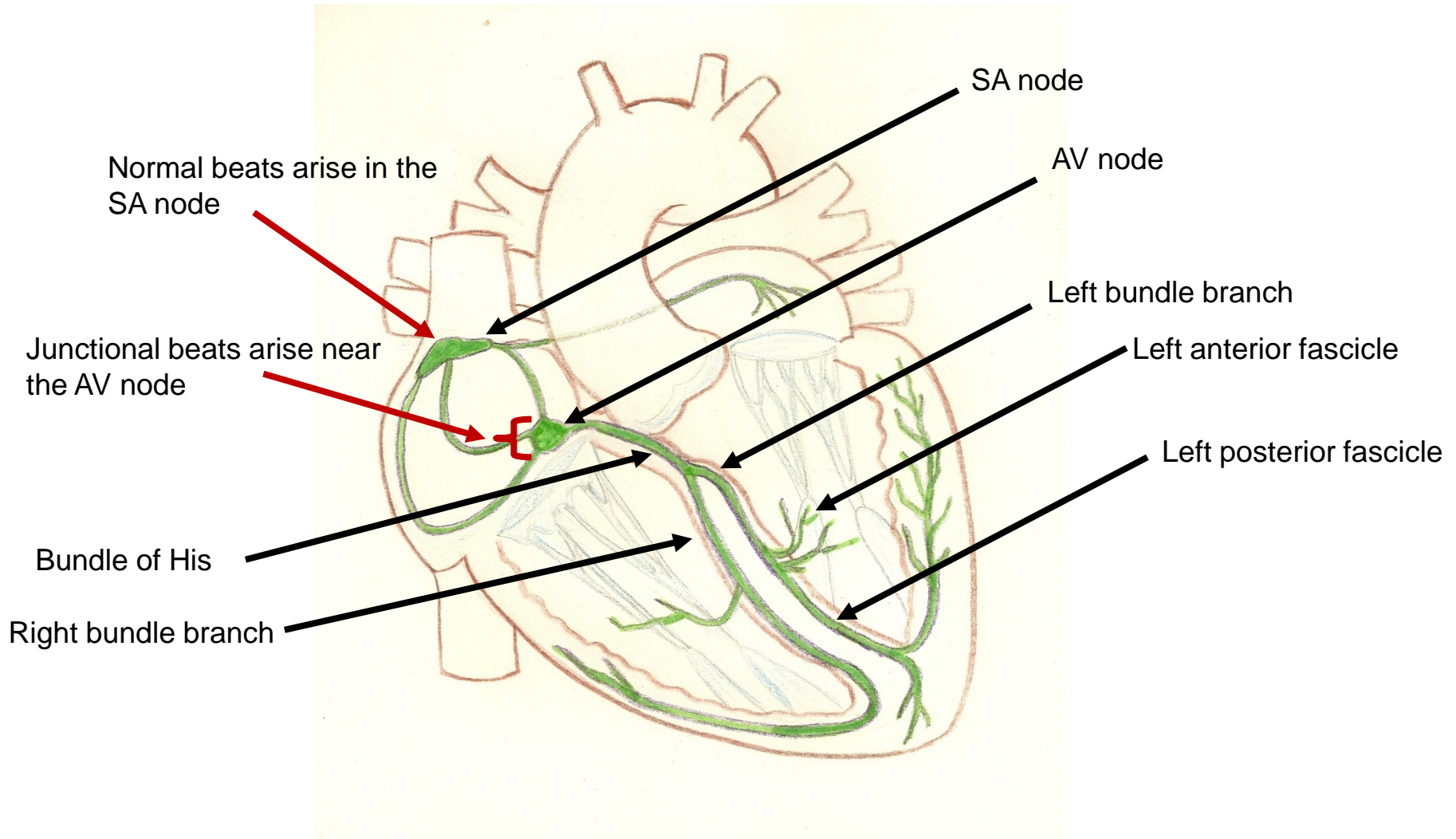
# Junctional Escape Rhythm

## Mechanism of Junctional Escape Rhythm

- Pacemaker cells are found throughout the conducting system of the heart and are capable of independently sustaining a heart rhythm.
- Normally, these secondary pacemakers are superseded in function by the more rapid impulses of the sinus node.
- Escape rhythms occur when the supraventricular impulses arriving at the AV node are slower than the intrinsic rate of the ectopic pacemaker.



# Conducting system of the heart



# Junctional Escape Rhythm

Causes of Junctional Escape Rhythm include:

- Severe sinus bradycardia
- High grade second degree AV block
- Third degree AV block
- Hyperkalemia
- Drugs such as beta-blockers, calcium channel blockers, or digoxin

## Back to the case:

Due to the possible underlying causes of a junctional escape rhythm, it would be prudent to postpone for cardiac evaluation of this proposed insured.