Diagnostic Dilemma

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Questions:

1) A 68-year-old male was admitted for increasing shortness of breath. Past medical history was significant for COPD, rheumatoid arthritis and coronary artery disease. A few hours after admission he became increasingly short of breath. An EKG obtained at that time is shown below. HR was 140 bpm, BP 100/70 mmHg, pulse oximetry sat was 88% on 6 liters of oxygen via nasal cannula. What is the next best step in patient management?

A) Administer adenosine
B) Perform DC cardioversion
C) Administer amiodarone
D) Improve oxygenation

2) A 45-year-old African American male presents to ER with increasing weakness. He has CKD stage V on chronic hemodialysis. His medications include lisinopril, amlodipine and clonidine for hypertension. EKG obtained at presentation is shown below.

A) Administer adenosine
B) Perform DC cardioversion
C) Administer amiodarone
D) Improve oxygenation
What is the next best step in patient management?

A) Obtain electrolytes  
B) Administer calcium gluconate  
C) Emergent hemodialysis  
D) IV magnesium

3) A 55-year-old male with history of congestive heart failure, hypertension and ischemic cardiomyopathy is admitted for nausea, vomiting and diarrhea of 2 days duration. EKG was obtained and is shown below.

What is the most likely cause of the EKG findings?

A) Electrolyte imbalance  
B) Drug related  
C) Myocardial ischemia  
D) Pericardial effusion

Answers on page: 12

ASK A PATHOLOGIST

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QUESTION: My patient has a palpable neck mass that is suspicious for malignancy, and I am considering ordering a fine needle aspiration (FNA) versus a core needle or open biopsy. Which type of biopsy will have the fastest result from pathology?
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Answers:

1) **D**
ECG reveals multifocal atrial tachycardia. Multifocal atrial tachycardia is due to increased automaticity. It is diagnosed with the following criteria: heart rate >100 bpm and 3 different morphology of P waves. Varying PP, PR and RR intervals are also noted. Treatment includes treating underlying cause of hypoxia.

2) **B**
Sine wave pattern suggestive of hyperkalemia is seen on EKG. Sine wave pattern indicates potassium level > 8 meq/dl. Although options A and C are reasonable, the first step would be to administer calcium gluconate to stabilize membrane potential followed by emergent hemodialysis.

3) **B**
This EKG shows atrial fibrillation with junctional or AV nodal escape rhythm. Digitalis toxicity should be suspected whenever a patient with atrial fibrillation has regular bradycardia. Digitalis increases the refractoriness of AV node and in digitalis toxicity can cause a complete heart (AV nodal) block and AV nodal escape rhythm.

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