MECHANISMS OF HUMAN DISEASE
AND
PHARMACOLOGY & THERAPEUTICS

CARDIOVASCULAR
CASE-BASED SMALL GROUP DISCUSSION

MHD I
SESSION 8

October 15, 2018

STUDENT COPY
Recommended preparation

View “Cardiac Tamponade (Tamponade) video by Dr. Haske. On MHD LUMEN site under “Pathophysiology Correlates”

The student who developed a clinical question during the previous small group session should share their search strategy; resources and references used to answer the question; and a summary of the answer to their question.

Case 1

Cc: I had some chest pain and dizziness this morning

HPI A 65-year-old man presents to the emergency department for evaluation of chest pain. He described feeling weak and dizzy after taking a walk around the block in the morning. This episode of dizziness was followed by 10-15 minutes of chest pain that quickly resolved when he rested. He also described a 2-month history of similar but shorter episodes of chest pain and dizziness after working in his yard.

He has been told that he has “high” cholesterol and he watches his diet. He has not seen a doctor for years.

He takes no medications aside from a daily multivitamin.

He has no drug allergies.

He is a retired carpenter. He is married. He smoked 1 pack of cigarettes a day in his 20s and has not smoked since. He drinks alcohol occasionally – holidays and special events.

Physical exam
Blood pressure on the right arm is 162/78, left arm is 168/76, pulse 78 and regular, respirations 16, temperature 98.6°F.
HEENT exam is normal.
Lungs are clear to auscultation.
Jugular venous pulse normal.
Cardiac auscultation: S1 is normal, S2 is soft and single, no S3, audible S4 present, III/VI crescendo-decrescendo systolic ejection murmur peaking in late systole along the left sternal border radiating to the upper right sternal border and into the carotid arteries. The PMI is sustained and laterally displaced.
Bilateral carotid artery pulses are noted to be diminished and late relative to the apical impulse.
Abdominal exam is normal.
There is no peripheral edema.
Educational Objectives:

1. Based on the history and physical exam findings develop a differential diagnosis for chest pain in this patient.

2. An EKG is below. Are there additional diagnostic tests you would order? (Faculty will provide results)

3. What diagnosis is highest on your differential based on the data provided? Describe the pathophysiology of the chest pain.
4. Correlate the physical exam findings with the pathology.

5. What determines the severity of his symptoms?

6. What are some reasons why the patient might feel dizzy?

7. What treatment would you recommend for his disease process? Based on his symptom(s), what is his prognosis without the recommended treatment?

8. Would you advocate promptly titrating antihypertensive medications to “normalize” the blood pressure? Why or Why not?

9. Unknown - Question will be provided during the small group session
Cases 2 and 3

In preparation for cases 2 and 3 define

a) Pulsus paradoxus

b) Beck Triad

c) Kussmaul Sign
Case 2

A 65-year-old man presents to the emergency department because of shortness of breath, lightheadedness and confusion for 4 hours. He has a history hypertension and progressive chronic kidney disease. On physical exam his heart sounds are distant and muffled.

EKG:

Echocardiogram:
Question will be provided during the small group session
Case 3
A 63-year-old man is evaluated for progressively worsening edema of his legs, generalized fatigue and dyspnea. He has been healthy since recovering from his “TB” infection years ago. On exam he has jugular venous distention. It is noted that on inspiration, there is a further increase in the jugular venous pulse. Chest radiograph is shown below.

Questions will be provided during the small group session.