Case 1

Describe the histology of a normal coronary artery. (Be sure to describe all of the layers of the artery in your discussion.)

What are the predominant cell types in each layer?
Case 1
What structure(s) are indicated by the box?
What are the functions of the cells?
Describe how environmental factors can contribute to injury of these cells and the subsequent changes that occur

Case 2
A 57-year old man has experienced chest pain with exertion for the past year. For example, when he walks up a flight of 10 or more stairs he develops a pain in his chest which subsides within several minutes when he sits down and rests.
Case 2
What diagnoses are you considering based on the brief history? Which do you favor?

Case 2
Compare and contrast the gross findings of the normal coronary artery in A and the pathology in B.

Case 2
Identify the key histologic components of the patient’s left anterior descending coronary artery. Compare and contrast the normal organ in A and the pathology in B (H&E low power).
Case 2

What is your pathologic diagnosis?

Correlate the clinical history with the pathologic findings. How would you explain this to the patient?

Case 3

A 67-year old man presents to the emergency department with 10/10 crushing substernal chest pain. The pain is greatest over his left chest and radiates down his left arm.
Case 3

List at least 4 life-threatening causes of chest pain.

Case 3

Compare and contrast the gross findings in the normal heart in A and the diseased heart in B.

Case 3

Describe the gross findings in the cross section of the coronary artery.
Case 3

What is your diagnosis?

Based on the gross findings, when did this event occur? Discuss your rationale.

Case 4

A 45-year old woman with diabetes mellitus, type 1 complained of “not feeling well” for several days. She collapses from a cardiac arrest and cannot be resuscitated. An autopsy is performed.
Case 4 – LAD 1 month before autopsy
Describe the histologic findings

Case 4 – LAD at Autopsy
Compare and contrast the normal histologic findings in A and pathology in B (H&E Low power). What are the circle, box, and arrow highlighting?

Case 4 – Left Ventricle at Autopsy
Compare and contrast the microscopic findings in the normal heart in A and the pathology in B (H&E Low and High power).
Case 4

What is your diagnosis?

Based on the histologic findings, when did this event occur? Discuss your rationale.

Case 4

Are the patient’s symptoms typical of this disease process? Provide a rationale to your answer.

Case 4

Define the term “vulnerable plaque”. Compare the coronary artery anatomy in case 2 and case 4 (H&E Low power). Which artery depicts the presence of an underlying vulnerable plaque?
A 56-year old man with diabetes mellitus, type 2 is found dead in his apartment. Investigation revealed that he had been to a local emergency department ~1 week prior with “chest pain” but left before being evaluated.
Case 5 – Section of Myocardium

Case 5

What is your diagnosis?

Explain the likely pathophysiologic sequence of events that lead to his death.

Case 6
Case 6

A 27-year old man presents with shortness of breath which developed 7 days prior and has been steadily worsening. He has no known medical problems and takes no medications. Physical exam reveals jugular venous distention, bilateral basilar lung crackles and lower extremity edema.

Case 6

Develop a clinical differential diagnosis.

Case 6 – Endomyocardial Biopsy

Compare and contrast the microscopic findings in the normal heart in A and the pathology in B (H&E Low and High power). How is it different than Case 4?
Case 6

Describe the histologic findings.

What is your pathologic diagnosis?

Case 6

What is the most common cause of this entity in the United States?

Correlate the clinical with the pathologic findings.