

Vascular Emergencies: Review Questions

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QUESTIONS

Choose the single best answer for each question.

- All of the following are well-described complications of aortic dissection EXCEPT**
 - Aortic valve insufficiency
 - Inferior wall myocardial infarction
 - Lower extremity paralysis
 - Pericardial tamponade
 - Pericarditis
- Which of the following is the most appropriate imaging modality for confirming the diagnosis of acute rupture of an abdominal aortic aneurysm?**
 - Plain radiograph
 - Aortic ultrasonography
 - Abdominal computed tomography (CT) scan
 - Angiography
 - Abdominal magnetic resonance imaging
- A 61-year-old man with a history of untreated atrial fibrillation presents to the emergency department with several hours of sudden-onset leg pain. On examination, the patient's left leg is found to be pale, cool, and pulseless. What is the most appropriate management option for this patient?**
 - Elevation, hydration, and bed rest
 - Fogarty catheter embolectomy
 - Heparin anticoagulation
 - Thrombolytic therapy
 - None of the above
- A 57-year-old woman presents to the emergency department with right leg numbness, tingling, and weakness 1 week after coronary angiography. On examination, there is a pulsatile nontender mass in the right groin (the side of the arterial puncture), and the patient states the mass seems to be getting bigger each day. What is this patient's most likely diagnosis?**
 - Acute arterial occlusion
 - Arteriovenous fistula
 - Expanding pseudoaneurysm
 - Femoral nerve injury after angiography
 - Infected pseudoaneurysm
- Uncomplicated, type B (distal) aortic dissections are usually treated with which of the following?**
 - Anticoagulants
 - Blood pressure control
 - Surgery
 - Intra-aortic balloon pump
 - None of the above

(turn page for answers)

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ANSWERS AND EXPLANATIONS

- (E) Pericarditis.** As an aortic dissection propagates, it can disrupt either coronary blood flow, leading to a myocardial infarction, or spinal artery blood flow, resulting in lower extremity paralysis. Proximal rupture into the pericardium can result in pericardial tamponade, and any changes in aortic root dimensions can result in aortic valve insufficiency. Pericarditis, usually inflammatory or infectious, is not a described complication of aortic dissection.
- (C) Abdominal CT scan.** Although findings on plain radiography can suggest an aortic aneurysm, it is neither sensitive nor specific and should not be obtained. Aortic ultrasonography is an excellent study to detect the presence of an abdominal aortic aneurysm, but it is inadequate for the detection of rupture. Angiography is time- and labor-intensive and has no role in a patient with potential rupture. Because contrast only goes where blood flows, a near-normal-appearing lumen may be visualized in the setting of a contained rupture with thrombus. Abdominal magnetic resonance imaging will accurately define the vascular anatomy but can be very time-consuming. In most emergency settings, CT scan is readily available, quick, can be done without contrast, and is the initial imaging procedure of choice in the setting of possible aortic rupture.
- (B) Fogarty catheter embolectomy.** The case patient likely has a limb-threatening acute embolic arterial occlusion, and the most appropriate limb-saving therapy is Fogarty catheter embolectomy. Thrombolytic therapy can be considered for a partial occlusion, but ordinarily thrombolytics will work too slow to be limb-sparing in the setting of a complete occlusion of several hours' duration. The other choices are appropriate adjunctive therapies but are by no means definitive.
- (C) Expanding pseudoaneurysm.** All of the answers are complications of a femoral artery injury, including iatrogenic injury due to angiography. However, the case describes delayed-onset symptoms and a pulsatile mass most consistent with an expanding pseudoaneurysm. An infected pseudoaneurysm, in addition to other signs of infection, would likely be tender. The onset of symptoms from acute nerve injury would have occurred much sooner, not 1 week after the procedure.
- (B) Blood pressure control.** Uncomplicated, distal aortic dissections are typically treated with blood pressure and heart rate control. Indications for surgery are persistent pain, uncontrollable blood pressure, branch artery occlusion, or signs of rupture or impending rupture. Anticoagulation would not have a role in routine management of aortic dissection. Intra-aortic balloon pump is used for cardiogenic shock but has no role in aortic dissection.

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