

1. The answer is C, Chest radiography and urinalysis.

(Marco, 18-24; Marx, 83-86)

Fever is a sign of serious illness in geriatric patients. Eighty percent of febrile illnesses can be accounted for by respiratory, urinary, or skin infections.

This patient's skin is intact without rash, so the source of her fever is most likely a respiratory tract infection or a urinary tract infection. A WBC count can be elevated, normal, or depressed in an elderly patient with a fever and is not diagnostic. Blood cultures do not provide a diagnosis in the emergency department, although they can help guide antibiotic choices for inpatient care. If a blood culture is to be ordered, samples should be drawn before antibiotics are administered. Computed tomography scanning of the abdomen and pelvis is indicated in an elderly patient with fever if there are specific signs or symptoms that localize to the abdomen or if the initial laboratory and radiology findings do not provide an adequate diagnosis.

Physicians should have a low threshold for performing diagnostic abdominal CT in elderly patients because they are less likely to have diagnostic physical findings. For example, the lack of abdominal wall musculature makes it unlikely that an elderly patient will develop abdominal guarding and rigidity, even in the context of peritonitis. Head CT and lumbar puncture are indicated if a CNS infection is suspected or if other evaluations have not identified a source of infection. The most common causes of increased confusion in febrile elderly patients are usually respiratory or urinary tract infections. Plain radiographs of the abdomen are indicated for assessment of bowel obstruction and to evaluate for free air or a foreign body. They are very unlikely to provide a diagnosis in an elderly patient with a fever.

A CT scan of the abdomen is more likely to provide a diagnostic answer.

2. The answer is B, Dilated esophagus proximal to a beaklike lower esophageal sphincter.

(Marx, 1150-1151; Tintinalli, 548-551; Wolfson, 544-546)

The patient in the question has the classic symptoms of achalasia. The expected findings of a barium swallow include a dilated esophagus proximal to a beaklike lower esophageal sphincter. Achalasia is the most common esophageal motility disorder. It results from impairment of the normal swallowing-induced relaxation of the lower esophageal sphincter. Most patients with achalasia are 20 to 40 years old and complain of chest pain and odynophagia. The symptoms occur with both solids and liquids, are made worse by lying flat, and are accompanied by regurgitation of undigested food, especially with exercising. A barium swallow quickly confirms the diagnosis and might be done in the emergency department, so the patient can then be referred to a gastroenterologist for esophageal manometry. Treatment options begin with calcium-channel blockers to relax the smooth muscle in the distal esophagus. Diltiazem and nifedipine are reported to be effective, but not verapamil. Treatment of persistent

symptoms might include endoscopic botulism toxin injections, dilation, and surgical myotomy. Diffuse ST-segment elevation and PR-interval depression are found in pericarditis, which is suggested by the positional nature of the chest pain but less likely given the pattern of this patient's symptoms in relation to food. The regurgitation of undigested food might prompt family members to suspect an eating disorder in patients with undiagnosed achalasia. Gastric inflammatory changes noted on upper endoscopy suggest gastritis, but the patient's dysphagia suggests an esophageal disorder. White matter changes suggest multiple sclerosis, which would be more likely to cause transfer dysphagia with swallowing. Transfer dysphagia results in difficulty with starting to swallow, as the food moves from the mouth to the esophagus. Liquids cause more difficulty than solids in these patients.

3.

The answer is B, Esmolol.

(Marx, 1174; Tintinalli, 443, 444, 450-453)

In a patient with acute aortic dissection without shock, typically a beta₁-blocking agent such as esmolol is used initially to reduce shear force by reducing cardiac contractility and to prevent reflex tachycardia before a vasodilator is added to reduce blood pressure. The goals of emergency department treatment of acute aortic dissection, in addition to resuscitation, are to prevent extension of the dissection, obtain early cardiothoracic or vascular surgery consultation, and control pain. To prevent extension of an aortic dissection, the shear forces on the intimal flap of the aorta must be reduced. This is achieved by controlled reduction of blood pressure and heart rate, as shear pressure is related to the rate of rise of left ventricular pressure (expressed as dp/dt). The heart rate should be reduced to a goal of 60 beats/min, or the lowest tolerated by the patient. The blood pressure should be reduced to a mean arterial pressure of 60 or systolic blood pressure of 100 to 120, or the lowest tolerated by the patient. A beta-blocker is preferred to prevent a vasodilation-induced reflex tachycardia that would increase shear pressure. Esmolol infusion is commonly used because it is easily titrated and short acting, although metoprolol or labetalol might also be considered. Sodium nitroprusside is an effective vasodilator with a short half-life and is also easily titrated but should be used after initial medications are administered to reduce heart rate. It is more potent than nitroglycerin for arterial vasodilation. Labetalol reduces cardiac contractility, heart rate, and arterial blood pressure, but its immediate effects on blood pressure are not as potent or predictable as those of sodium nitroprusside. Diltiazem, a calcium-channel blocker, can be used to reduce blood pressure and contractility in patients in whom beta-blockers are contraindicated, but it is not the first choice for therapy.

4. The answer is D, Treatment for significant cases includes oral steroids.

(Auerbach, 1267-1275; Marx, 1543)

The patient in this question is suffering from an allergic phytocontact dermatitis, likely from one of the toxicodendron species such as poison ivy, poison oak, or sumac. Systemic steroids are often needed for significant cases, and a long, slow taper to prevent disease rebound is recommended. The plants have different geographic locations: poison ivy is found east of the Rockies, poison oak is found west of the Rockies, and poison sumac is found in the southeast. But all contain similar urashols found in the colorless or slightly yellow sap that turns black on exposure to air. Previous sensitization does not prevent recurrence but does determine when the clinical manifestations occur after resin exposure (1-2 days for previous sensitization, 10-14 days otherwise). Dermatitis occurs only where the resin has contacted the skin, which explains why linear lesions are typical (as in other allergic contact dermatoses). The thickness of the stratum corneum determines the degree of resin penetration and subsequent manifestations; this explains why the palms are typically spared and why the eyelids can develop severe swelling. Pruritus can precede the rash, which can progress from initial well-demarcated patches of erythema to papules. Vesicles and bullae are also characteristic, as is crusting. The rash itself, including fluid from the bullae, does not contain the urashols and is therefore not contagious to others and does not spread the rash. The urashols can remain stable on inanimate objects such as clothes, making reexposure possible. But discarding the clothes is not necessary, as both washing and bleaching can inactivate the urashols. Administration of antihistamines and topical steroids is helpful in the treatment of intense pruritus. Various topical agents such as calamine lotion, aluminum acetate, cool compresses, nonscalding hot water, and oatmeal baths can also be used for comfort.

5.

The answer is D, Hypotension fails to respond to standard resuscitation.

(Marx, 1671-1675; Wolfson, 1030-1033)

Most adrenal crises occur in patients with chronic adrenal insufficiency who have an illness or stress that results in inadequate cortisol production; hypotension out of proportion to the severity of that underlying illness and hypotension refractory to standard resuscitation are important clinical clues to adrenal crisis. Appropriate management of adrenal insufficiency includes treating the precipitating illness, aggressive fluid and pressor resuscitation, and correction of inadequate cortisol by administration of hydrocortisone or dexamethasone. The adrenal gland is composed of the cortex (which produces aldosterone, androgens, and cortisol) and the medulla (which produces catecholamines) and is in a feedback loop with the hypothalamic-pituitary axis. Adrenal insufficiency can be both primary