

The Respiratory System

The questions in this chapter constitute a review of the following chapters in *Family Medicine: Principles and Practice, Fifth Edition*:

- Obstructive Airway Disease (Chapter 83)
- Pulmonary Infections (Chapter 84)
- Lung Cancer (Chapter 85)
- Selected Disorders of the Respiratory System (Chapter 86)

DIRECTIONS (Items 19.1 through 19.18): Each of the questions or incomplete statements in this section is followed by five suggested answers or completions. Select the ONE that is BEST in each case.

19.1 The patient is an 18-year-old white man who has had a few episodes of expiratory wheezing over the past year, and occasionally has wheezing during exercise. In addition to avoidance therapy, the medication of choice (if medication is needed) would be

- (A) beta₂-adrenergic agonist
- (B) steroid inhaler
- (C) oral steroids
- (D) oral theophylline
- (E) cromolyn sodium

Answer: (A). Beta₂s are the treatment of choice for episodic or mild asthmatics and for exercise-induced bronchospasm. Once the need is established for continual usage, as for moderate and severe asthmatics, some authorities use these agents as first-line treatment whereas others reserve their use for rescue efforts, preferring to use anti-inflammatory drugs first. Certainly, every patient with significant obstructive disease should always have this medication on hand. (Chapter 83, Page 730.)

19.2 You have just accepted a position with an inner-city medical center in an area with a relatively high acquired immunodeficiency syndrome (AIDS) prevalence. In this setting, the leading cause of community-acquired pneumonia (CAP) hospital admissions is likely to be

- (A) *Streptococcus pneumoniae*
- (B) *Mycoplasma pneumoniae*
- (C) *Chlamydia pneumoniae*
- (D) *Haemophilus influenzae*
- (E) *Pneumocystis carinii*

Answer: (E). If the AIDS prevalence is one or more per 1,000 hospital discharges, *P. carinii* pneumonia can be the leading cause of CAP hospital admissions. (Chapter 84, Page 734.)

19.3 In a patient with pneumonia, which of the following five symptoms is *most* likely to be present?

- (A) cough
- (B) dyspnea
- (C) sputum production
- (D) chest pain
- (E) hemoptysis

Answer: (A). The signs and symptoms of pneumonia are well recognized. In a study of 453 patients with pneumonia, cough was present in 88%, dyspnea in 71%, sputum production in 69%, chest pain in 64%, hemoptysis in 17%, and confusion in 17%. (Chapter 84, Page 734.)

19.4 The patient is a 68-year-old white male smoker with fever, left-sided chest pain, shortness of breath, and rusty sputum. The chest radiograph confirms the

presence of a left lower lobe pneumonia. Gram stain of the sputum shows gram-positive diplococci. The treatment of choice for this patient is

- (A) a macrolide
- (B) a tetracycline
- (C) a cephalosporin
- (D) penicillin
- (E) vancomycin

Answer: (D). If the Gram stain shows the classic picture of pneumococci with abundant gram-positive lancet-shaped diplococci, both extracellularly and intracellularly, penicillin is the treatment of choice if resistance is not an issue. (*Chapter 84, Page 736.*)

19.5 The laboratory finding characteristic of patients with *Mycoplasma pneumoniae* is

- (A) an elevated sedimentation rate
- (B) an elevated cold agglutinin titer
- (C) leukopenia
- (D) eosinophilia
- (E) lymphocytosis

Answer: (B). The most common laboratory finding with *Mycoplasma pneumoniae* patients is an elevated cold agglutinin titer, seen in up to 75%. This test, however, also has many false-positives, and cold agglutinins are also present in up to 25% of patients with a viral pneumonia. (*Chapter 84, Page 738.*)

19.6 Legionnaire's disease is most likely to be contracted by

- (A) ingesting contaminated food
- (B) inhalation of aerosolized water particles
- (C) fecal contamination
- (D) exposure to droplet infection spread by coughing
- (E) exposure to an infected dog or cat

Answer: (B). *Legionella* bacteria are found in water, and institutional water systems (e.g., cooling towers, condensers, showers, nebulizers) are an important source for infection. Transmission seems to be exclusively from the environment, not person to person. Inhalation or ingestion of aerosolized particles is a likely means of lung infection. (*Chapter 84, Page 739.*)

19.7 In the United States, histoplasmosis is most likely to be found in which of the following areas?

- (A) tropical areas of south Florida
- (B) the Southwest United States including the San Joaquin Valley

- (C) the Pacific Northwest
- (D) the Rocky Mountain region, especially in the higher elevations
- (E) the Ohio and Mississippi River valleys

Answer: (E). Histoplasmosis is caused by a fungus found in moist soil throughout the temperate zones of the world (in the United States especially in the Ohio and Mississippi River valleys). (*Chapter 84, Page 739.*)

19.8 The patient is a 43-year-old farmer who until recently lived in northwest Ohio. He has had a mild recurrent cough for 6 to 8 months. His histoplasmosis skin test is positive, and the chest radiograph shows bilateral patchy lower lobe densities with some hilar lymph node enlargement. This patient should be treated with

- (A) erythromycin
- (B) rifampin
- (C) ciprofloxacin
- (D) itraconazole
- (E) no treatment is necessary

Answer: (E). In a normal host, no treatment is usually needed. Therapy of life-threatening chronic or disseminated histoplasmosis requires high-dose intravenous amphotericin given over 8 to 12 weeks. In patients with less life-threatening situations, such as those with progressive disseminated histoplasmosis, or AIDS patients needing chronic suppressive therapy, itraconazole is the drug of choice. (*Chapter 84, Page 740.*)

19.9 The term *valley fever* is a synonym for

- (A) tuberculosis
- (B) coccidioidomycosis
- (C) byssinosis
- (D) *Pneumocystis carinii* pneumonia
- (E) histoplasmosis

Answer: (B). *Coccidioides*, a fungus, is found in the soil of the semiarid Southwest. Dust storms, outdoor recreation, and new construction are associated with an increased risk of infection. The primary infection, which results from inhaling the arthrospore, is usually asymptomatic, although up to 40% have symptoms of acute "valley fever" with cough, low-grade fever, and often arthralgias or erythema nodosum. (*Chapter 84, Page 740.*)

19.10 Most active tuberculosis (TB) is reactivation of an earlier primary infection. Which of the following is most likely to cause reactivation to occur?

- (A) Parkinson's disease
- (B) *Mycoplasma pneumoniae*
- (C) emotional stress
- (D) AIDS
- (E) Type II diabetes mellitus under good control

Answer: (D). Between 70 and 90% of active TB is reactivation, that is, a breakdown of these foci years later. Why it happens is poorly understood. Risk factors for active TB include recent weight loss (associated with malnutrition or alcoholism), poorly controlled diabetes, and immunosuppression (from steroids, AIDS, or cancer). Human immunodeficiency virus (HIV) has been called the most potent activator of TB ever detected. (*Chapter 84, Page 740.*)

19.11 The leading concern in the use of INH for the chemoprophylaxis of tuberculosis is

- (A) fatigue
- (B) drug-induced renal disease
- (C) drug-induced leukopenia
- (D) drug-induced hepatitis
- (E) vasospasm causing angina pectoris

Answer: (D). The most common concern about INH is drug-induced hepatitis. The overall incidence is about 1%, although it is age-related. In persons younger than age 20, hepatitis is rare, whereas in those older than age 50 it occurs in more than 2%. (*Chapter 84, Page 742.*)

19.12 Carcinogens found in cigarette smoke include all EXCEPT which of the following?

- (A) benzopyrene
- (B) cadmium
- (C) hydrazine
- (D) vinyl chloride
- (E) nicotine

Answer: (E). Cigarette smoke with its identified carcinogens, such as benzopyrene, dibenzanthracene, nitrosamines, nickel, cadmium, hydrazine, vinyl chloride, and others, account for 80% of lung cancer in men and 75% of lung cancer in women. Nicotine is not considered carcinogenic but, rather, a highly addictive substance that leads to continued exposure to cigarette carcinogens. (*Chapter 85, Page 746.*)

19.13 The patient is a 58-year-old with a 60 pack/year history of smoking. He has a 6-month history of hemoptysis, cough, and dyspnea. The patient has shoulder pain radiating down the left arm. The chest

radiograph shows a tumor, 6 cm in diameter, in the apex of the left lung. This patient appears to have

- (A) squamous cell tumor of the lung
- (B) a small-cell carcinoma of the lung
- (C) a mediastinal tumor
- (D) a Pancoast tumor of the lung
- (E) sarcoidosis

Answer: (D). Pancoast tumors originate in the apex of the lung and present with shoulder pain that can radiate down the arm, caused by invasion of the brachial plexus. Routine chest radiographs are often normal, and apical lordotic views of the lung or a computed tomography scan is often needed to detect Pancoast tumors. (*Chapter 85, Page 748.*)

19.14 The patient is a 72-year-old white male retired shipyard worker with a long history of smoking one pack of cigarettes daily. For the past 5 months, he has had shortness of breath and some swelling of the right arm. You note some venous distension in the neck, distension of veins in the chest, and a hint of cyanosis. This patient is most likely to have which of the following diagnoses?

- (A) pulmonary embolus from a thrombosis in the lower extremity
- (B) lung cancer involving the mediastinum
- (C) syphilitic aortitis
- (D) primary pulmonary hypertension
- (E) pulmonary TB

Answer: (B). Blood flow through the superior vena cava can be obstructed by bulky tumors in the mediastinum, producing the superior vena cava syndrome. These patients can have venous distension in the neck (66%), dyspnea (63%), distension of the veins on the chest wall (54%), facial edema (46%), cyanosis (20%), and arm swelling (18%). Of all patients who present with the superior vena cava syndrome, 65% have lung cancer. (*Chapter 85, Page 748.*)

19.15 The patient is a 56-year-old white man retired tunnel worker whom you treated in the office yesterday for an acute left lower lobe pneumonia. This morning, the patient went to the emergency department. The nurse at the emergency department calls and reports that the patient has dyspnea and a pulse of 106. Blood gases show a decreased PO₂ and a normal PCO₂. She administered oxygen by mask, and although improving initially, the patient has become more dyspneic. Based on this telephone conversation, this patient appears to have

- (A) acute pulmonary embolism
- (B) sepsis
- (C) acute pneumothorax
- (D) acute pneumoconiosis
- (E) acute respiratory distress syndrome (ARDS)

Answer: (E). ARDS should be considered when any patient with one or more known causative factors develops dyspnea and tachypnea. Blood gases show decreased PO_2 , with the PCO_2 normal or decreased. After initially responding to supplemental O_2 , the patient becomes more dyspneic, and the hypoxia can no longer be corrected by giving O_2 . Rales and bilateral interstitial infiltrates develop. At this point the patient requires ventilator management in an intensive care unit setting with Swan-Ganz monitoring and involvement of a pulmonary or intensivist consultant if available. (*Chapter 86, Page 753.*)

19.16 Most pulmonary emboli originate from

- (A) deep veins of the calf
- (B) superficial veins of the lower extremity
- (C) deep veins of the thigh and pelvis
- (D) deep veins of the upper extremity
- (E) right atrial thrombi

Answer: (C). Most pulmonary emboli originate from the deep veins of the thigh and pelvis. Thrombi usually develop from vein bifurcations or valve cusps; they may also arise in the calf but rarely embolize. Deep vein thrombosis (DVT) may arise in the upper extremity, with most cases seen in patients with central venous catheters, although spontaneous DVT of the upper extremity does occur. Right atrial thrombus during atrial fibrillation is also a potential source. (*Chapter 86, Page 754.*)

19.17 The patient is a 17-year-old white boy who suffered a cramp while swimming in a lake and was pulled to shore, where he briefly received cardiopulmonary resuscitation. He has been brought to the emergency department, where he is alert and coherent. He complains of severe left-sided chest pain and shortness of breath. The respiratory rate is 42, and his pulse rate is 112 bpm. Based on this evidence, you suspect that this patient may have

- (A) aspiration of lake water
- (B) anoxia-induced angina pectoris
- (C) flail chest
- (D) ARDS
- (E) traumatic pneumothorax

Answer: (E). A traumatic pneumothorax can result from penetrating or nonpenetrating chest trauma as

well as from such invasive procedures as bronchoscopy, thoracentesis, central line placement, mechanical ventilation, and cardiopulmonary resuscitation. (*Chapter 86, Page 756.*)

19.18 The patient is a 70-year-old white woman with a cough, shortness of breath, and a right pleural effusion. On tapping the effusion, you find pleural fluid characteristics of a transudative effusion. The most common cause of a transudative effusion is

- (A) pulmonary embolus
- (B) neoplasm
- (C) collagen vascular disease
- (D) congestive heart failure
- (E) acute pancreatitis

Answer: (D). The major causes of a transudative effusion are congestive heart failure (most common), cirrhosis, nephrotic syndrome, and hypoalbuminemia. The most common groups causing exudative effusions are infection (most commonly bacterial pneumonia and tuberculosis), pulmonary embolism, neoplasms, collagen vascular diseases, pancreatitis, and other intra-abdominal diseases. (*Chapter 86, Page 756.*)

DIRECTIONS (Items 19.19 through 19.34): Each of the items in this section is a multiple true–false problem that consists of a stem and four lettered options. Indicate whether each of the four options is TRUE or FALSE.

19.19 While performing pulmonary function testing for the diagnosis of asthma, it is sometimes useful to use provocative testing. Stimulators that may be used for provocative testing include which of the following?

- (A) exercise
- (B) terbutaline
- (C) histamine
- (D) methacholine

Answer: (A-True, B-False, C-True, D-True). With asthma, a useful test is to observe the change in FEV_1 following treatment with a bronchodilator. An increase of 15% is indicative of reversible airway disease. Three stimulators—exercise, histamine, and methacholine—may be used for provocative testing. A decrease in FEV_1 of 20% is considered positive. (*Chapter 83, Page 727.*)

19.20 Cromolyn is often used as a prophylactic agent in asthma; it is an anti-inflammatory drug with an almost complete lack of side effects. True statements regarding cromolyn include which of the following?

- (A) The drug is available in syrup, tablet, and injectable forms.
- (B) The initial dosage frequency is four times daily.
- (C) This prophylactic medication should be discontinued during an acute episode.
- (D) Cromolyn may be useful in the prevention of exercise-induced bronchospasm.

Answer: (A-False, B-True, C-False, D-True). Cromolyn (Intal) is available for multiple dose inhaler or nebulizer. Its onset of action can be as long as 1 to 2 months. Dosage is two inhalations q.i.d.; tapering to less frequent dosage can be attempted. Once in usage this medication should be used throughout an acute episode so as not to lose the prophylaxis. Along with beta₂s and inhaled steroids, cromolyn is useful for exercise-induced bronchospasm. (*Chapter 83, Page 731.*)

19.21 The patient is a 23-year-old primigravida at 15 weeks' gestation. She has asthma that antedated her pregnancy and now has expiratory wheezing and cough. In the setting of asthma during pregnancy, which of the following medications are generally considered safe for use?

- (A) theophylline
- (B) beta₂-adrenergic agonists
- (C) iodides
- (D) cromolyn

Answer: (A-True, B-True, C-False, D-True). Pregnancy is complicated by asthma about 1% of the time, with a potentially large risk to the fetus if hypoxia develops. The use of theophylline, beta₂s, cromolyn, and steroids is generally considered safe. Some antibiotics and decongestants, live virus vaccines, and iodides must be avoided. (*Chapter 83, Page 732.*)

19.22 True statements regarding asthma include which of the following?

- (A) The disease may cause death.
- (B) Preventable hospitalization may occur because of the patient's or family's inability to recognize the severity of an attack.
- (C) Preventable death may occur because of the physician's inadequate assessment of the severity of an attack.
- (D) Peak flow meters have not been useful as an objective guide to the severity of an asthma attack.

Answer: (A-True, B-True, C-True, D-False). Asthma is usually viewed as a nonfatal disease, but it does carry

the potential for death. Most studies show that preventable deaths and hospitalizations have been the result of delayed treatment due primarily to two factors: the patient's or family's inability to recognize the severity of an attack, or the physician's poor assessment of the severity of an attack. Suggestions for prevention include frequent use of peak flow meters as an objective guide to severity, establishing effective maintenance therapy, and emphasizing patient and family education. (*Chapter 83, Page 732.*)

19.23 True statements regarding the use of pneumococcal vaccine include which of the following?

- (A) The vaccine should be recommended to patients with chronic obstructive pulmonary disease (COPD).
- (B) Because of the immunodeficiency, pneumococcal vaccine is contraindicated in HIV-positive patients.
- (C) The vaccine is indicated in patients who have undergone splenectomy.
- (D) In very elderly patients, revaccination is advisable every 6 to 7 years.

Answer: (A-True, B-False, C-True, D-True). The use of pneumococcal vaccine in the elderly or those with underlying conditions (e.g., COPD, transplants, HIV-positive, splenectomy) probably reduces the chances of pneumococcal pneumonia by 60 to 80%. It is less effective in the very old and the institutionalized, in whom revaccination every 6 to 7 years is indicated. (*Chapter 84, Page 737.*)

19.24 Legionnaire's disease often presents like a bacterial pneumonia with a high fever, shaking chills, and a minimally productive cough. The physical examination is often similar to that for other pneumonias. Some features that may be helpful in the diagnosis of Legionnaire's disease include which of the following?

- (A) Leukopenia is common.
- (B) Hyponatremia may occur in more than half of all patients.
- (C) The chest radiography may show a patchy infiltrate that progresses to involve contiguous lobes.
- (D) Pleural effusions are rare.

Answer: (A-False, B-True, C-True, D-False). A high index of suspicion is needed, as few findings are characteristic. Leukocytosis (up to 30,000/ml) is common, as is hyponatremia (seen in more than 50% of patients). The chest radiograph typically shows a patchy infiltrate

that rapidly progresses to involve contiguous lobes. Pleural effusions are common. (*Chapter 84, Page 739.*)

19.25 Common symptoms of active pulmonary TB include

- (A) progressive cough, productive of mucopurulent sputum
- (B) hemoptysis
- (C) malaise, low-grade fever, and weight loss
- (D) dyspnea and chest pain

Answer: (A-True, B-False, C-True, D-False). Pulmonary TB usually presents with a progressive cough, productive of mucopurulent sputum. Hemoptysis is not common but when present can be massive. Malaise, low-grade fever, and weight loss are often present. Dyspnea and chest pain are uncommon. (*Chapter 84, Page 741.*)

19.26 True statements regarding the TB skin test include which of the following?

- (A) The recommended test is the Mantoux test using 0.1 ml of PPD-T injected subcutaneously.
- (B) Multiple puncture tests are recommended for mass screening.
- (C) The TB skin test is positive in 90 to 95% of AIDS patients who have TB.
- (D) All patients with a positive TB skin test should have a chest radiograph.

Answer: (A-True, B-False, C-False, D-True). The TB skin test is one of the oldest diagnostic tests still in use today, having been initially developed by Koch more than 100 years ago. The Mantoux test is recommended using 0.1 ml of PPD-T injected subcutaneously, with the result (induration, not erythema) read in 48 to 72 hours. Multiple-puncture tests are not recommended. A positive reaction indicates past exposure (at least 2 to 3 months ago). Unfortunately, it is often negative in the elderly and those with HIV. (Up to 60% of patients with AIDS and TB have a false-negative test.) All patients with a positive test should have a chest radiograph to rule out active disease. (*Chapter 84, Page 742.*)

19.27 The most common pulmonary infection seen in AIDS patients is *Pneumocystis carinii* pneumonia. The drug of choice for the management of *Pneumocystis carinii* pneumonia is

- (A) prednisone
- (B) trimethoprim-sulfamethoxazole (TMP-SMX)

- (C) dapsonsone
- (D) clindamycin
- (E) primaquine

Answer: (B). TMP-SMX is the drug of choice. It can be given orally or intravenously, but the latter route is usually chosen for the first episode because of the potential for acute deterioration. (*Chapter 84, Page 744.*)

19.28 The patient is a 74-year-old white woman with a long history of cigarette smoking. Four months ago, you diagnosed lung cancer, and she comes today with signs and symptoms of hyponatremia. True statements regarding hyponatremia in lung cancer patients include which of the following?

- (A) The most likely cancer type is adenocarcinoma.
- (B) Hyponatremia is due to inappropriate secretion of antidiuretic hormone (SIADH).
- (C) The initial treatment is administration of fluids sufficient to reverse the abnormality.
- (D) Demeclocycline may help reverse the hyponatremia.

Answer: (A-False, B-True, C-False, D-True). Several paraneoplastic syndromes can be seen in lung cancer patients. Small-cell carcinoma can cause hyponatremia due to SIADH. The initial treatment is fluid restriction. Demeclocycline, which causes a mild nephrogenic diabetes insipidus, can also help to reverse hyponatremia. The SIADH often resolves as the tumor responds to chemotherapy and radiation therapy. (*Chapter 85, Page 749.*)

19.29 The patient is a 68-year-old white man with metastatic non-small-cell lung carcinoma (NSCLC). You have found him to have a high serum calcium level. True statements regarding hypercalcemia as a complication of metastatic NSCLC include which of the following?

- (A) The elevated calcium may be due to a paraneoplastic phenomenon.
- (B) The use of intravenous saline and furosemide (Lasix) may be helpful in treatment.
- (C) Pamidronate (Aredia), an intravenous diphosphonate, has been found to increase serum calcium levels.
- (D) Mithramycin may be effective but has greater toxicity than pamidronate.

Answer: (A-True, B-True, C-False, D-True). Hypercalcemia is a frequent complication of metastatic NSCLC. It may be due to widespread bone metastases, but it

also can be a paraneoplastic phenomenon caused by secretion of substances that act like parathyroid hormone. In addition to intravenous saline and furosemide (Lasix), hypercalcemia can be readily treated with one dose of pamidronate (Aredia), an intravenous diphosphonate. Calcitonin, gallium nitrate, and mithramycin are also effective treatments for hypercalcemia, but these agents have more toxicity than pamidronate. (*Chapter 85, Page 751.*)

19.30 ARDS is characterized by which of the following findings?

- (A) left heart failure
- (B) severe hypoxemia
- (C) diffuse pulmonary infiltrates
- (D) poor lung compliance

Answer: (A-False, B-True, C-True, D-True). First described by Ashbau et al. in 1967 as ARDS, this condition of acute respiratory failure is marked by severe hypoxemia, diffuse pulmonary infiltrates, poor lung compliance, and the absence of left heart failure. (*Chapter 86, Page 752.*)

19.31 True statements regarding the clinical diagnosis of pulmonary emboli include which of the following?

- (A) The most common symptoms include dyspnea, pleuritic pain, apprehension, and cough.
- (B) The most common signs of pulmonary embolus are tachypnea, rales, increased P₂ heart sound, tachycardia, and fever.
- (C) Hemoptysis occurs in about 90% of patients.
- (D) Clinically evident lower extremity thrombophlebitis is found in most patients.

Answer: (A-True, B-True, C-False, D-False). Signs and symptoms of pulmonary emboli are inconsistent, and no finding or combination of findings is diagnostic. The most common symptoms are dyspnea, pleuritic pain, apprehension, and cough. Hemoptysis occurs in about one-third of patients. The most common signs are tachypnea, rales, increased P₂ heart sound, tachycardia, and fever. Only one-third of patients have clinically evident lower extremity phlebitis. (*Chapter 86, Page 754.*)

19.32 Pulmonary angiography or pulmonary-ventilation perfusion scanning is important in establishing the diagnosis of pulmonary embolism. Pulmonary angiography should be the initial test order in which of the following clinical settings?

- (A) patients at high risk of complications from anticoagulation
- (B) patients suspected of minimal pulmonary embolism
- (C) patients in whom thrombolytic therapy might be undertaken
- (D) all patients suspected of pulmonary embolus

Answer: (A-True, B-True, C-False, D-False). Pulmonary ventilation-perfusion scanning or pulmonary angiography must be performed to establish the diagnosis of pulmonary embolism. Angiography should be used at the outset in patients at high risk of complications from anticoagulation, when massive pulmonary embolism is suspected, or when thrombolytic therapy might be undertaken. Ventilation-perfusion scanning may be used initially in other patients, but results must be interpreted carefully. (*Chapter 86, Page 754.*)

19.33 Pulmonary hypertension may develop in the setting of which of the following conditions?

- (A) athletic training
- (B) surgical loss of pulmonary tissue
- (C) chronic atrial fibrillation
- (D) chronic obstructive lung disease

Answer: (A-False, B-True, C-False, D-True). Pulmonary hypertension develops when local physiologic conditions such as hypoxia and acidosis occur, leading to vasoconstriction and elevated pulmonary pressure. These and other mechanisms may play a role in the development of pulmonary hypertension secondary to other conditions, including surgical loss of pulmonary tissues, ventricular septal defect, left heart failure, obesity-hypoventilation syndrome, mitral valve disease, chronic obstructive lung disease, bronchial asthma, chronic thromboembolism, and interstitial fibrosis. (*Chapter 86, Page 755.*)

19.34 Up to 95% of patients with pulmonary sarcoidosis have some abnormality on the chest radiogram. The characteristic abnormalities are

- (A) cavitory disease in the lung apex
- (B) bilateral hilar lymphadenopathy
- (C) pleural effusion
- (D) diffuse infiltrates

Answer: (A-False, B-True, C-False, D-True). The most common radiographic findings are bilateral hilar lymphadenopathy and diffuse infiltrates. (*Chapter 86, Page 758.*)