

chemotherapy and may resolve spontaneously. Concurrent glucocorticoid administration may reduce the duration of fever and/or chest pain but is not of proven benefit.

Tuberculous empyema is a less common complication of pulmonary TB. It is usually the result of the rupture of a cavity, with spillage of a large number of organisms into the pleural space. This process may create a bronchopleural fistula with evident air in the pleural space. CXR shows hydropneumothorax with an air-fluid level. The pleural fluid is purulent and thick and contains large numbers of lymphocytes. Acid-fast smears and mycobacterial cultures are often positive. Surgical drainage is usually required as an adjunct to chemotherapy. Tuberculous empyema may result in severe pleural fibrosis and restrictive lung disease. Removal of the thickened visceral pleura (*decortication*) is occasionally necessary to improve lung function.

TB of the Upper Airways Nearly always a complication of advanced cavitary pulmonary TB, TB of the upper airways may involve the larynx, pharynx, and epiglottis. Symptoms include hoarseness, dysphonia, and dysphagia in addition to chronic productive cough. Findings depend on the site of involvement, and ulcerations may be seen on laryngoscopy. Acid-fast smear of the sputum is often positive, but biopsy may be necessary in some cases to establish the diagnosis. Carcinoma of the larynx may have similar features but is usually painless.

Genitourinary TB Genitourinary TB, which accounts for ~10–15% of all extrapulmonary cases in the United States and elsewhere, may involve any portion of the genitourinary tract. Clinical manifestations are cryptic and protean. Patients may be asymptomatic and their disease discovered only after destructive lesions of the kidneys have developed. Symptoms are often nonspecific, and include those of urinary tract infection with frequency, dysuria, nocturia and hematuria, and abdominal or flank pain. Without a high index of suspicion, this form of TB may result in delayed diagnosis with irreversible organ damage. Up to 75% of patients have abnormalities on CXR suggesting previous or concomitant pulmonary disease.