A 42-year-old heroin addict was hospitalized complaining of severe right-sided pleuritic chest pain, a 12 lb weight loss, and low grade fever. Mild right-sided pleurisy had occurred intermittently during the preceding two years. She was a heavy cigarette smoker, and had a chronic nonproductive cough.

Initial workup revealed an exudative right pleural effusion containing 6,000 WBC/cu mm with 40 percent polymorphonuclear and 60 percent mononuclear cells. Cytology, gram stain, acid-fast smear, and both aerobic and anaerobic cultures of the pleural fluid were negative. Bronchoscopy showed patent bronchi. Washings and brushings from the right middle lobe were negative for tumor cells, fungi, and tubercle bacilli. Her admitting chest roentgenograms are shown in Figures 1 and 2.
Diagnosis: Pulmonary actinomycosis, right middle lobe

The posteroanterior chest roentgenogram (Fig 1) shows a mass obliterating the silhouette of the right heart border and a small right pleural effusion. The lateral chest film (Fig 2) demonstrates the mass with associated stellate stranding along its margins.

Thoracotomy revealed a firm mass in the right middle lobe that extended to the pericardial and pleural surfaces. Right middle lobectomy was performed. Grossly, the right middle lobe contained a centrally situated mass extending medially to an area of fibrous pleuropericardial adhesion. Section of the mass revealed a 5 cm greenish-gray nodule studded with minute white and yellow flecks (Fig 3). A diagnosis of actinomycosis was made when pathologic examination disclosed sulphur granules and microabscesses containing gram-positive filamentous rods (Fig 4). Aerobic and anaerobic cultures of the resected lung tissue showed no growth. Birefringent particles consistent with cotton fibers were identified microscopically, presumably related to the narcotic injections. The patient was treated with penicillin and has done well.

The classic description of thoracic actinomycosis includes a parenchymal infiltrate with extension to the chest wall and erosion of the adjacent ribs. It is more common, however, for thoracic actinomycosis to present as a mass lesion with pleural disease. Flynn and Felson,1 in a study of 15 patients with pulmonary actinomycosis, found pleural disease in 12 and a mass lesion in six. They described stranding of the pleura in several cases and considered it characteristic of pleural disease in actinomycosis.1 Typical of actinomycosis is the extension of the inflammatory process across the interlobar fissure and pleural and pericardial surfaces. Other articles report that pulmonary actinomycosis frequently presents as a pseudo-tumor with a mass lesion on chest x-ray examination and symptoms of a chronic illness.2,3

The right middle lobe is an unusual location for pulmonary actinomycosis, probably because aspiration into this area of the lung is less common. Actinomyces are part of the oral flora in some individuals and many consider thoracic actinomycosis to be a result of aspiration of the oral flora into dependent lung zones.4 Our patient did have poor dentition as well as episodes of unconsciousness from the chronic heroin addiction.

References