TABLE 17-1 MANIFESTATIONS OF INTERSTITIAL LUNG DISEASE—cont'd

DISEASE	PHYSICAL EXAMINATION	RADIOGRAPHS	LABORATORY FINDINGS	HISTOLOGIC FINDINGS
Lymphangioleiomyomatosis	Dyspnea, cough, chest pain Decreased breath sounds or rales Hemoptysis, ascites	Spontaneous pneumothorax Pleural effusions Reticulonodular infiltrate Miliary pattern Honeycombing Hyperinflation Diffuse, small, thin-walled cysts on HRCT	Obstructive and/or restrictive PFTs Chylous pleural effusions Chylous ascites	HMB-45–positive immunostaining Atypical smooth muscle cell proliferation around bronchovascular bundles
COP	Fever, chills, malaise, fatigue, cough, dyspnea on exertion, weight loss	Peripheral patchy infiltrates, occasionally migratory CT: patchy consolidation, ground-glass opacities, small nodules	Restrictive and occasionally obstructive PFTs for smokers	Patchy peribronchiolar distribution Foamy macrophages in alveolar spaces Intraluminal buds of granulation tissue

AIP, Acute interstitial pneumonia; BAL, bronchoalveolar lavage; BOOP, bronchiolitis obliterans and organizing pneumonia; COP, cryptogenic organizing pneumonia; CT, computed tomography; DIP, desquamative interstitial pneumonia; DLCO, diffusing capacity of the lung for carbon monoxide; HRCT, high-resolution computed tomography; ILD, interstitial lung disease; IPF, idiopathic pulmonary fibrosis; LIP, lymphoid interstitial pneumonia; NSIP, nonspecific interstitial pneumonia; PFT, pulmonary function test; PMF, progressive massive fibrosis; RB, respiratory bronchiolitis; RNP, anti-ribonucleoprotein antibodies; UIP, usual interstitial.

"specific form of chronic, progressive fibrosing interstitial pneumonia of unknown cause, occurring primarily in older adults, limited to the lungs, and associated with the histopathologic and/or radiologic pattern of usual interstitial pneumonitis."

Although initially thought to be a rare disease, IPF is now considered one of the most common ILDs, with a prevalence in some populations of up to 29 cases per 100,000 people; the prevalence is much higher among patients older than 70 years. Among most patients with IPF, the disease is sporadic. However, IPF has been found in members of certain families and is called *familial IPF,* indicating that genetic alterations predispose some patients to this illness. Genetic abnormalities associated with familial IPF include abnormalities of the telomerase complex and surfactant proteins.

The disease is idiopathic, but risk factors include cigarette smoking and possibly gastroesophageal reflux disease. Many environmental, occupational, and infectious agents can cause lung fibrosis, including asbestos, silica, and tuberculosis. Distinguishing IPF from other lung disorders is important because of the implications for prognosis and therapy.

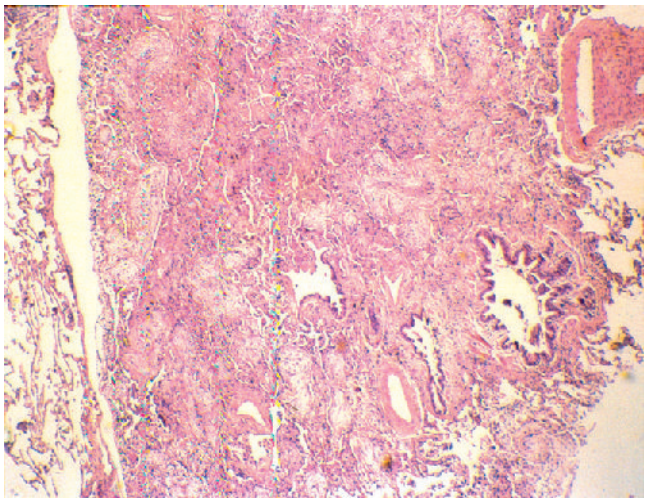

FIGURE 17-3 Pulmonary fibrosis in idiopathic pulmonary fibrosis with usual interstitial pneumonia pathology that is adjacent to normal lung parenchyma. (Courtesy Dr. Charles Kuhn.)

Pathology

The underlying histopathologic pattern found in the lungs of patients with IPF is called *usual interstitial pneumonia* (UIP). This histologic pattern shows areas of scar tissue deposition and honeycombing interspersed with areas with relatively normal alveolar structures, resulting in a heterogeneous pattern on microscopy (Fig. 17-3). An interesting pathologic feature is the finding of fibroblastic foci, which are areas in which fibroblasts accumulate. They are thought to be sites of disease activity.

The UIP pattern can accompany other disorders (e.g., connective tissue–related ILD in rheumatoid arthritis, asbestosis). The diagnosis of IPF depends on a clinical, radiographic, and histologic picture that includes the syndrome of ILD in the absence of an obvious cause and a histologic manifestation consistent with UIP.

Clinical Presentation

IPF is characterized by progressive fibrosis of the lungs, resulting in nonproductive cough and shortness of breath that worsens with exertion and ultimately causes hypoxemic respiratory failure. The typical patient with IPF is older than 50 years, and the symptoms frequently develop 1 to 2 years before a diagnosis is confirmed.

Physical examination often reveals inspiratory crackles in the bases of both lungs, indicating the predominant site of scarring. Clubbing may exist, but extrapulmonary findings such as rash or joint arthritis are absent. With increased connective tissue deposition, the lung becomes stiff as evidenced by decreased compliance. Pulmonary function tests show decreased lung volumes consistent with a restrictive process, and the DLCO is reduced. Impaired oxygenation in IPF, initially with exercise and later at rest, often requires long-term oxygen supplementation.

The chest radiograph shows reticular infiltrates that are most predominant at the bases and periphery of the lungs. HRCT allows better visualization of the lung and is useful in evaluating the extent of disease. It delineates the areas of fibrosis and provides information about other structures in the chest. The classic HRCT findings of IPF are bilateral reticulonodular infiltrates, which are more pronounced at the lung bases and have