

# MYCOPLASMA PNEUMONIAE INFORMATION

TABLE 26-3

Characteristics of *Mycoplasma pneumoniae*

Identification	Normal Habitat	Pathogenic Potential
Grows best under aerobic conditions; with colonies visible in 5 to 10 days; growth inhibited by specific antiserum	Human beings; present in the respiratory tract many weeks following infection	Common cause of pneumonia which is usually mild and self-limiting

FIGURE 12-20  
Colonies of *Mycoplasma pneumoniae*. Note the dense central portion characteristic of most mycoplasma colonies. (Courtesy of G. Kenny and F. Schoenknecht.)

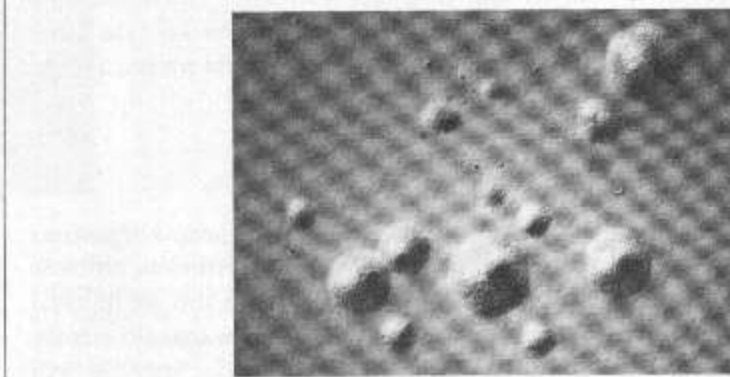


FIGURE 26-2  
Electron micrograph showing attachment of *Mycoplasma pneumoniae* to respiratory membranes. Notice the distinctive appearance of the tips of the mycoplasmas adjacent to host membrane. The tips probably represent a site on the microorganism that is specialized for attachment. (Courtesy of J. B. Baseman; from P. C. Hu, A. M. Collier, and J. B. Baseman, *J. Exp. Med.* 145, 1326, 1977.)

Source : *Microbiology*, Eugene W. Nester, 1978

## MYCOPLASMAL PNEUMONIA

### Etiology

Many illnesses formerly diagnosed as "primary atypical pneumonia" are caused by the pleuropneumonia-like organism *Mycoplasma pneumoniae* (Eaton agent). The disease occurs primarily in children and young adults; epidemics occur in schools and military populations and spread slowly. The incubation period is 10 to 14 days.

### Pathology

Patchy areas of consolidation are observed on gross examination of the lungs. *M. pneumoniae* attaches to ciliated epithelium of the lower respiratory tract and, although it does not invade the epithelial cells, it causes destruction. This injury is accompanied by an acute interstitial pneumonitis with intense mononuclear cellu-

lar infiltration about the bronchioles; polymorphonuclear cells appear later in the disease in the bronchiolar lumina. The alveoli often are spared, although their septa may be congested and edematous, and they may contain many mononuclear cells (lymphocytes, plasma cells, monocytes, and desquamated alveolar lining cells).

### Symptoms and Signs

In contrast to bacterial pneumonia, mycoplasmal pneumonia usually begins gradually. Headache, fever, malaise, and chilliness with frank rigors are common. Cough is often severe and initially nonproductive. Early in the disease, the sparse sputum contains some mononuclear cells but very few bacteria (normal mouth flora). As the illness evolves, mucopurulent, occasionally blood-tinged expectoration develops. Disparity between physical and x-ray chest findings is common during the first few days. Suppressed breath sounds and a few rales may identify the lesion in the absence of definitive x-ray changes, or physical examination may disclose no abnormality despite clearly evident infiltration in the chest x-ray. Pulse and respirations may be normal, even in the presence of fever.

### Diagnosis

*M. pneumoniae* may be isolated by sputum culture on special media, though growth is slow. Various specific serologic tests, including CF, support a presumptive diagnosis. Cold hemagglutinins develop in a majority of the more severely ill patients, but may be delayed in appearance until the 3rd wk of the disease. The frequency of occurrence and range of titers vary widely in different series of cases reported. The WBC count usually is normal. Chest x-ray discloses pulmonary involvement with small round areas of density extending from the hilum at first and then spreading to involve areas within one or more lobes of one or both lungs. In severe cases the chest x-ray may resemble that of miliary TB.

### Prognosis and Treatment

Death from mycoplasmal pneumonia is rare, though the illness may occasionally extend for several weeks. Tetracycline or erythromycin 500 mg orally q 6 h may hasten clinical improvement and should be given to severely ill patients, but these drugs may not eradicate the pathogen. Erythromycin-resistant mycoplasmas have been isolated from man. Symptomatic treatment is the same as for pneumococcal pneumonia. Inhalation of warm moist air may help to relieve bronchial irritation.

Source : *The Merck Manual*, 1982

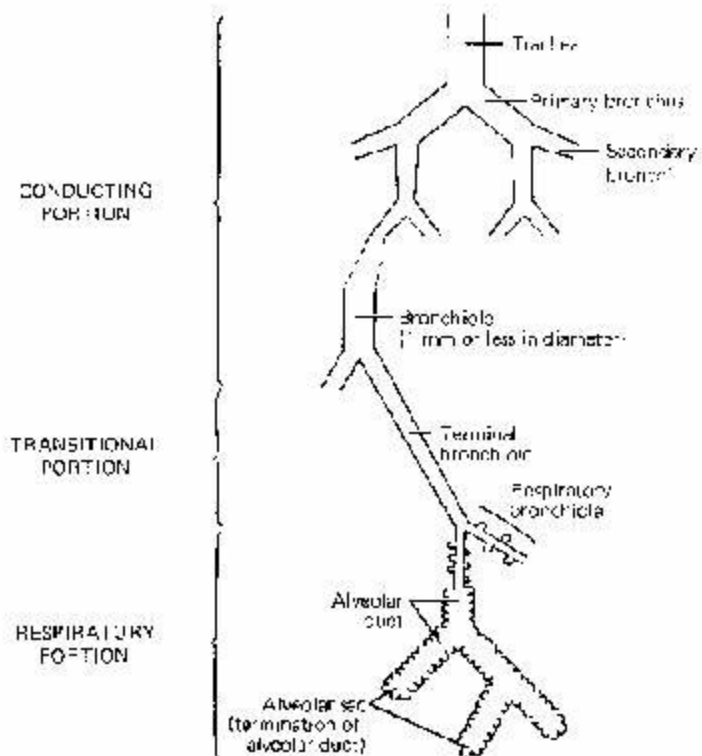
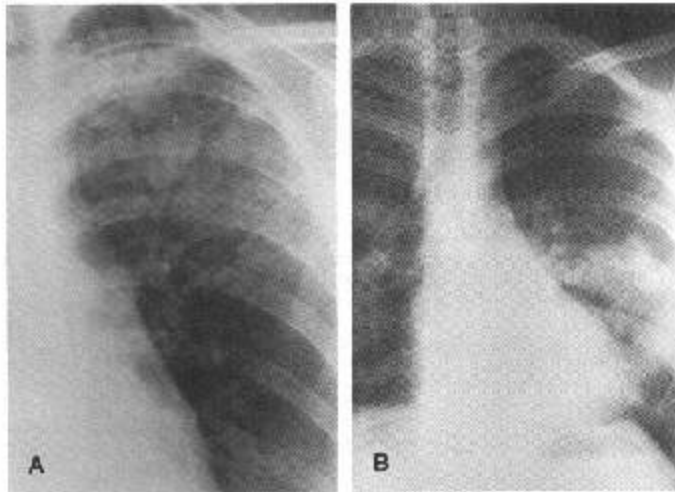


Figure 18-4. The main divisions of the respiratory tract. For instructional purposes, the natural proportions of these structures been altered; thus, for example, the respiratory bronchiole is in reality a short transitional structure.

### The main divisions of the respiratory tract.

Source: *Basic Histology*, L.C. Junqueira, 1977

Fig. 23-11. Mycoplasma pneumoniae. A. The air bronchogram denotes alveolar disease, but there also appears to be some interstitial change in the upper central lung. B. Alveolar pneumonia is noted in the left lower lobe which is probably subsegmental.



### **Mycoplasma Pneumonia : X Rays**

**Source : *Essentials of Roentgen Interpretation*, John H. Juhl, 1981**

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