A case of mycoplasmal pneumonia secondary to measles pneumonia

With some observations on 20 hospitalized patients with mycoplasmal pneumonia in 1984

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Summary

A case was diagnosed as mycoplasmal pneumonia secondary to measles pneumonia. The diagnosis was based on the following: First, there was temporary resolution in the chest X-ray along with clinical and laboratory improvement. Second, two phases at intervals of 5 days were clearly noted in these processes. Third, mycoplasmal antibody level in paired serum showed marked elevations, following the two phases.

We documented 20 serologically proven cases of mycoplasmal pneumonia admitted into our hospital in 1984, the most recent peak year in this disease cycle.

Key words: mycoplasmal pneumonia, measles pneumonia, measles, mixed infection

Introduction

Mycoplasmal pneumonia is a respiratory disease occurring endemically or sporadically. There are many reports on the clinical and pathological features of mycoplasmal pneumonia¹⁻⁴, including cases of mixed viral and mycoplasma infections. But little information is available as to mycoplasmal pneumonia secondary to viral infection. The cycle of prevalence of mycoplasmal pneumonia is said to be approximately 4 years³⁻⁴, and 20 hospitalized cases of mycoplasmal pneumonia were observed in 1984, i.e., the year of prevalence. Described below is a case with mycoplasmal pneumonia secondary to measles pneumonia.

Report of Case

A 10-year old female had a persistent high fever and cough which began 7 days prior to admission. The sudden appearance of a generalized rash brought her to our hospital in January 7, 1984. The chest X-ray (CXR) showed a faint and ill-defined shadow in the left lung. Positive findings were fever (38.5°C), regular tachycardia (92/min), tachypnea (40/min), cervical lymphadenopathy and conjested bulbar conjunctiva.
Laboratory findings were as follows: RBC; 527×10⁴, Hb; 14.2, Ht; 41.7, WBC; 6100, band; 5, seg; 44, lymph; 48, atypical lymph; 3, ESR; 38/h, CRP; 7(+), ASLO; (−), T–P; 6.7, A/G; 1.28, Al; 56.3, α₁; 5.1, α₂; 16.3, β; 8.8, γ; 13.4, GOT; 45, GPT; 17, LDH; 553, Na; 136, K; 3.6, Cl; 98, Urinalysis; normal

Hospital Course (Fig. 1)

Koplik's spot were not observed, nor the rash characteristic of measles. She demonstrated a remittent fever with catarrhal symptoms and hyperpigmentation during the recovery stage. These findings suggested the possibility of measles. The measles viral antibody level showed a significant increase from negative to 128 in complement fixation test (CF) and 256 in hemagglutination inhibition test (HI). Consequently, the diagnosis was a measles pneumonia. The clinical course proceeded favorably thereafter. Simultaneously with the disappearance of the rash, her general symptoms, laboratory data and CXR began to improve. Therefore, no other viral antibody titers were determined at that point. However, the patient was again affected by fever and severe cough starting on the 9th hospital day. Repeat CXR revealed a pattern of pneumonia accompanied by atelectasis due to severe inflammation. The mycoplasma antibody level was 128 in CF and 5120 in HI. The CHA also was as high as 1:1024. The acute onset of the illness was most suggestive of mycoplasmal pneumonia. The patient was again given TC 100 mg/day parenterally and CEX 1.0 g/day orally. A mild liver dysfunction showing GOT 40, GPT 47, LDH 525 and Al-p 11.8 developed subsequent to her second febrile period. Her liver was palpable to 2.5–3 finger breadths. In addition to these liver disturbances, she had a persistent headache. Therefore, Reye's syndrome was considered at that point, but encephalopathic symptoms
were not present. By the 16th hospital day, she became afebrile. Mycoplasmal antibody level in paired serum showed 256 in CF and 10240 in HI. The subsequent hospital course was that of gradual improvement and she was discharged on February 6, 1984.

Discussion

The signs and symptoms of mycoplasmal pneumonia vary widely and it is not rare for cases to be so severe as to require admission. Many findings in this case suggest that the patient must have been first infected with measles, and that her reduced resistance and the tissue damage due to the viral infection accelerated the progress of her mycoplasma infection. Given the fact that repeat CXR showed an infiltrate in the same location as the presenting film, and taking into consideration the incubation period for measles and mycoplasma, it could be possible that her course was due to a mixed infection. However, there are several arguments against the possibility. In addition to the two phases, temporary remission of the CXR, and clinical and laboratory improvement were recognized. Mycoplasmal antibody level in paired serum showed elevations of 128 up to 256 in CF and 5120 up to 10240 in HI. From these results, it was thought that this case was mycoplasmal pneumonia in a broader sense secondary to measles pneumonia.

As is commonly known, the year of 1984 happened to be the year for the prevalence of mycoplasmal pneumonia. Likewise the incidence of measles5,43 markedly increased in 1984. Further, it is of interest that the curve of incidence of measles is very similar to that of mycoplasmal pneumonia.

Pneumonia occurs in about 30% of infected family members. In our case, the patient’s mother also showed signs and symptoms of mycoplasma infection at the same time the patient had the recurrent fever. It can be assumed that both the mother and her daughter were simultaneously or almost simultaneously affected by the mycoplasma. When the mother first visited our clinic on February 12, her mycoplasma antibody and CHA values were both 256. Her CXR revealed the presence of inflammation from both hilar areas down to peripheries. The mother’s severe cough lasted for more than 40 days.

Gastroenteritis is often noted in patients with mycoplasmal pneumonia, but hepatitis is extremely rare. In this case the patient did have some liver dysfunction, but it was not clear whether this was due to the measles or mycoplasma infection. And there was no evidence to substantiate the diagnosis of Reye’s syndrome. The variety of accompanying symptoms may suggest that this patient had a marked viremia.

The antibiotics of choice in mycoplasmal infection are macrolide and tetracycline. If the symptoms become persistent requiring long term therapy, it will be occasionally necessary to change the antibiotics. Since the cough lasted for a long time in this patient, TC was switched to CM, which seemed to be moderately effective for relieving the cough.

An additional observations on 20 hospitalized patients with mycoplasmal pneumonia were made in 1984.

Cough, sputum, chest pain and headache, in this order, constituted the most frequent complaints (Fig. 2). Fever was nearly a constant sign. An interesting feature common
to our patients was the occurrence of chest pain and headache. These symptoms have been reported in less than 20% in other studies. For us these were useful in the early detection of mycoplasmal pneumonia.

The CXR pattern is variable. Most roentgenograms showed faint densities, especially in the lower lobes, extending down from the hilum. No difference in findings between right and left lobes was noted (Table 1).

The following are some of interesting CXR films (Plate 1).

Case 1: This film revealed middle lobe syndrome. The middle lobe is one of the favorite sites for mycoplasmal pneumonia. In this case, mycoplasmal antibody level in CF showed an increase from 8 to 256.

Case 2: In mycoplasmal infection, it was formerly thought that most infections involved only one or two segments of the lung. This case presented as a form of lobar pneumonia. This photo shows peribronchitis and two horizontal strands that are now thought to be characteristic of mycoplasmal pneumonia. Mycoplasmal titer showed 512 in CF and 640 in HI.

Case 3: It is not uncommon for mycoplasmal pneumonia to present as bilateral infiltrates. This case showed 32 mycoplasmal CF, 9100 leukocytes and 36 mm sedimentation rates. Other viral titers were negative. Macrolide was given, and by the 14th hospital day the bilateral infiltrated disappeared.

Case 4: The CXR findings may be greater than expected from the physical examination. This patient was essentially asymptomatic. Mycoplasmal HI showed 80. The CXR obtained as part of an evaluation for a non-pulmonary problem.
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References


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