

Rhabdomyolysis associated with *Mycoplasma pneumoniae* infection

To the Editor *Mycoplasma pneumoniae* (*M. pneumoniae*) causes up to 40% of the cases of community-acquired pneumonia and infects the upper and lower respiratory tracts of children and adults.¹⁻⁴ *M. pneumoniae* infections of the lower respiratory tract generally manifest with cough, sometimes dyspnea, adenopathy, wheezing, and, rarely, with respiratory failure.⁵ Respiratory tract infections caused by *M. pneumoniae* are also associated with a wide range of extrapulmonary manifestations, including rhabdomyolysis.¹⁻⁴

Rhabdomyolysis is a potential lethal disorder that occurs as a primary disease or complication of a broad spectrum of other diseases. This syndrome is characterized by elevated serum creatinine kinase (CK) secondary to skeletal muscle injury.⁶

Numerous infections have been described as precipitating factors of rhabdomyolysis,⁷ but *M. pneumoniae* remains an uncommon cause. Previously, an association was reported between *M. pneumoniae* and rhabdomyolysis in pediatric patients.^{8,9} However, to our knowledge, rhabdomyolysis associated with *M. pneumoniae* infection in adult patients has not been described so far. Therefore, we would like to report a case of rhabdomyolysis associated with lower respiratory tract infection caused by *M. pneumoniae*.

A 25-year-old woman presented to our hospital with fever, cough, and fatigue. Her complaints started 4 days before hospitalization. She had no systemic disease on admission. Physical examination revealed the temperature of 37.8°C, blood pressure of 135/90 mmHg, pulse rate of 102 per minute, and respiratory rate of 40 per minute. On physical examination, bronchial breath sounds were present over the left upper lobe and lingular areas. Based on the Medical Research Council scale for muscle strength, we detected 3/5 proximal and 2/5 distal muscle weakness. Posteroanterior chest X-ray showed consolidation in the left upper lobe.

A laboratory examination revealed leukocyte of 3800 cells/mm³ and serum CK of 51 226 U/l. Immunoglobulin M antibodies of *M. pneumoniae* were detected in blood by micro-enzyme-linked immunosorbent assay (ELISA).

With the suspicion of rhabdomyolysis, muscle biopsy was performed. It revealed inflammatory myopathy. Intravenous methylprednisolone (at a dose of 1 mg/kg) and antibiotic therapy with macrolide were administered. The symptoms of pneumonia and muscle weakness improved within 3 weeks.

Alcohol use, seizures, and trauma are the 3 main causes of rhabdomyolysis. Infectious causes account for less than 5% of the reported cases.⁶ Most of these infections affect the respiratory tract.¹⁰ In our case, *M. pneumoniae* was established as the infectious agent.

The pathogenesis of rhabdomyolysis related to respiratory tract infections is still controversial. Postinflammatory response to an infectious agent or its toxin and direct tissue damage of the infectious agents are the main possible explanations for the association between rhabdomyolysis and respiratory tract infections.¹¹

To our knowledge, rhabdomyolysis caused by *M. pneumoniae* has been described only in 2 pediatric patients.^{8,9} Until now, it has not been reported in adults. Berger et al.⁸ described the case of an adolescent girl with massive rhabdomyolysis associated with an infection caused by *M. pneumoniae*. We for the first time reported the case of rhabdomyolysis associated with *M. pneumoniae* infection in an adult patient.

About 50% of the patients with rhabdomyolysis developed renal failure and half of them required dialysis.^{6,10} On the other hand, there is no correlation between serum CK levels and the risk of developing renal failure. In our case, despite high serum CK levels (51 226 U/l), the patient did not develop renal failure.

The incubation period of *M. pneumoniae* infection varies from 1 to 3 weeks, but it can also be as short as 4 days. In our patients, the symptoms developed 4 days before admission.

M. pneumoniae infections cannot be diagnosed based on clinical findings alone, especially when they present with extrapulmonary symptoms. Serological methods such as ELISA (sensitivity 90%, specificity 88%) are used to confirm the infection. We performed ELISA because it is more sensitive than culture for detecting acute infection.¹²

Rhabdomyolysis and pneumonia association is probably underreported because physicians do not consider rhabdomyolysis as a possible complication of *M. pneumoniae* infection. The current case report shows that rhabdomyolysis should be considered when a patient with *M. pneumoniae* infection develops muscle weakness combined with elevated serum CK levels.

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