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CASE REPORT

Mycoplasma Pneumoniae Non-pulmonary Infection Presenting with Pharyngitis, Polyarthrititis and Localized Exanthem

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We report a case of pharyngitis, polyarthrititis and localized exanthem in acute *Mycoplasma pneumoniae* infection not involving the lower respiratory tract. Diagnosis was made by means of a particle agglutination test and IgM/IgG indirect immunofluorescence assay. This case describes a clinical complex never reported before and suggests the need for a high index of suspicion in cases of atypical presentation of *M. pneumoniae* infection.

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INTRODUCTION

Mycoplasma pneumoniae represents one of the most common etiologic agents of respiratory tract disease (1). Most patients have a mild respiratory illness and only 5% develop clinical pneumonia (2). Reports of unusual courses of the disease have been published in the past, and many extrapulmonary complications have been described (2–4). Early recognition of these manifestations is often difficult because of their protean pathomorphism (4). We report a case of *M. pneumoniae* infection in a young woman in whom no lower respiratory localization was found and whose presentation and course revealed a clinical complex never described before.

CASE REPORT

A previously healthy 16-y-old immunocompetent Italian woman was referred to Pistoia Hospital with a 6-d history of fever, pharyngitis, polyarthrititis and localized exanthem. She was a student and her history was negative for exposure to risk factors including animal contact, insect bites, drug misuse or exotic travel. On admission the patient appeared to be suffering but alert and showed a non-exudative pharyngitis. Her temperature was 39°C,

pulse 88 beats/min and blood pressure 110/80 mmHg. There was evidence of acute arthritis involving both the right wrist and left middle finger (Fig. 1A). These were warm, painful and enlarged because of developed effusions, but no bone alterations were revealed by X-ray. In addition, a maculopapular confluent-like exanthem was seen distally on the inner surface of both thighs (Fig. 1B). No involvement of the mucous membranes was found.

There was no past or present evidence of cough and no pulmonary involvement was documented by chest radiogram or physical examination. Electrocardiography, ultrasonography of the upper and lower abdomen and routine biochemical tests were normal, except for raised levels of white blood cells ($16.8 \times 10^9/l$; 71.4% neutrophils) and inflammatory indexes. The erythrocyte sedimentation rate (ESR) was 101 mm/h (normal 2–12 mm/h), α_2 -globulin level 16.5% (normal 8–13%), fibrinogen 757 mg/dl (normal 200–400 mg/dl) and CRP 19.9 mg/dl (normal < 0.9 mg/dl). Antibody titers measured in serum samples ruled out infections due to *Rickettsia*, *Borrelia*, *Chlamydia*, *Coxiella burnetii*, *Parvovirus B19*, *Leptospira*, *Salmonella*, *Brucella*, *Staphylococci* and *Streptococci*. Urine and blood cultures and a throat swab for bacteria were similarly negative, and searches for autoantibodies, cold agglutinins and markers for rheumatoid arthritis yielded negative results from the patient's serum samples. Serum antibodies to *M. pneumoniae*, tested using the Serodia-Myco-II gelatin particle agglutination test (Fujirebio, Japan), were, however, 1:320 on admission (normal value $\leq 1:40$), and increased to

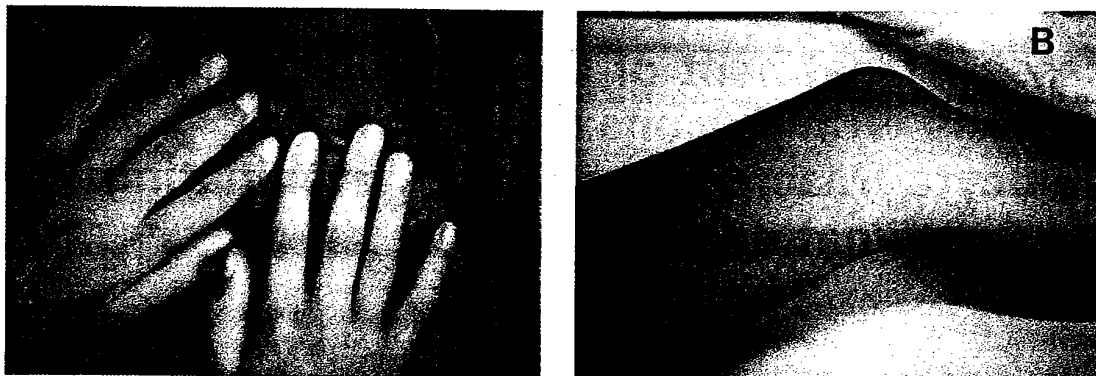


Fig. 1. (A) An enlarged left middle finger is shown. (B) A maculopapular exanthem is seen distally on the inner thigh.

1 : 640 after 4 d. Serum samples taken on admission were also subjected to immunofluorescence assay (IFA; Vircell, S.L., France) for the detection of IgM and IgG antibodies to *M. pneumoniae*, and to a standard complement fixation assay (Diesse, Siena, Italy). The serum was positive for specific IgM IFA antibodies and showed a IgG titer of 1 : 512 (normal value < 1 : 64).

The titer of complement-fixing antibodies to *M. pneumoniae* was 1 : 32 (normal value \leq 1 : 8). On Day 2 after admission treatment was started orally with standard doxycycline and low-dose corticosteroids. During the subsequent 3 d arthritis and exanthem, as well as pharyngitis and fever, vanished and the patient was discharged without symptoms on Day 14 after clinical onset. Ten days after discharge the white blood cell count returned to normal, while the ESR and the titer of the particle agglutination test to *M. pneumoniae* decreased to 40 mm/h and 1 : 320, respectively. No relapse, either clinical or serological, was documented over a 6-month follow-up period.

DISCUSSION

It has been estimated that \approx 50% of *M. pneumoniae* infections in adults and \approx 20% in children are asymptomatic (1). Among symptomatic infections, many extrapulmonary complications involving the skin, joints, central nervous system (CNS), heart, liver, pancreas, kidneys and blood have been reported (2–4). These infections display a variable grade of severity and some result in significant morbidity and mortality (2). To date, cases of aplastic or hemolytic anemia, hepatitis, leukocytoclastic vasculitis, myositis, arthritis, many different eruptions, including Stevens–Johnson syndrome, and various extents of CNS involvement have been described, occurring either in isolation or in various combinations (2–8). These manifestations may be synchronous with the respiratory localization of the infection or may follow it, and evidence to implicate local infection or post-infectious autoimmunity has been provided (7, 9). The occurrence of these manifestations in the absence of any lower respiratory involvement is, however, exceptional (9).

In the episode described herein no lower respiratory infection was found and the presentation and course showed a clinical complex that, to our knowledge, has never been reported previously. Diagnosis of *M. pneumoniae* infection was made by means of a particle agglutination test and was confirmed by detection of IgM and high-titer IgG antibodies using indirect IFA (9–11).

This case adds a new presentation pattern to the protean manifestations of *M. pneumoniae* infection. Furthermore, the evidence arising from this report has some important diagnostic consequences, suggesting that *M. pneumoniae* should be considered in all patients with fever, pharyngitis, arthritis and exanthem, even if any lower respiratory involvement has been clearly ruled out.

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