

CASE REPORTS

Chlamydia Pneumoniae Respiratory Infection in a Child — A Case Report

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Summary

A case of respiratory infection in a child due to *Chlamydia pneumoniae* is reported. The diagnosis was made by the detection of chlamydial antigen in the tracheal secretion and a significant increase in *C. pneumoniae* antibody titre. The infection responded well to erythromycin therapy.

Key words: C. pneumoniae

Introduction

In recent years, new techniques have been developed which allow rapid diagnosis of the aetiology of respiratory infections caused by viruses, mycoplasma and chlamydia. These are based on immunofluorescence, enzyme immunoassays and DNA hybridisation techniques which have enabled us to identify the first case of *C. pneumoniae* infection in the University Hospital, Kuala Lumpur.

C. pneumoniae, previously known as *C. TWAR*, is a recently described chlamydial organism. The first strain, TW183, was isolated from the eye of a child in Taiwan in 1965. All subsequent isolates have been recorded from pharyngeal swabs of patients with acute respiratory disease.

Seroepidemiological surveys and clinical studies with successful isolation of the organism have confirmed the role of *C. pneumoniae* as a significant pathogen in acute respiratory tract infections ranging from pharyngitis, sinusitis, flu-like illness to pneumonia. These infections appear to occur worldwide with antibody prevalence in adults around 40%. In children under the age of 5 years, infection is more frequent among those from the lower socio-economic groups^{1,2}.

Case report

Our patient was a 5 year old Indian girl who had fever and cough for 1 month. The cough was productive of yellowish mucoid sputum. It was not associated with breathing difficulties. Her appetite was poor and she had significant weight loss. Her father was a labourer who smoked about 10 cigarettes a day. None of her siblings had similar complaints.

Physical examination revealed a thin child who weighed 11.5 kg and was 110 cm tall. Her temperature was 38°C and she was tachypnoeic (respiratory rate of 50 breaths/min) with a vigorous and distressing cough. Her heart rate was 140 beats/min. and her blood pressure was 120/70 mmHg. Significant findings were confined to the respiratory system. There was reduced air entry in both lower zones and bilateral coarse crepitations were present. Her chest X-ray showed bilateral patchy opacities with increased hilar markings.

Laboratory investigations showed that she had a haemoglobin content of 12 gm/dl and a total white count of 600/ μ l with 50% lymphocytes. Her ESR was 15 mm/hr. A sputum culture for bacteria yielded normal upper respiratory tract flora and a blood culture grew no bacteria. A sample of tracheal secretion obtained with a mucus extractor was positive for chlamydial antigen by enzyme immunoassay (Chlamydiazyme, Abbott Laboratories, Chicago, USA) and for respiratory syncytial virus by direct fluorescent antibody staining (Dakopatts, Denmark). Serum antibodies to *C. pneumoniae**, *C. trachomatis*# and *C. psittaci*# (*by immunofluorescence, Washington Research Foundation, USA and #Bio Merieux, France) and to *Mycoplasma pneumoniae* (by particle agglutination, Fujirebio, Japan) were negative.

The child's condition improved over the next 2 days, with less frequent cough. Her temperature subsided. Her clinical improvement was thought to be due to a change of environment. She was sent on home leave but defaulted at follow-up. Two months later she was brought to the clinic again because of persistent cough. She had been on medication from her general practitioner without much improvement. Examination showed that she was relatively well with mild cough and tachypnoea. Her lungs were clear on auscultation. Based on her previous positive chlamydial antigen in the tracheal secretions, she was started on a 2 week course of erythromycin. Following treatment, her symptoms subsided and she regained her body weight. Three months after treatment she remained well and asymptomatic. The second serum taken 8 weeks after the first showed the following IgG titres: <8 for *C. trachomatis*, 8 for *C. psittaci* and 256 for *C. pneumoniae*. The IgM for *C. pneumoniae* was negative.

Discussion

This patient had a mixed infection of the respiratory tract. Her tracheal secretion was positive for chlamydial antigen and respiratory syncytial virus (RSV). RSV infections are usually of short duration and acute signs and symptoms will subside without specific antibiotic therapy. This could explain the patient's improvement in the ward following her admission. It is unlikely however, that an illness of a month's duration can be explained solely by an RSV infection. Furthermore, the persistence of cough until treatment with erythromycin makes an initial chlamydial infection a strong possibility. A *C. pneumoniae* infection probably caused her underlying cough, fever, and loss of appetite and weight. This was then superimposed by an acute RSV infection which precipitated her admission.

The chlamydial antigen detection immunoassay was performed with the use of polyclonal antibodies which will detect all 3 species of chlamydia. However, in this case, significant seroconversion occurred only to *C. pneumoniae*. Microimmunofluorescence serology with the TWAR antigen has been shown to correlate closely with the isolation of the TWAR organism¹. The patient could have had an acute reinfection.

The epidemiology and clinical spectrum of *C. pneumoniae* infections in Malaysia is still not known. An increased awareness and better diagnostic facilities will lead to improvements in the management of these infections.

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