PEDIATRICS INTERNATIONAL Official Journal of the Japan Pediatric Society

Pediatrics International (2011) **53**, 1100–1101 doi: 10.1111/j.1442-200X.2011.03495.x

Letter to the Editor

Bilobar atelectasis as clinical presentation of *Mycoplasma pneumoniae* infection

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A wide variety of radiographic findings have been attributed to *Mycoplasma pneumoniae* infections. To our knowledge, the occurrence of atelectasis involving one or more lobes as a presenting feature of *M. pneumoniae* infection and requiring fiberoptic bronchoscopy for resolution has never been reported.

A 4-year-old girl with a 3 day history of low-grade fever (<38.0°C), and cough was admitted for progressive dyspnea. Mild respiratory distress (SaO_2 94%) and reduced vesicular sounds over the lower right lung were found, with slight elevation of white blood cells (13 480 cells/μL; 74% neutrophils) and of C-reactive protein (1.14 mg/dL; normal range, <0.46 mg/dL). Chest X-ray demonstrated right middle and lower lobe atelectasis (Fig. 1a). To detect respiratory pathogens, real-time polymerase chain reaction (PCR) was performed on oropharyngeal swab, which showed a strong positivity only for the P1 cytoadhesin type 1 and 2 gene of the *M. pneumoniae* genome.[1] Elevated specific serum IgM titers were detected (59 U/mL; normal range, ≤17 U/mL). The patient was then treated with nebulized glucocorticoids plus albuterol, chlaritromycin and chest physiotherapy. On hospital day 4, the clinical condition, including the mild respiratory distress, and the physical examination were unchanged. Computed tomography (Fig. 1b,c) confirmed the

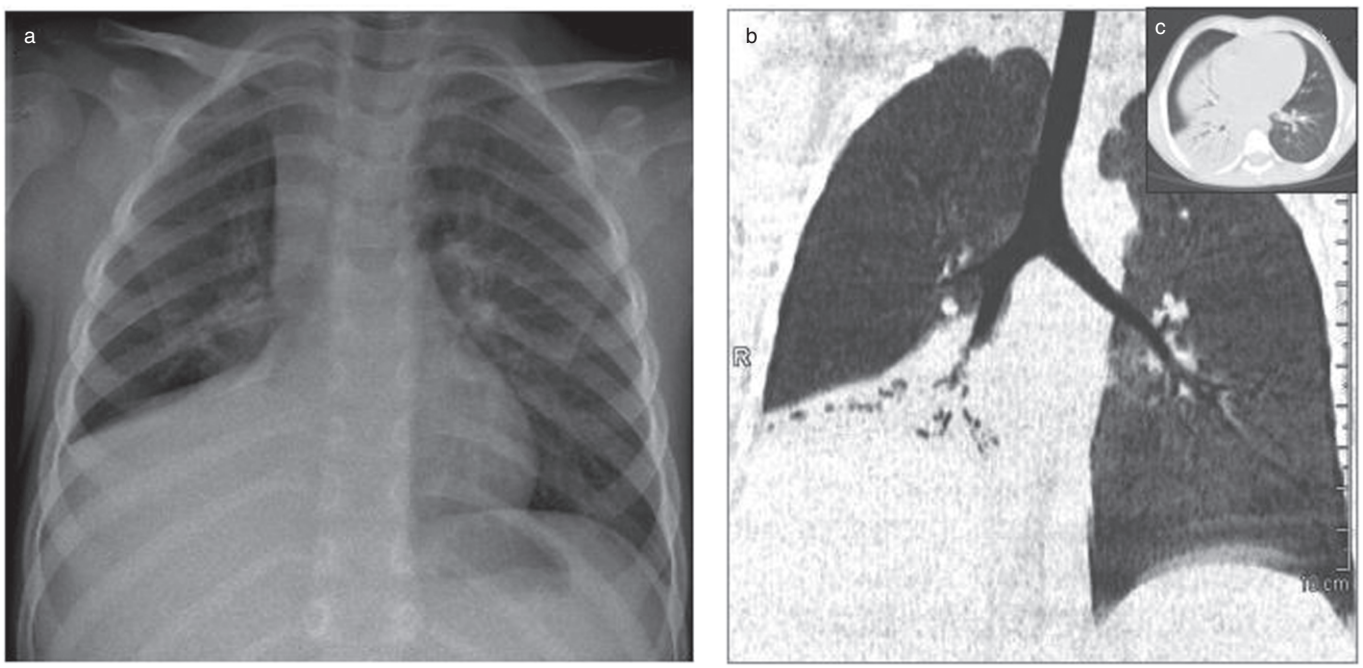

Fig. 1 (a) Chest roentgenogram at admission showing asymmetry of the two lung fields with a rightward mediastinal shift due to atelectasis of the lower portion of the right lung. (b,c) Computer tomography-generated 2-D view of the tracheobronchial system and axial view of the lung on hospital day 4, showing obstruction of the bronchus intermedium with atelectasis of the middle and lower lobe.

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Received 2 May 2011; revised 7 September 2011; accepted 12 October 2011.

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persistency of the atelectasis. Fiberoptic bronchoscopy was performed, which showed tenacious muco-purulent secretions in the trachea and in the right main bronchus, and mucus plugs obstructing the middle and lower lobe. After suction and extensive lavage with saline solution, normal patency of the airways was confirmed. Cytological examination of the bronchial aspirate indicated a high proportion of neutrophils (78%). Cultures for fungi and bacteria were all negative. The patient's respiratory condition rapidly improved in the following days with a complete re-expansion of the collapsed lobes. At follow-up visit a significant increase in the antigen-specific serum IgM and IgG titers was detected.

When present, atelectasis is usually a delayed occurrence in *M. pneumoniae* infection, not seen on presentation, and does not require mechanical suction for resolution.[1] In the present patient, the diagnosis of *M. pneumoniae* infection was initially based on real-time PCR positivity and on the elevation of the antigen-specific serum Ig levels.[1] Because of the persistency of the complete collapse of the two lobes despite treatment, however, and to exclude other causes of bronchial obstruction (i.e. foreign body inhalation, tuberculosis, neoplasms) endoscopy was performed and the mucus plugs found and successfully removed. *M. pneumoniae* infection may alter mucus secretion, inducing the release of a variety of factors active on mucous gland functions. These include proteases and arachidonic acid metabolites released by triggered mast cells and by polymorphonuclear leukocytes, and cytokines released by activated lymphocytes.[2,3] Moreover, the host innate immune response to *Mycoplasma* is initiated predominantly through Toll-like receptor 2-related signaling pathways, also involved in airway mucin expression in lung epithelial cells.[4] An exaggerated inflammatory response to *M. pneumoniae* infection, possibly associated with unresolved bronchial obstruction, may result in irreversible atelectasis.[5]

Health-care providers should include *M. pneumonia* infection in the differential diagnosis of atelectasis and, when clinically indicated by the persistency of dysventilation, consider the opportunity to perform fiberoptic bronchoscopy not only for diagnostic purposes but also to clear the obstruction.

Acknowledgment

Supported by Grant "Ricerca Corrente" from Italian Ministry of Health, Rome, Italy.

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