

Bilateral massive pneumonia caused by human metapneumovirus mimicking *Mycoplasma pneumoniae* pneumonia

Daijiro Nabeya¹, Takeshi Kinjo², Tomoo Kishaba³, and Jiro Fujita⁴

¹University of the Ryukyus

²University of the Ryukyus Faculty of Medicine Graduate School of Medicine

³Okinawa Kenritsu Chubu Byoin

⁴Ryukyu Daigaku

May 12, 2022

Abstract

Human metapneumovirus can be detected in adult community-acquired pneumonia. The chest image in this case was too massive to suspect human metapneumovirus pneumonia and clinically indistinguishable from *Mycoplasma pneumoniae* pneumonia. This case illustrates the difficulty of diagnostic imaging and importance of molecular diagnosis to avoid inappropriate use of antibiotics.

Bilateral massive pneumonia caused by human metapneumovirus mimicking *Mycoplasma pneumoniae* pneumonia

Daijiro Nabeya MD, PhD^a (respiratoryyy@gmail.com), Takeshi Kinjo MD, PhD^a (t_kinjo@med.u-ryukyu.ac.jp), Tomoo Kishaba MD^b (kishabatomo@gmail.com), and Jiro Fujita MD, PhD^a (fujita@med.u-ryukyu.ac.jp)

^aDepartment of Infectious, Respiratory, and Digestive Medicine, Graduate School of Medicine, University of the Ryukyus, Okinawa, Japan

^bDepartment of Respiratory Medicine, Okinawa Chubu Hospital, Okinawa, Japan

Correspondence to: Daijiro Nabeya, MD, PhD. (ORCID ID 0000-0001-5566-7310)

Department of Infectious, Respiratory, and Digestive Medicine,

Graduate School of Medicine, University of the Ryukyus,

207 Uehara, Nishihara, Okinawa 903-0215, Japan

Phone: +81-98-895-1144

Fax: +81-98-895-1414

E-mail: respiratoryyy@gmail.com

Abstract

Human metapneumovirus can be detected in adult community-acquired pneumonia. The chest image in this case was too massive to suspect human metapneumovirus pneumonia and clinically indistinguishable from *Mycoplasma pneumoniae* pneumonia. This case illustrates the difficulty of diagnostic imaging and importance of molecular diagnosis to avoid inappropriate use of antibiotics.

Key message

Human metapneumovirus pneumonia sometimes mimic *Mycoplasma pneumoniae* pneumonia.

Case

A previously healthy 37-year-old man presented with a five-day history of high fever, dry cough, nasal discharge, headache, and back pain. There were no chest auscultation findings and respiratory failure; however, chest X-ray showed bilateral extensive shadow and computed tomography (CT) revealed multilobar bronchopneumonia (Figures 1, 2). Blood examination showed an elevated white blood cell count of 10,100/ μ L and a C-reactive protein level of 7.04 mg/dL. Azithromycin was empirically initiated on the assumption of *Mycoplasma pneumoniae*(MP) pneumonia, and all findings resolved in only three days (Figure 1). Multiplex polymerase chain reaction (mPCR) of the sputum was negative for MP but positive for human metapneumovirus (hMPV). Sputum culture, Pneumococcal and Legionella urinary antigen, and MP antibody pairs were negative.

CT imaging findings of hMPV pneumonia are multilobar bronchiolitis consisting of bronchial wall thickening and centrilobular nodules, often with hilar-predominant consolidation, which then resembles bronchopneumonia of MP. The presence of reticular opacities on CT may suggest MP pneumonia^{1,2}. Additionally, since the clinical presentation of the two are similar, a certain number of cases of hMPV pneumonia may be misdiagnosed. The use of mPCR could make the diagnosis of community-acquired pneumonia more accurate¹, and reduce the inappropriate use of antimicrobials.

Acknowledgements

We would like to thank Editage (www.editage.com) for English language editing.

Conflict of interest

None declared.

Funding

No funding was received for this article

Author Contributions

Daijiro Nabeya : Conceptualization, data collection, literature review, analysis, investigation, writing—original draft, review, and editing.

Takeshi Kinjo: Conceptualization, data collection, literature review, analysis, investigation, writing—original draft, review, and editing.

Tomoo Kishaba: Study conception and revision of the manuscript.

Jiro Fujita: Study conception and revision of the manuscript.

Ethical Approval

This case report complies with the Declaration of Helsinki (Brazilian Revision, 2013).

Consent

Written informed consent was obtained from the patient to publish this report.

Data Availability

Data sharing not applicable to this article as no datasets were generated or analysed during the current study.

References

Koo H.J., Lee H.N., Choi S.H., Sung H., Kim H.J., and Do K.H. 2019. Clinical and Radiologic Characteristics of Human Metapneumovirus Infections in Adults, South Korea. *Emerg Infect Dis* 25:15-24. DOI: 10.3201/eid2501.181131

Tanaka H. 2016. Correlation between Radiological and Pathological Findings in Patients with *Mycoplasma pneumoniae* Pneumonia. *Front Microbiol* 7:695. DOI: 10.3389/fmicb.2016.00695

Figure legends

Figure 1: Chest X-ray images

(a) On admission, bilateral hilar-predominant shadows were seen. (b) It disappeared on the third day of admission.

Figure 2: Computed tomography images on admission

(b, c) Consolidation and bronchial wall thickening with pulmonary hilar predominance were seen. (a, b, d) Scattered, ill-defined centrilobular nodules were seen peripherally. These findings were in multilobar distribution. The pattern of pneumonia resembles bronchopneumonia.

