



## Spontaneous Pneumomediastinum in a Critically Ill Patient with Influenza A (H1N1) Virus

Faten May<sup>ID</sup>, Héla Maamouri<sup>ID</sup>, Christophe Henry<sup>ID</sup>

Service de Réanimation Polyvalente, Centre Hospitalier d'Albi, France

A 43-year-old man who was a non-smoker was referred to the Department of Pulmonary Medicine with 8-day history of fever, dry cough, and symptoms of an acute lower respiratory tract infection. His past medical history, two years earlier, was unremarkable except for pneumonia. There was no prior history of autoimmune diseases or immunosuppressant use. He was examined by a general practitioner, who prescribed antibiotics (amoxicillin-clavulanic acid) and symptomatic treatment, which turned out to be ineffective. Examination revealed acute respiratory failure ( $\text{SpO}_2$ , 92% on 6 L/min  $\text{O}_2$  mask). Discrete subcutaneous emphysema was palpated above the left clavicle. Chest radiography showed opacities in bilateral lung fields with a paracardiac air stripe (Figure 1A). Chest computed tomography scan demonstrated a large pneumomediastinum involving the left pectoral area and bilateral ground-glass opacities in both lungs, with greater severity in the left lung (Figure 1B). The patient's clinical status rapidly worsened with the development

of acute respiratory distress syndrome. He was transferred to the intensive care unit and placed on immediate mechanical ventilation for 8 days. The nasopharyngeal swab, tested by standard reverse transcription-polymerase chain reaction (PCR) and FILMARRAY™ multiplex PCR system, showed positive result for influenza virus A H1N1 and excluded many other respiratory pathogens. Blood culture did not show any bacterial pathogens. Serum human immunodeficiency virus antibody tests were negative. The patient was treated with oral oseltamivir for 10 days. Empiric intravenous antibiotic therapy with piperacillin-tazobactam and rovamycin was administered and was discontinued after 5 days when microbiological results were negative. On the fifth admission day, subcutaneous emphysema and pneumomediastinum resolved spontaneously without the need for further intervention. By day 13 after admission, the patient had fully recovered and was transferred to the medical ward. At 2 weeks after hospital discharge, the patient was doing well without

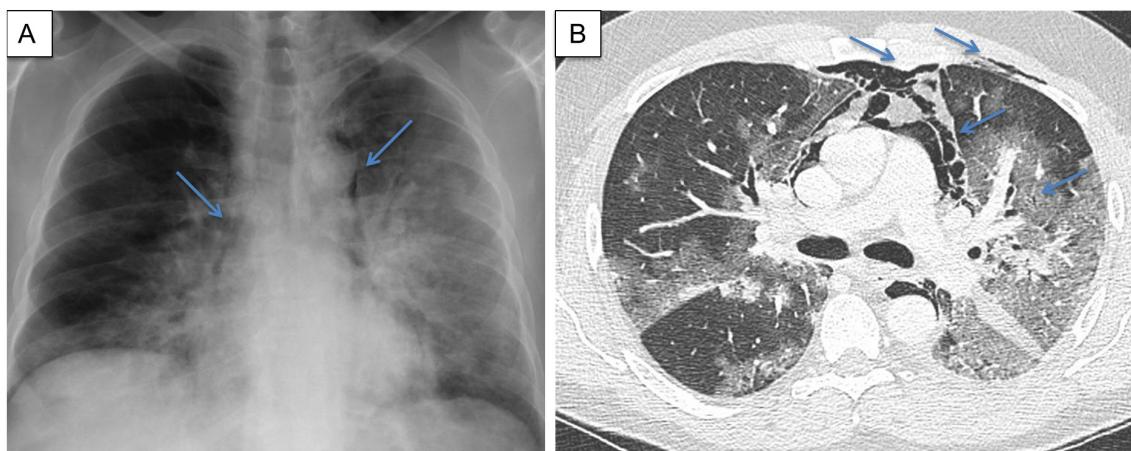


FIG. 1. A, B. (A) Chest radiography showing bilateral opacities with left lung predominance and a paracardiac air stripe (arrows). (B) Axial computed tomography through the middle chest, viewed at lung windows, showing bilateral ground-glass opacities in both lungs, with greater severity in the left lung, subcutaneous emphysema, and pneumomediastinum involving the left pectoral area (arrows).

Address for Correspondence: Faten May, Service de Réanimation Polyvalente, Centre Hospitalier d'Albi, France  
e-mail: mayfaten68@gmail.com

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ORCID iDs of the authors: F.M. 0000-0002-2894-5212; H.M. 0000-0003-1877-201X; C.H. 0000-0001-5520-1828.

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respiratory symptoms and follow-up chest radiography showed complete regression of the pneumomediastinum.

Spontaneous pneumomediastinum is an uncommon condition that should be considered as a potential complication in adults with severe influenza A (H1N1) virus infection,<sup>1</sup> and very few similar cases were reported in the literature.<sup>2-4</sup> Spontaneous pneumomediastinum generally resolves spontaneously. However, it can result in multiple complications, including pneumothorax, extensive subcutaneous emphysema, and tension pneumomediastinum, which compromise the cardiorespiratory state and require chest drainage.<sup>5</sup>

**Patient Consent for Publication:** The IRB/Ethics Committee did not require informed consent from the patient to submit this case report because no patient identifiers were presented.

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