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Acute lung injury following occupational exposure to nitric acid

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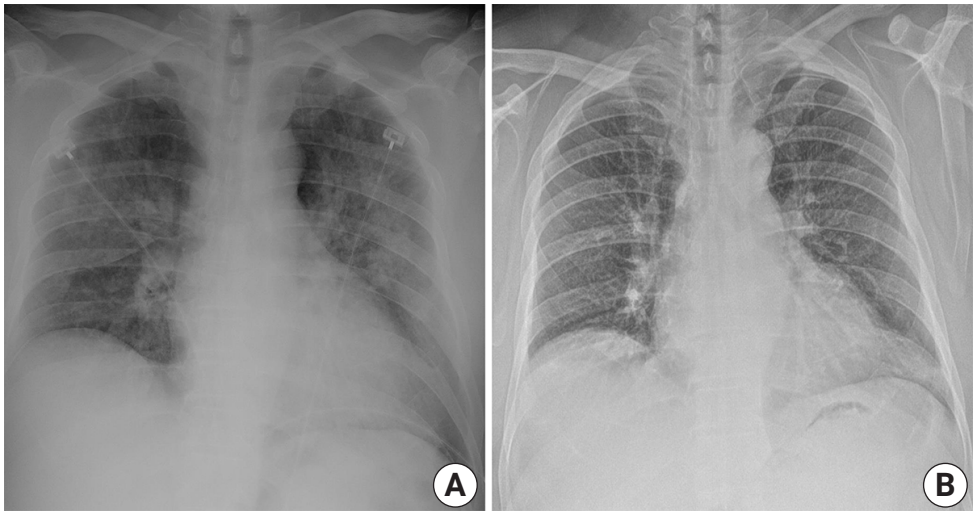

Figure 1. Chest radiograph. (A) Initial chest X-ray demonstrates diffuse bilateral opacities. (B) At hospital discharge, chest X-ray showed marked improvement.

Nitrogen dioxide is one of the compounds formed from breakdown of nitric acid and can lead to extensive damage to the pulmonary epithelium, causing both airway damage and inflammation [1-3]. A 60-year-old male presented to the emergency room complaining of deteriorating productive cough with dyspnea. The patient worked in a metal plating factory and reported 2-minute inhalation of nitric acid approximately 25 hours prior to arrival. At presentation, arterial blood gas analysis showed pH 7.37, partial pressure of carbon dioxide 41 mm Hg, and partial pressure of oxygen 59 mm Hg on 15 L/min of oxygen with a non-rebreathing mask. Crackles were audible over the posterior of both lungs. The chest X-ray showed diffuse bilateral opacities (Figure 1A), and computed tomography presented bilateral peribronchial consolidation and ground glass opacity with sparing in the subpleural region (Figure 2). The patient was treated with high-flow nasal oxygen therapy and transferred to an intensive care unit. Administration of bronchodilator and methylprednisolone (70 mg/day [1 mg/kg]) was initiated. He achieved clinical improvement and was transferred to the general ward with 5 L/min via nasal cannula. The patient was discharged 7 days after admission without oxygen

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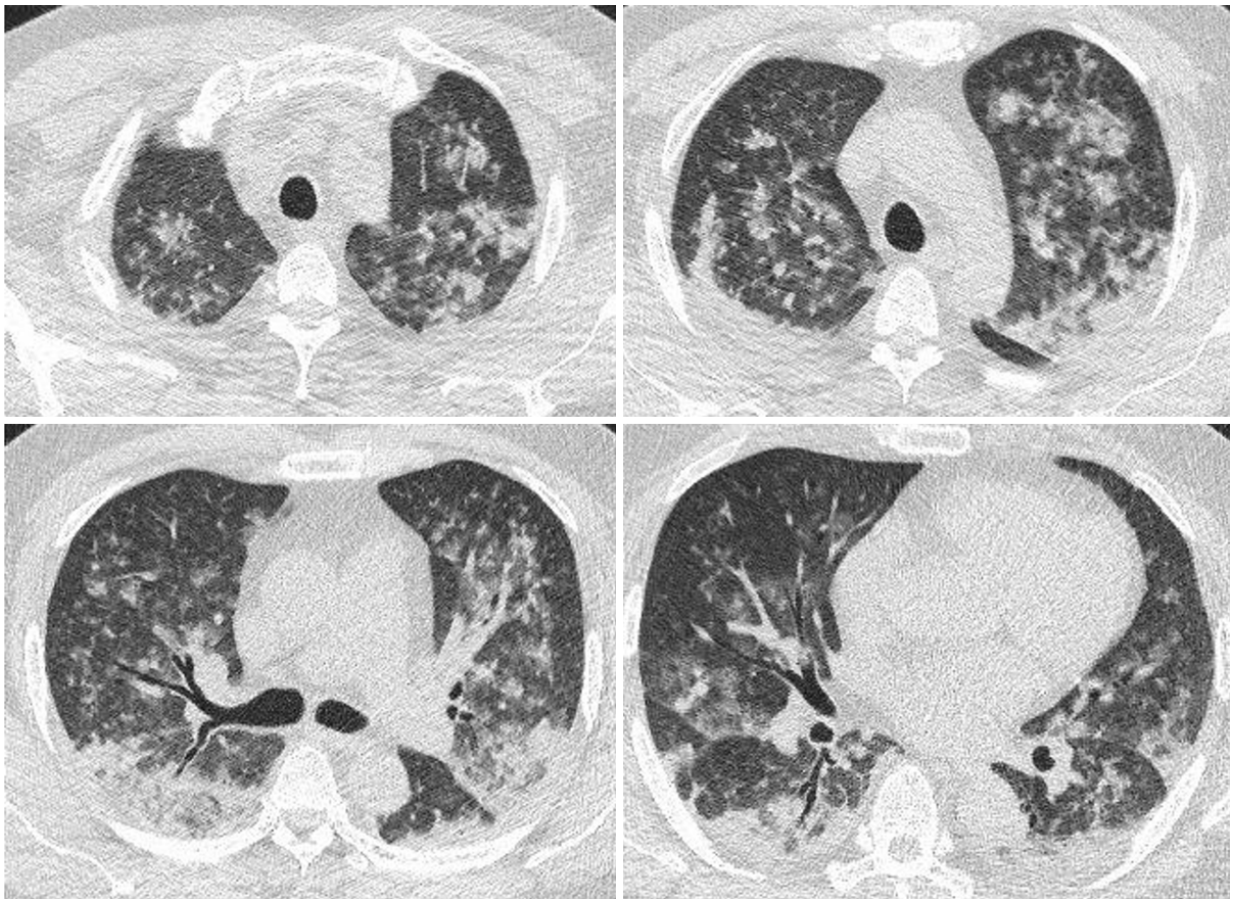

Figure 2. Chest computed tomography scan obtained on the day of emergency room visit presents bilateral peribronchial consolidation and ground glass opacity with sparing in the subpleural region.

therapy (Figure 1B). At discharge, methylprednisolone was reduced to 30 mg/day for 1 week and eventually discontinued after further reduction to 15 mg/day.

CONFLICT OF INTEREST

No potential conflict of interest relevant to this article was reported.

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Conceptualization: JHJ, REK. Data curation: JHJ, REK. Visualization: JHJ. Writing–original draft: JHJ, REK. Writing–review & editing: all authors.

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