

Obstructive Atelectasis Caused by Total Obstruction of the Left Main Bronchus by Mucous Plug

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Complete obstructive atelectasis caused by mucous plugs in the main bronchus can lead to life-threatening emergencies. Here, we report a case of atelectasis resulting in total obstruction of the left main bronchus due to a very large amount of thick purulent secretion, which was resolved using a fiberoptic bronchoscopic toilet.

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Key Words: Obstructive atelectasis; Mucous plug; Main bronchus; Bronchoscopic toilet

CASE

A 66-year-old male presented to the emergency department after suffering a major trauma. Endotracheal intubation and ventilator care were initiated on day 6 after hospitalization due to severe dyspnea. Open tracheostomy was performed on the 14th day of intubation. On the 20th day of tracheostomy, no atelectasis was observed in the AP chest radiography (Fig. 1A) and ABGA revealed the pH of 7.37, pCO₂ of 36, pO₂ of 121, HCO₃⁻ of 20.8, and O₂ sat of 98.1. However, the total atelectasis in the left lung was observed in the AP chest radiography performed on the following day (Fig. 1B) and ABGA deteriorated to pH of 7.30, pCO₂ of 42, pO₂ of 54, HCO₃⁻ of 20.7, and O₂ sat of 86.9. Fiberoptic bronchoscopy was performed to flush a very large amount of thick purulent secretion that totally obstructed the left main bronchus (Fig. 2). Atelectasis disappeared in the follow-up AP chest radiography (Fig. 3) and ABGA improved to pH of 7.32, pCO₂ of 42, pO₂

of 113, HCO₃⁻ of 21.6, and O₂ sat of 99.2.

DISCUSSION

Atelectasis is a state in which the lungs are completely or partly collapsed, most commonly occurs postoperatively, and is caused by cystic fibrosis, lung tumors, chest injuries, lung fluids, respiratory weakness, and presence of foreign objects. Mucous plugs can also lead to atelectasis, and the main bronchial plug leads to complete pulmonary collapse, which can ultimately lead to life-threatening conditions (1). Conventional chest radiography in a critically ill patient is the cornerstone of day-to-day management (2). In addition, the possibility of atelectasis should be considered when O₂ sat and pO₂ changes occur. In this case, following a bronchoscopic toilet, O₂ sat decreased from 98.1 to 86.9 and then increased to 99.2, whereas pO₂ decreased from 121 to 54, and then increased to 113. Ghosh et al. (3) reported a case of left main bronchus obstructed by a

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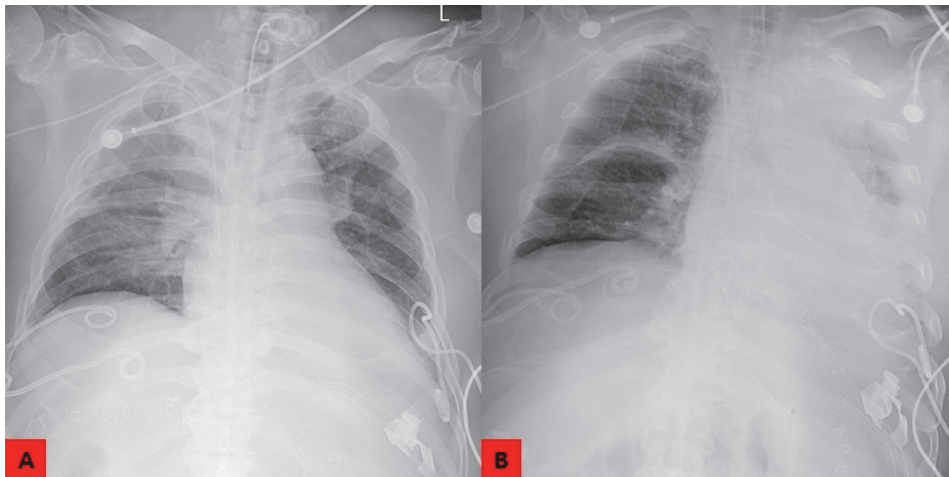


Fig. 1. On the 20th day of tracheostomy, no atelectasis was observed in the AP chest radiography. (A) However, total atelectasis in the left lung is observed in the AP chest radiography performed at the following day (B).

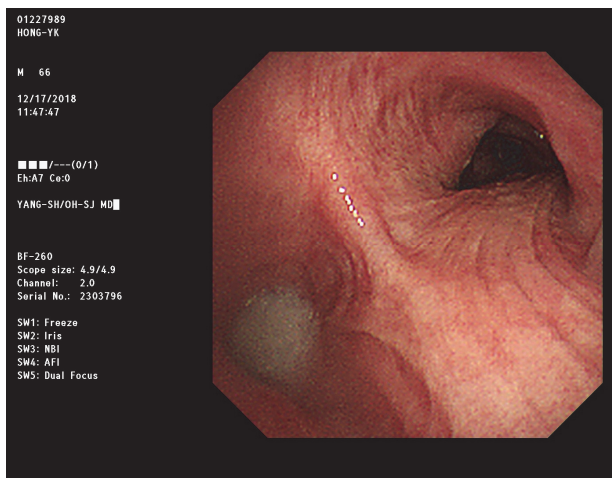


Fig. 2. Fiberoptic bronchoscopy reveals a very large amount of thick purulent secretion that totally obstructed the left main bronchus.

chunk of thick mucous in a 6-year-old male, and a uniform opacity involving the whole lung field obscuring the heart shadow (Silhouette sign).

Conflict of Interest Statement

None of authors has a conflict of interest

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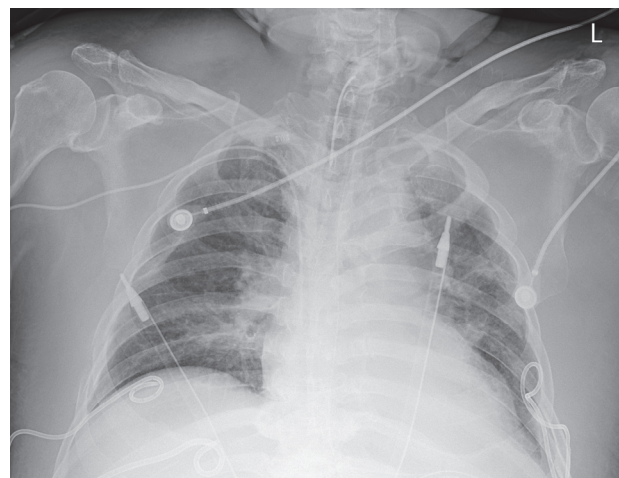


Fig. 3. Atelectasis in the left lung disappeared on the follow-up radiography following fiberoptic bronchoscopic toilet.

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