Finger-in-glove sign in congenital bronchial atresia

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A 60-year-old woman was referred to the authors' hospital in 2012, with a three-month history of nonproductive cough. She had no chest pain, night sweats or fever. She had no known toxic habits, nor surgical or medical background of interest. The chest x-ray showed loss of normal lung markings in the left upper lobe and a rounded, branching opacity mass lesion in the area of the left hilum (finger-in-glove

sign) (Figure 1A). A computed tomography scan of the chest showed mucoid impaction, segmental hyperlucency and decreased vascularity of the left upper lobe (Figure 1B). Three-dimensional reconstruction of the bronchial tree revealed an atretic apicoposterior segmental bronchus of the left upper lobe confirming the diagnosis of congenital bronchial atresia (Figure 1C).

Figure 1 **A** Posteroanterior radiograph showing loss of normal lung markings in the left upper lobe and a rounded, branching opacity mass lesion (glove-in-finger sign) in the area of the left hilum (white arrow). **B** Axial computed tomography image revealing mucoid impaction, segmental hyperlucency and decreased vascularity in the left upper lobe. **C** Three-dimensional reconstruction of the bronchial tree. No division of the corresponding bronchi, confirming the diagnosis of left upper lobe congenital bronchial atresia (arrows)

KEY LEARNING POINTS

- Congenital bronchial atresia is a rare anomaly characterized by normal bronchial ramification from a central blind bronchial sac filled with mucus (mucocoele). The regional hyperinflation is due to a check valve mechanism in the collateral ventilation through the alveolar pores of Kohn, the bronchoalveolar channels of Lambert, or the interbronchiolar channels.
- Distal to the bronchial atresia secretions accumulate, leading to mucoid impaction surrounded by segmental hyperlucency caused by a combination of trapped air and oligemia.
- The apicoposterior segmental bronchus of the left upper lobe is most commonly affected.
- Sixty percent of patients are asymptomatic, their anomaly being discovered on a routine chest radiograph.
- Computed tomography (with contrast if necessary) is the diagnostic test of choice.
- The differential diagnosis of finger-in-glove sign includes mucus impaction due to cystic fibrosis, allergic bronchopulmonary aspergillosis, broncholithiasis, foreign body aspiration and malignancies.

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