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Finger-In-Glove Sign in Congenital Bronchial Atresia

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ABSTRACT

A previously healthy 45-year-old female presented with intermittent cough. Chest computed tomography showed finger-in-glove sign. Blood tests for fungal infection and cancer biomarkers were negative. Diagnostic bronchoscopy revealed bronchial atresia. Although most congenital lung malformations are diagnosed during pregnancy and childhood, they should be considered for differential diagnosis in adults.

A 45-year-old woman presented with intermittent cough for 4 months. She had no fever or weight loss and was previously healthy. Chest computed tomography (CT) showed rounded branching opacity in the right upper lobe (RUL), a pattern known as the finger-in-glove sign (Figure 1A). The density of the opacity was around 4 Hounsfield Units (HU) indicating mucoid impaction. A subsequent CT pulmonary angiogram (CTPA) showed no enhancement of the lesion. Also, the pulmonary arteries to the lesion were thinner (Figure 1B). Her serum aspergillus-specific immunoglobulin G titre was below the detection limit (< 31.25 unit/mL), and serum carcinoembryonic antigen (CEA) was within the normal range (< 5.0 ng/mL). The diagnostic bronchoscopy revealed atresia (Figure 1E,F). Bronchoalveolar-lavage fluid (BALF) cultures were negative for bacteria and fungi but positive for rhinovirus. A diagnosis of congenital bronchial atresia was made. The patient was given symptomatic treatment, and regular follow-ups were suggested.

The finger-in-glove sign can be seen in mucoid impaction due to allergic bronchopulmonary aspergillosis, foreign body aspiration, bronchopulmonary malformation, and malignancies. Congenital bronchial atresia is a rare and mostly incidental radiographic finding [1]. Although most cases are diagnosed during pregnancy and childhood, they can remain undetected until adulthood [2]. No surgical intervention was required unless presenting with recurrent infection.

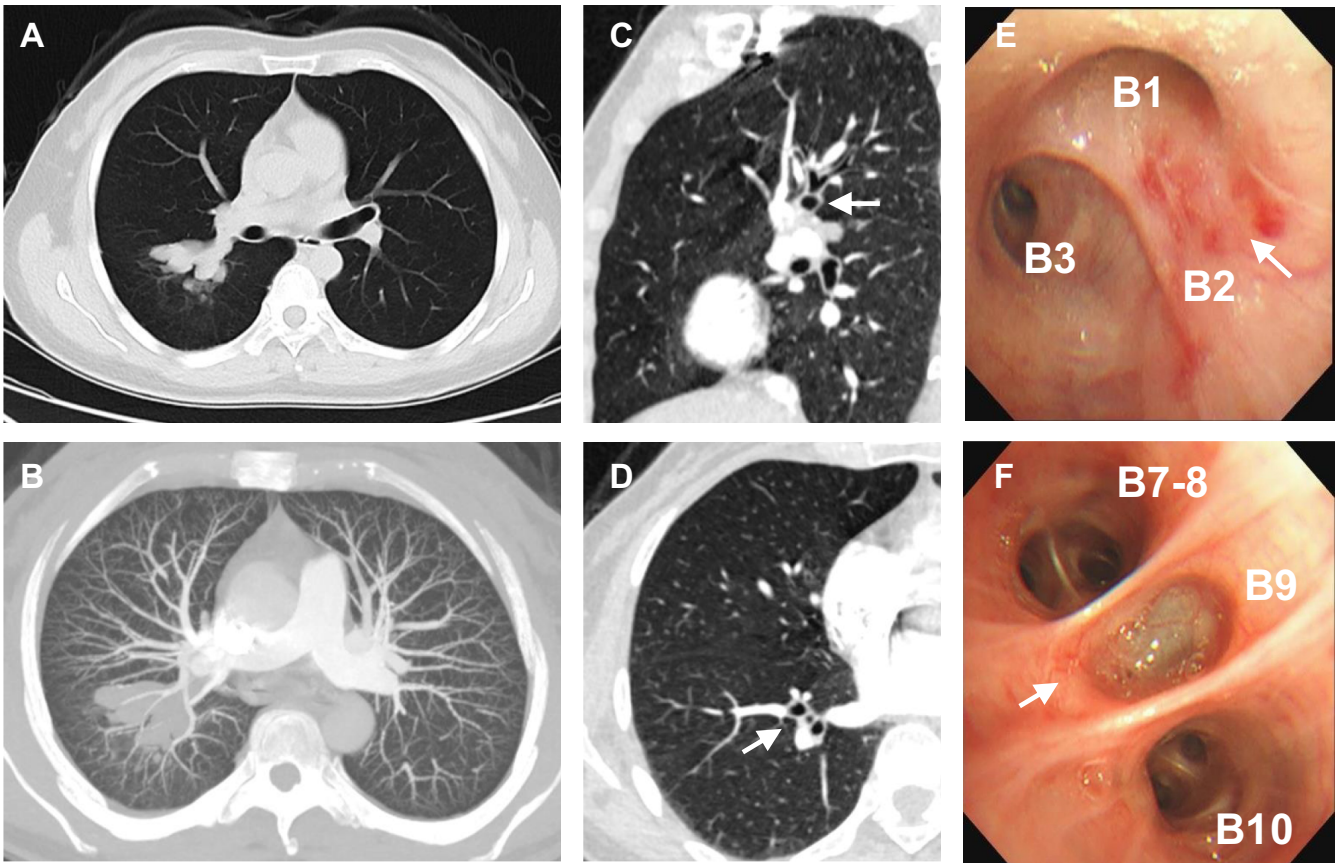

FIGURE 1 | (A) Chest computed tomography (CT) showing branching opacities in the right upper lung (RUL). (B) Maximum intensity projection (MIP) showing thinner pulmonary arteries to the posterior segment of RUL. (*CE*) Sagittal reformatted chest CT (C) and bronchoscopy image (E) showing atresia of the posterior segmental bronchus (B2) of RUL (arrow). (D and F) Chest CT (D) and bronchoscopy image (F) showing a blind end for the opening for lateral basal segmental bronchus (B9) of right lower lobe (arrow).

Author Contributions

X.C. was the attending physician responsible for patient care. J.X. and H.G. collected clinical information and wrote the manuscript. R.T. performed bronchoscopy. M.L. provided consultation for radiological findings. All authors have read and approved the manuscript.

Consent

The authors declare that written informed consent was obtained for the publication of this manuscript and accompanying images and attest that the form used to obtain consent from the patient complies with the Journal requirements as outlined in the author guidelines.

Conflicts of Interest

The authors declare no conflicts of interest.

Data Availability Statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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