



Case Report

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“Finger in Glove Sign” due to mucoid impactions

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Abstract

Finger in Glove Sign detected on chest radiograph and CT scan appears due to mucoid impactions in large air ways that are visualized as tubular opacities. It may occur in both congenital conditions like bronchial atresia, cystic fibrosis and in acquired diseases like ABPA, bronchiectasis, foreign bodies, tumors, bronchial asthma and tuberculosis to name a few. Mucoid impaction should be differentiated from other disease processes like AVM which can be excluded from doing a contrast study.

Keywords: Allergic broncho pulmonary aspergillosis (ABPA), Arteriovenous malformation (AVM), Anti-tuberculosis treatment (ATT), Computed tomography (CT), Contrast enhanced computed tomography (CECT).

Introduction

Mucoid impactions can occur in both congenital and acquired conditions. These mucoid impactions which usually are seen in large airways appear as tubular opacities on plain radiograph and CT chest. It is essential for the clinician and the radiologist to be familiar with the radiographic and CT features for him to differentiate the various causes like bronchial atresia, cystic fibrosis, ABPA, bronchiectasis, trauma, lipoma and malignancies like Bronchogenic carcinoma, carcinoid tumors and metastasis. It has been found that CT chest is more useful than plain radiograph chest in detecting finger in glove sign due to mucoid impactions.

Case Report

A 23 year old female was undergoing treatment with ATT for previous sputum positive pulmonary tuberculosis. She was subjected to 2 months of ATT. At present patient who is asymptomatic reported for a routine follow up. She was subjected to chest radiograph and CECT chest. In CECT chest, they were rounded opacities in the left perihilar region along with bronchiectatic changes in the right middle and bilateral lower lobes. Reconstructive images showed a characteristic “Finger in glove” appearance along with tubular opacities.

Discussion

The finger in glove sign was initially described in 1978.^[1] In 1957, cluster of grapes was referred to the imaging appearance of mucoid impaction by Greer.^[2] The “Finger in Glove Sign” can be visible on the chest radiograph, characterized by finger like opacities originating from the hilum and directed towards the periphery. These fingers like opacities are actually dilated bronchi filled with mucous. This mucoid impaction within the dilated bronchi appears as gloved finger. The “Finger in Glove Sign” can also be seen in conditions other than bronchial obstruction like non-obstructive lesions namely AVM. It may occur in both congenital and acquired conditions as mentioned before (congenital conditions like bronchial atresia^[5] and cystic fibrosis and inflammatory/infectious diseases like ABPA, bronchiectasis, foreign bodies, tumors, bronchial asthma and tuberculosis to name a few). Mucoid impaction should be differentiated from other disease processes like AVM which can be excluded from doing a contrast study. Mucoid impaction

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impaction is defined as mucin secretion filling larger airways/dilated bronchi. Thin sections of CT chest may be required to demonstrate the above findings. Features of inspissated mucus in dilated bronchus appearing as tubular opacities along with finger like projections on CT chest sometimes may be demonstrated on plain radiograph too. The multiplanar reconstruction CT images show the characteristic Finger in Glove Sign. In addition CT may also show bronchiectatic changes, tree-in-bud appearance^[4], nodules, pleural fluid and ground glass appearance in the lung fields. Malignancies like carcinoid tumor and endobronchial metastasis are uncommon. In most of the cases the tumor is located in bronchial tree and may be found occasionally in the lung parenchyma. A central mucoid impaction should always arise suspicion of bronchogenic carcinoma.^[3]



Figure 1: Plain radiograph PA view showing mucoid impaction in left upper zone in peri hilar region

Conclusion

Finger in glove sign can be demonstrated characteristically in plain and contrast CT chest; however, this abnormality may not be evident on plain chest radiograph. CT contrast images can be of help in differentiating mucoid impactions from other disease processes like AVM. The differential diagnosis includes both congenital and acquired abnormalities. Whenever a central mucoid impaction is seen Bronchogenic carcinoma as a possibility must be excluded.

Conflict of Interest: No conflict of interest noted. No financial implication.

References

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Figure 2: Plain CT(Lung window) coronal plane showing bilateral bronchiectatic changes

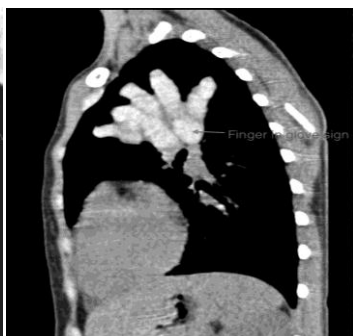


Figure 3: CECT (mediastinal window) sagittal plane showing 'Finger in Glove' appearance



Figure 4: CECT axial image showing mucoid impaction

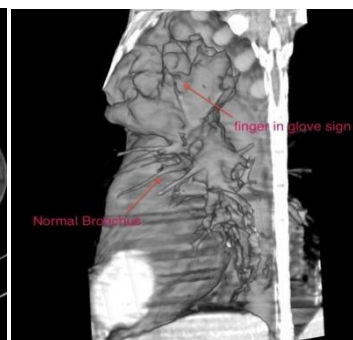


Figure 5: Multiplanar reconstructive image showing finger in glove sign and normal bronchus