

## Capturing Complexity: Clinical Image on Bullous Emphysema and Bronchiectasis with Clubbing of Nails

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### ABSTRACT:

Bulla emphysema is characterized by large, air-filled spaces (bullae) within the lungs due to alveolar tissue destruction, leading to reduced lung function and risk of pneumothorax. Clubbing of the nails, commonly associated with chronic hypoxia, often co-occurs with advanced lung conditions like bronchiectasis or cystic fibrosis. This case report highlights a rare presentation of bulla emphysema with nail clubbing in a 62-year-old chronic smoker. The patient exhibited Grade 4 nail clubbing and was diagnosed with both bulla emphysema and bronchiectasis, likely linked to his long-term smoking habit. Radiographs confirmed the presence of bullae, which impair lung function by occupying lung space and compromising gas exchange. Nail clubbing, a physical sign of chronic hypoxia, further suggests severe underlying pulmonary disease. Management typically involves treating the underlying condition, reducing inflammation, and addressing acute exacerbations with antibiotics. The report underscores the importance of early diagnosis, especially in patients with a smoking history, to prevent the progression of lung diseases and associated complications like non-healing ulcers and nail clubbing.

**KEYWORDS:** Bronchiectasis, Bullae emphysema, Clubbing, Respiratory diseases.

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### Quick Response Code



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## **INTRODUCTION:**

Bulla emphysema is a condition characterized by large air-filled spaces, called bullae, within the lungs that result from the destruction of alveolar tissue. These bullae can impair lung function, leading to shortness of breath and an increased risk of pneumothorax. Bronchiectasis is a chronic condition where the bronchial tubes are permanently widened, leading to mucus accumulation, recurrent infections, and persistent cough. Clubbing of the nails, often associated with these conditions, is a physical sign where the fingertips enlarge and the nails curve around them. It indicates chronic hypoxia and is commonly linked to pulmonary diseases.<sup>[1]</sup>

Bulla emphysema with clubbing of the nails is a relatively rare combination. While bulla emphysema itself is uncommon, particularly in younger individuals, the presence of nail clubbing alongside it suggests a more chronic and severe underlying pulmonary condition. Clubbing is often associated with chronic hypoxia and is typically seen in advanced lung diseases such as bronchiectasis, cystic fibrosis, or lung cancer, rather than emphysema alone. The concurrence of bulla emphysema with clubbing may indicate a more complex or advanced stage of lung disease, requiring thorough evaluation and management.<sup>[2]</sup>

## **CASE DETAILS:**

A 62-year-old male, a chronic smoker since 20 years, presented to the OPD with a two-year history of pain and a chronic, non-healing wound on his right index finger, accompanied by shortness of breath and clubbing of nail since 1.5 years. Notably, he had no history of diabetes or hypertension. Upon examination, Grade 4 (Figure no.1 expansion of terminal phalanx, drum stick appearance) nail clubbing

was observed in both hands, an unexpected finding. Further clinical assessment revealed symptoms suggestive of bronchiectasis, including wheezing and significant nail clubbing. Radiographic assessment, specifically X-ray findings, confirmed the suspicion and revealed the presence of bullae. Bullous emphysema, a condition characterized by damage to the alveolar walls, resulting in the formation of large air pockets known as bullae, was diagnosed. Bronchiectasis, a chronic condition marked by irreversible dilation and damage to the bronchi and bronchioles, often arises from recurrent respiratory infections or underlying conditions, such as chronic obstructive pulmonary disease (COPD). In this case, the patient's long-term smoking habit likely contributed significantly to the development of both bronchiectasis and bullous emphysema.<sup>[3]</sup>

The presentation of nail clubbing, a condition in which the nails curve excessively around the fingertips, is a noteworthy clinical sign often associated with chronic respiratory diseases. It occurs due to the chronic lack of oxygen in the blood and tissues, leading to changes in the blood vessels and connective tissue in the fingertips.<sup>[4]</sup> Bullae observed on radiography are indicative of bullous emphysema, a subtype of emphysema characterized by the presence of large air sacs within the lungs. These bullae can impair lung function by occupying space within the lung tissue, compromising its ability to effectively exchange oxygen and carbon dioxide. Acquired nail clubbing has several causes, including infectious, neoplastic, inflammatory, and vascular disease. Isolated nail clubbing can be a benign hereditary condition, but given the multiple associated conditions, the underlying etiology should be ruled out.<sup>[2]</sup>



Image no.-1 Clubbing of Nails



Image no. 2 Patient showing clubbing of nails



Image no.3-X-ray image of a right hand and wrist, shown in two views: a frontal (anteroposterior) view on the left and an oblique or lateral view on the right showing clubbing of nails



Image no.4- X-ray chest PA view showing bullous emphysema

## DISCUSSION:

The clinical picture of bronchiectasis varies greatly; some patients never have symptoms, whereas others only feel them during exacerbations. Still other patients deal with symptoms on a daily basis.<sup>[5]</sup> Bronchiectasis can be found in patients with chronic productive cough with profuse mucopurulent sputum or dry cough without phlegm can also be a symptom of bronchiectasis. Most complaints are chronic, progressive issues that worsen over time. Additional concerns include hemoptoe or shortness of breath as well as general symptoms such as exhaustion and weight loss. There are occasions when pleuritic chest pain is experienced. Physical examination findings in patients with bronchiectasis are nonspecific; lower lobes are frequently the site of rhonchi, wheezing on lung auscultation, and clubbing fingers on the fingers.<sup>[6]</sup>

Clubbing of the nails is soft tissue swelling of the terminal phalanx resulting in straightening of the angle that exists between the nail bed and the nail.<sup>[7]</sup> Management of bronchiectasis includes the identification of acute exacerbations and the use of antibiotics, controlling microbial growth, treatment of the underlying condition, and reduction of the excessive inflammatory response. Smoking, a sedentary lifestyle, and aging can all increase your risk of developing non-healing ulcers. Smoking can narrow blood vessels, which can increase your chances of developing ulcers. A sedentary lifestyle can also increase your risk because of the constant pressure on certain tissues. As you age, your skin may lose its ability to repair itself as quickly.<sup>[8]</sup>

The differential diagnoses for nail clubbing include the following:<sup>[8]</sup>

- **Neoplastic intrathoracic diseases:** Bronchogenic carcinoma,

malignant and benign pleural tumors, metastatic cancers, Hodgkin lymphoma, thymoma, pulmonary artery sarcoma, nasopharyngeal carcinoma, rhabdomyosarcoma, primary lymphosarcoma of the lung, and esophageal cancer.

- **Suppurative intrathoracic diseases:** Lung abscess, bronchiectasis, cystic fibrosis, empyema, and chronic lung cavitory mycobacterial or fungal infection
- **Diffuse pulmonary diseases:** Idiopathic pulmonary fibrosis, asbestosis, Langerhans cell histiocytosis, lipoid pneumonia, and pulmonary arteriovenous malformations.
- **Cardiovascular diseases:** Cyanotic congenital heart disease, infective endocarditis, arterial graft sepsis, brachial arteriovenous fistula, aortic aneurysm, atrial myxoma, and hemiplegic stroke
- **Gastrointestinal diseases:** Inflammatory bowel disease, celiac disease, amoebiasis, ascariasis, and lymphoma of the gastrointestinal tract
- **Hepatobiliary disease:** Biliary cirrhosis and juvenile cirrhosis
- **Metabolic diseases:** Thyroid acropathy and severe secondary hyperparathyroidism
- **Medication-induced cases:** Laxative overuse, interferon alfa-2A, and prostaglandin infusion

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**Consent of patient:**

The informed written consent has been taken for publication of the clinical images without disclose the identity of patient.

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**REFERENCES:**

1. Siddiqui NA, Mansour MK, Nookala V. Bullous Emphysema. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK537243/> [Last accessed on 2024 Jun 26].
2. Burcovschii S, Aboeed A. Nail Clubbing. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK539713/> [Last accessed on 2024 May 24].

3. Bird K, Memon J. Bronchiectasis. <https://www.ncbi.nlm.nih.gov/books/NBK430810/> [Last accessed on 2023 May 22] .
4. Burcovschii S, Aboeed A. Nail Clubbing. <https://www.ncbi.nlm.nih.gov/books/NBK539713/> [Last accessed 2024 June 24]
5. Fitrina, D. W., & Yulia Helexandra. Bronchiectasis with Multiple Bullae Post-Extraction Corpus Alineum Comorbid with Pulmonary Tuberculosis. Bioscientia Medicina : Journal of Biomedicine and Translational Research. 2022;6(3):1494-1504.
6. Nur prasetyo nugroho. Bronchiectasis. CDK Supplementary Edition-2, Vol. 45. 2018:68-74.
7. Dubrey S, Pal S, Singh S, Karagiannis G. Digital clubbing: forms, associations and pathophysiology. Br J Hosp Med (Lond). 2016;77(7):403-8.
8. McDaniel JC, Browning KK. Smoking, chronic wound healing, and implications for evidence-based practice. J Wound Ostomy Continence Nurs. 2014;41(5):415-23.