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Case Report on Cystic Bronchiectasis

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ABSTRACT:

Bronchiectasis, characterized by bronchial dilatation due to chronic inflammation, poses diagnostic challenges globally. In this case report, we explore a rare presentation of cystic bronchiectasis in a 40-year-old male with a history of lower respiratory tract infection and COPD. High-resolution chest CT revealed multilobar cystic opacities. Microbiological analysis of sputum unveiled Candida species and gram-negative bacilli, indicating a diverse microbial profile. The patient received a comprehensive treatment regimen, including antibiotics, nebulization, and supportive care, resulting in significant improvement. This case underscores the importance of a multidisciplinary approach to managing cystic bronchiectasis, considering both respiratory and psychiatric aspects. Sharing such clinical experiences enhances medical understanding and refines patient care strategies, contributing to the collective knowledge of this complex pulmonary condition.

Keywords: Bronchiectasis, cysytic bronchiectasis, HRCT, COPD.

1. Introduction:

Bronchiectasis is one of the pulmonary inflammatory diseases in which there is a dilatation of one or more bronchi.2 This occur mainly due to chronic airway infection causing inflammation.3 The clinical manifestation include productive cough, airway dilatation, chronic cough.1, 3 High-resolution chest CT represents the definitive diagnostic method for identifying bronchiectasis.1, 7 The causes of bronchiectasis vary globally, with a majority of cases being labeled as idiopathic, meaning the exact cause is unknown. However, in Asia, post-infectious factors are more prevalent, particularly in the form of post-tuberculous bronchiectasis. This study highlights a consistent trend in the causes of bronchiectasis. Tuberculosis (TB) was the most common cause, affecting 35.5% of the 2195 patients. Post-infectious factors, mainly pneumonia and childhood respiratory infections excluding TB, accounted for 22.4%. Idiopathic cases constituted 21.4%. Notably, 41.7% of the study population had a history of previous TB, and certain subgroups exhibited distinct phenotypes such as 'frequent exacerbator' and 'Pseudomonas aeruginosa'.5 Cystic bronchiectasis is a less frequently observed morphological variant within the spectrum of bronchiectasis. It can manifest independently or in conjunction with other forms of bronchiectasis. It is marked by the ballooning or saccular dilation of bronchi, reaching the pleural surfaces. When clustered together, they may present a visual resemblance to a bunch of grapes. (1, 6) In this case report, we examine a cse of cystic bronchiectasis – a condition where the airway in the lungs are abnormally enlarged with cysts. Well explored how the patient showed symptoms, the diagnosis, the treatment tried and how we managed the care of patient with this respiratory issue. Our goal is to share useful information with the medical community for better understanding of cystic bronchiectasis and improve our approach to its clinical care

2. Case presentation:

A 40 years old male patient presented with the chief complaints of breathlessness and cough since five days associated with expectoration which is white in color non blood tinged. The medical history showed lower respiratory tract infection 2years back and COPD 20 years back and bipolar affective mood disorder on medication. The patient neither smoke nor engage in other habits.

On physical examination, the patient exhibits a moderate build and appears well-nourished. PICCLE was negative. The patient had no fever, and vital signs included a heart rate of 96 beats per minute, blood pressure of 100/60 mmHg, respiratory rate of 18 breaths per minute, and oxygen saturation (SpO2) of 96% on room air. On systemic examination, there was an absence of lymphadenopathy. Respiratory sounds revealed crepitation in the left mammary area and left infrascapular area.

The chest HRCT revealed cystic opacities in right middle lobe, lingual and left lower lobe, indicating the presence of multilobar cystic bronchiectasis.

Laboratory analysis indicated normal complete blood count (CBC), liver function tests (LFT), and renal function tests (RFT). Additionally, the sputum culture revealed the isolation of Candida species, with >25 (pus/hpf), 10-20 epithelial cells per high-power field (epi/hpf), and the presence of gram-negative bacilli. Gram positive Oval to round budding yeast cells with pseudohyphae were also observed, indicating a diverse microbiological profile.

Throughout the hospital stay, the patient received a combination of antibiotics and supportive care, including Cefotaxime 1g BD for 5 days, Azithromycin 500mg OD for 5 days, and Metronidazole 500mg BD for 5 days. Nebulization with Duolin and budecort was administered to address breathlessness, and Mucinac (Acetyl Cysteine) 600mg was provided. With ongoing treatment, the patient's condition improved, leading to discharge with a prescription for Azithromycin 500mg for 1 week, Fluconazole 200mg OD for 1 week, as well as medications for the management of bipolar affective mood disorder (Lithium, Risperidone, Clonazepam). Chest physiotherapy was recommended, and a follow-up after 2 weeks was advised.

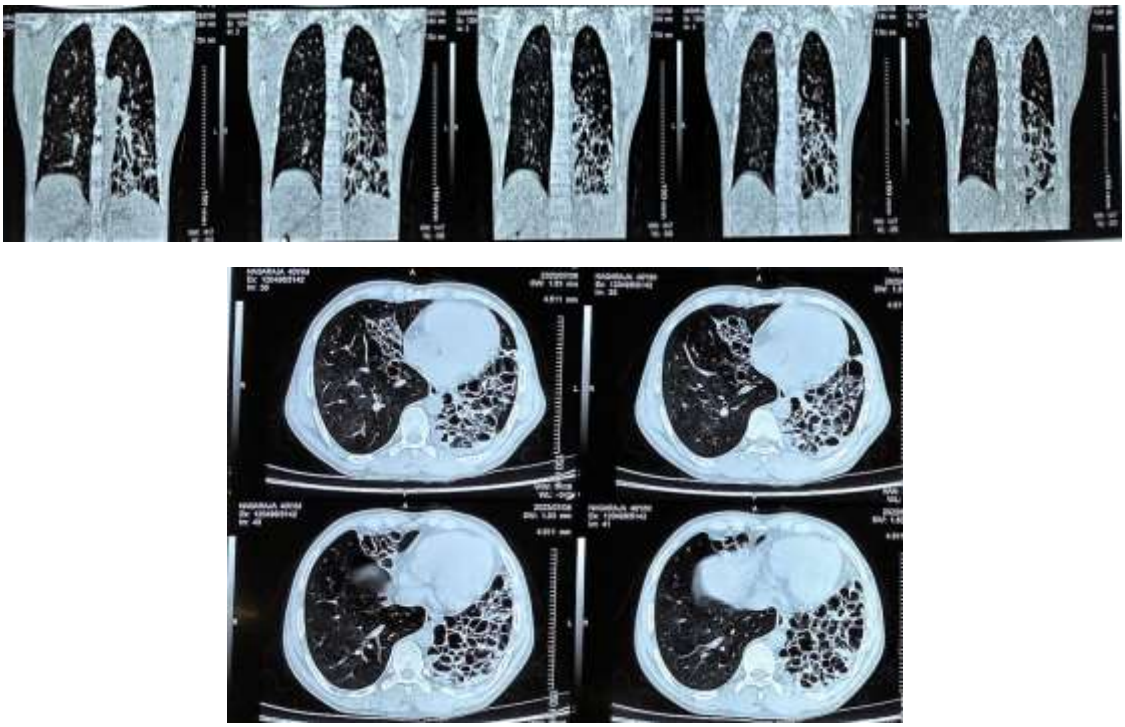

Figure 1 Chest HRCT showing cystic Bronchiectasis

3. Discussion:

The case emphasizes the simultaneous occurrence of chronic obstructive pulmonary disease (COPD) and cystic bronchiectasis, playing a role in the patient's respiratory symptoms. The extensive cystic dilatation of bronchioles observed in the left lung on HRCT points to the presence of multilobar cystic bronchiectasis, which is likely intensifying the individual's breathlessness and cough.

The identification of Candida species and gram-negative bacilli in the sputum culture indicates a mixed microbial infection. The presence of both Candida species and gram-negative bacilli underscores the need to contemplate fungal infections in individuals with chronic respiratory conditions. The patient's past occurrence of a lower respiratory tract infection two years ago might contribute to the varied microbiological results.

The antibiotic regimen administered, consisting of Cefotaxime, Azithromycin, and Metronidazole, is designed to address both bacterial and potential fungal aspects of the infection. The discharge prescription incorporates fluconazole to specifically target the Candida species identified in the sputum culture. Complementing the pharmacological treatment, nebulization with Duolin and budecort, along with chest physiotherapy and Mucinac (Acetyl Cysteine), aims to alleviate respiratory symptoms and enhance airway clearance.

Considering the patient's history of bipolar affective mood disorder, the case underscores the importance of integrated care. The continuation of mood disorder medications (Lithium, Risperidone, Clonazepam) during the hospital stay and upon discharge is crucial for maintaining psychiatric stability. The holistic approach to patient care addresses both respiratory and mental health aspects.

The suggestion of chest physiotherapy and a two-week follow-up recognizes the importance of continuous monitoring and assistance. Follow-up appointments provide an opportunity to evaluate the effectiveness of treatment, identify potential complications, and make adjustments to the management plan based on the patient's response.

4. Conclusion

This case brings attention to the challenges associated with managing respiratory conditions in individuals with multiple comorbidities. A holistic treatment approach, addressing both the respiratory infection and mental health aspects, plays a pivotal role in enhancing the overall well-being of the patient. The integration of comprehensive care, which considers the interconnected nature of physical and mental health, is vital for achieving successful

outcomes. Regular follow-up appointments are crucial, providing opportunities to assess the effectiveness of the treatment, identify any potential complications, and make necessary adjustments to the management plan based on the patient's response. This ongoing monitoring and tailored intervention contribute significantly to the patient's overall health and ensure that the treatment strategy remains dynamic and responsive to the individual's evolving needs. The emphasis on personalized and regular follow-up care reflects a commitment to optimizing the patient's health outcomes in the face of the intricate interplay between respiratory conditions and concurrent comorbidities.

Consent of the patient

Written informed consent was obtained from the patients for publications of this case report and accompanying images.

Author agreement statement

This is an original work done and we solemnly declare that the manuscript has not been published before in any other journals.

We also confirm that all the mentioned authors are aware of all the declarations and agree to them.

References:

1. Shao, H. X., Ning, H., Li, L., Wu, Q., Wang, Y. M., Xing, Z. H., & Wang, C. Z. (2016). Cystic Bronchiectasis Imitating Pulmonary Aspergilloma. *Chinese Medical Journal*, *129*(17), 2137-2138.
2. Reid, L. M. (1950). Reduction in bronchial subdivision in bronchiectasis. *Thorax*, *5*(3), 233.
3. King, P. T. (2009). The pathophysiology of bronchiectasis. *International journal of chronic obstructive pulmonary disease*, 411-419.
4. Jadav, R. S., Dadana, S., & Avula, A. (2023). Cystic bronchiectasis in sarcoidosis. *Clinical Case Reports*, *11*(10), e8045.
5. Hariprasad, K., Krishnan, S., & Mehta, R. (2020). Bronchiectasis in India: Results from the EMBARC and Respiratory Research Network of India Registry. *The National Medical Journal of India*, *33*(2), 99-99.
6. Cartier, Y., Kavanagh, P. V., Johkoh, T., Mason, A. C., & Müller, N. L. (1999). Bronchiectasis: accuracy of high-resolution CT in the differentiation of specific diseases. *AJR. American journal of roentgenology*, *173*(1), 47-52.