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Coexisting Actinomycosis with Tuberculosis Mimicking as Lung Mass

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ABSTRACT

Pulmonary mass lesions are very commonly encountered in our practice. Sometimes they present as homogenous opacity on a Chest Xray or CT scan and sometimes as a collapsed lung. Most of them are malignant and some are benign also. Lung infections rarely present as endobronchial mass. Only histopathology can aid us in diagnosing. One rare disease that can present as an invasive mass lesion is Pulmonary actinomycosis. We present a case of Lung actinomycosis coinfected with Mycobacterium tuberculosis that presented to us with the complaint of right lung collapse and effusion due to endobronchial growth mimicking lung malignancy.

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Introduction

Pulmonary mass lesions are very commonly encountered in our practice. Sometimes they present as homogenous opacity on a Chest Xray or CT scan and sometimes as a collapsed lung. On bronchoscopy, we can either find an endobronchial growth or it could be an external compression. Most of them are malignant and some are benign also. Lung infections rarely present as endobronchial mass. Only histopathology can aid us in diagnosing.

One rare disease that can present as an invasive mass lesion is pulmonary actinomycosis. Actinomyces israelii which is an anaerobic or microaerophilic and non-spore-forming, gram-positive rod, causes Actinomycosis (1). The rarity increases when we encounter coinfection of tuberculosis with actinomycosis. We present a case of Lung actinomycosis coinfected with Mycobacterium tuberculosis that presented to us with the complaint of right lung collapse and effusion due to endobronchial growth mimicking lung malignancy.

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Case Report

A 50 years old non- smoker , diabetic male presented to us with complaints of right sided chest pain and shortness of breath since 5 days which was sudden in onset, and aggravated on lying down. He did not complain of cough, fever, blood in sputum, weight loss, or anorexia. His personal habits were temperate and sober.

Patient was tachypneic at the time of examination. Respiratory system examination revealed a dull note and decreased breath sounds on the right side with no added sounds. Other systems were within normal limits.

He was started on intravenous pain killers and relevant antibiotics.

CXRAY was suggestive of right middle lobe consolidation along with collapse of underlying lung with effusion (figure 1).

Computed tomogram of patient revealed Encysted right pleural effusion with encysted fluid in horizontal fissure with enhancing pleural thickening and collapse of right lower lobe and mediastinal lymphadenopathy (figure 2).

To understand the etiology of collapse, Fiberoptic bronchoscopy was done and it revealed endobronchial growth in right middle lobe (figure 3).

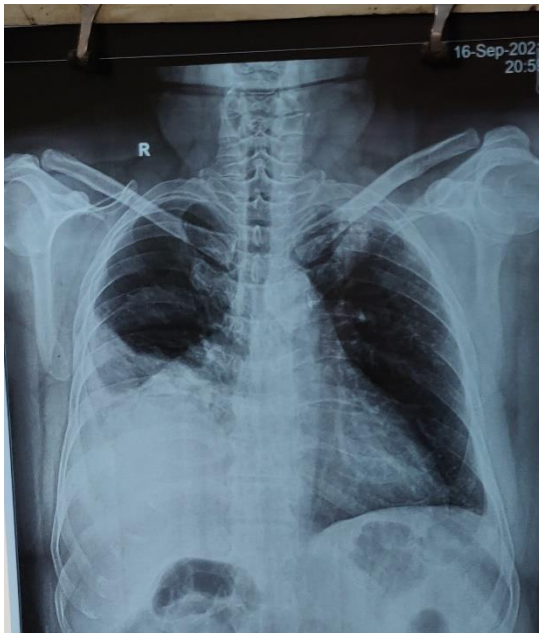

Figure1. Chest x ray of patient showing right lower lobe collapse with effusion.

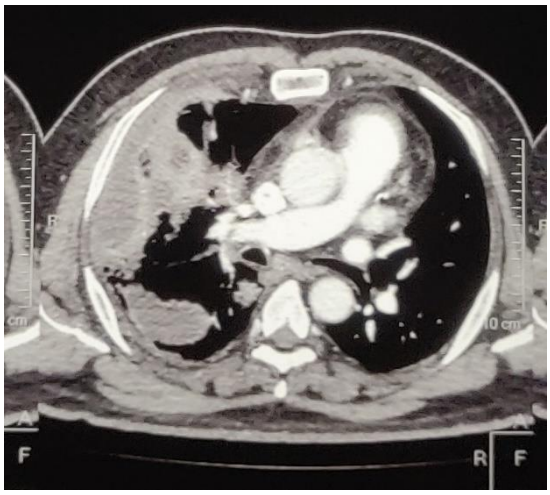

Figure 2. CT thorax of the patient showing right lower lobe collapse with effusion

Endobronchial biopsy and bronchoalveolar lavage (BAL) were done and sent for histopathological, cytological, and microbiological analysis

On histopathology, fair number of actinomycotic colonies are seen along with splendore–hoeppli phenomenon. Dense chronic inflammation, and congested blood vessels with edema were also seen. There was no evidence of any malignancy (figure 4). Silver methenamine stain was positive (figure 5). BAL sample sent for routine investigations came out to be positive for Tuberculosis.

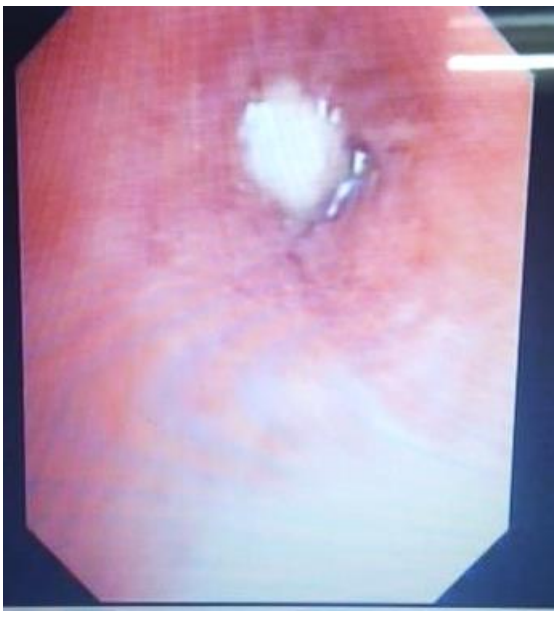

Figure 3. Endobronchial image showing right middle lobe mass.

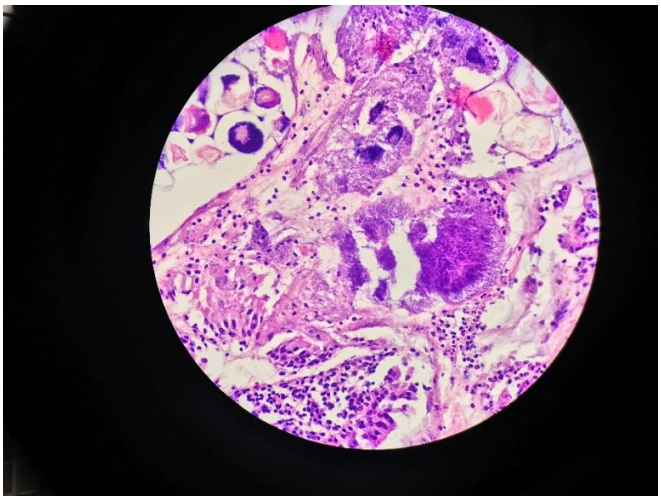

Figure 4. Bronchial biopsy showing actinomycosis with Splendore Hoeppli phenomenon(x20; x40).

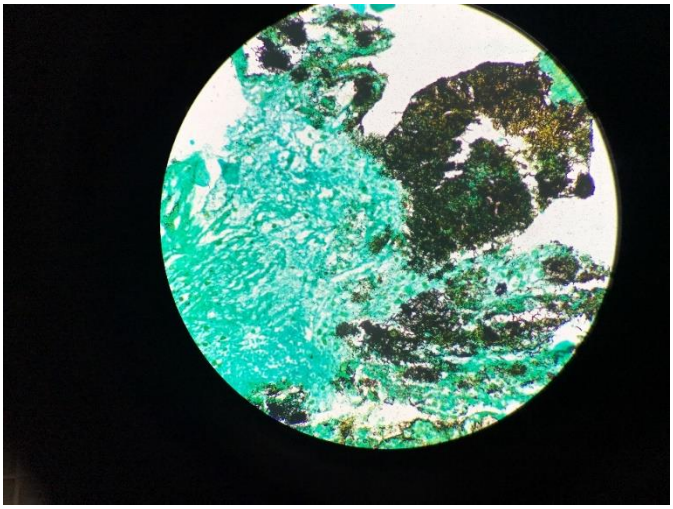

Figure 5. Silver methanamine stain showing actinomycosis (x 20).

Therefore diagnosis of pulmonary actinomycosis with Pulmonary Tuberculosis was made. Due to non-availability of the drug of choice for actinomycosis which is IV PENICILLIN, he was started on INJECTION CEFTRIAXONE 2 GM IV TWICE DAILY and was started on Antitubercular treatment.

CXRAY after 1 week of initiation of treatment showed marked improvement (figure 6).

Discussion

Actinomycosis is a disease caused by a bacteria which is gram-positive, non acid fast, and filamentous in appearance. It was initially believed to be a fungus but later was classified under prokaryotic bacteria. It has a characteristic appearance of sulphur granule and has sun ray appearance. Cervicofacial type is the most common form of actinomycosis. Though the disease can be present usually after aspiration, it can be acquired via other routes too like hematogenous, inhalation, and direct extension.

Pulmonary manifestations of actinomycosis can be varied and common. High index of suspicion is a must to diagnose this. It can present as an endobronchial mass, nodules, cavitations, pleural thickening, pleural effusions, and hilar or mediastinal lymphadenopathy (2,3). As pulmonary actinomycosis is a rare and challenging diagnosis to make, it is commonly confused with other chronic suppurative lung diseases and malignancy. This being a highly treatable condition with an excellent prognosis if picked up early, respiratory physicians should keep this as a differential when a patient with persistent pulmonary shadow presents. Hence appropriate invasive tests and histopathological examinations must be done to aid in diagnosis.

There has not been any described immunological factors which predisposes an individual to actinomycosis. Presence of Mycobacterium tuberculosis with actinomycosis is a highly rare coexistence. It has been hypothesized that growth of actinomycotic bacteria can hinder the growth of mycobacterium (4). However immunocompromised state can be the reason for the coexistence of both the diseases like in our case patient was diabetic.

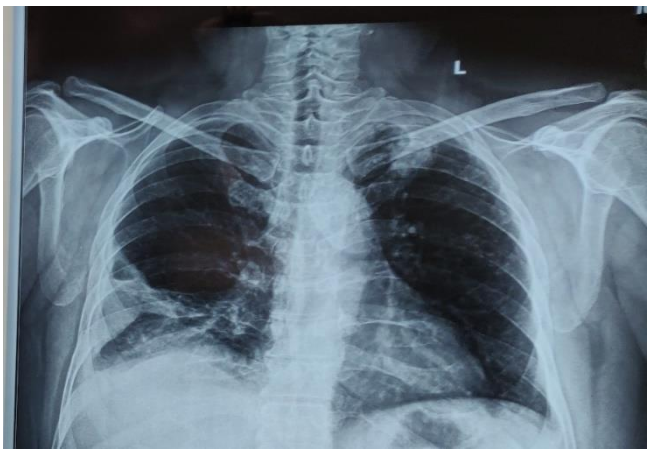

Figure 6. Chest x ray of the patient after 1 week of treatment.

To the best of our knowledge, there are only less than 10 cases reported in the literature of this coinfection (5). In most of the cases reported, they are reported as empyema or lung cavities, or consolidation. However, presentation as endobronchial mass as in our case is quite unusual and rare.

Hence we conclude that infection should be ruled out in all patients presenting as lung mass. If they are diagnosed at the right time, they can be treated.

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