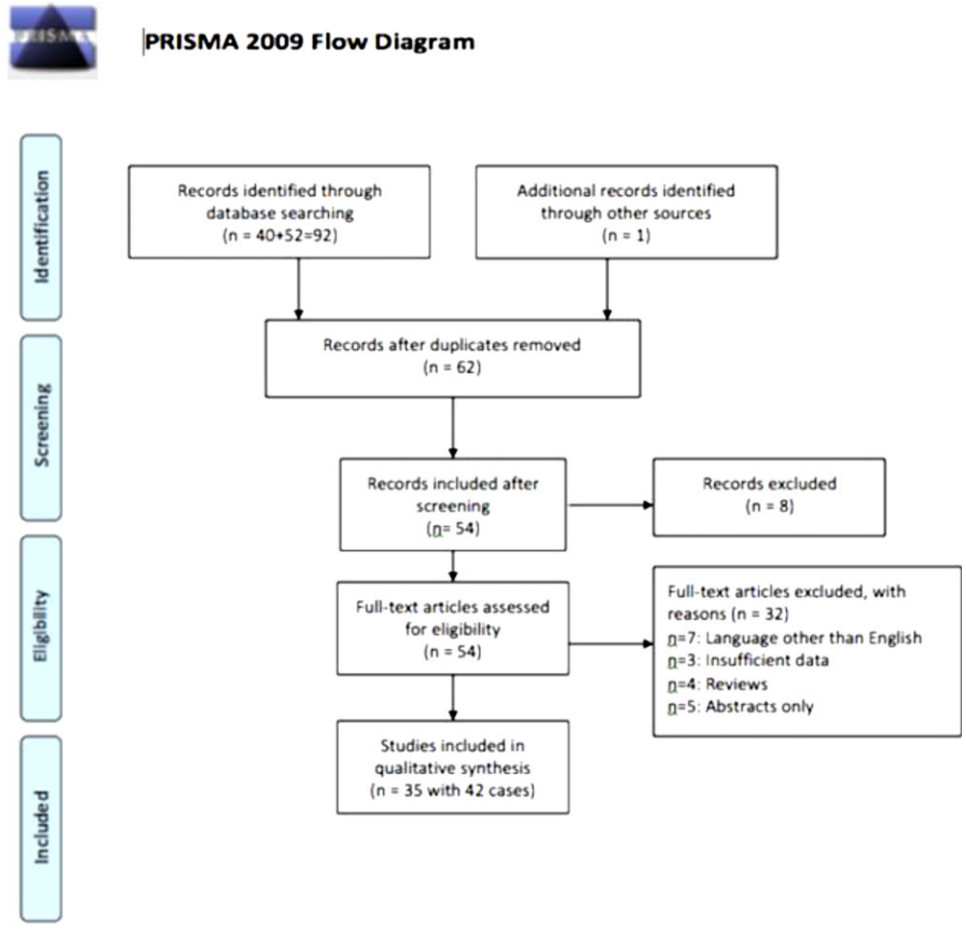

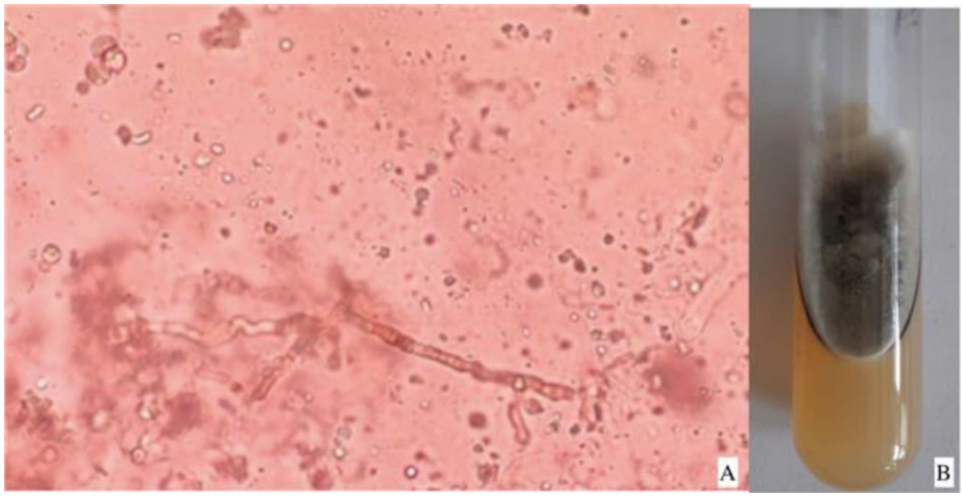

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Chronic pulmonary aspergillosis (CPA) in post tuberculosis sequele— aclinical experience from tertiary care

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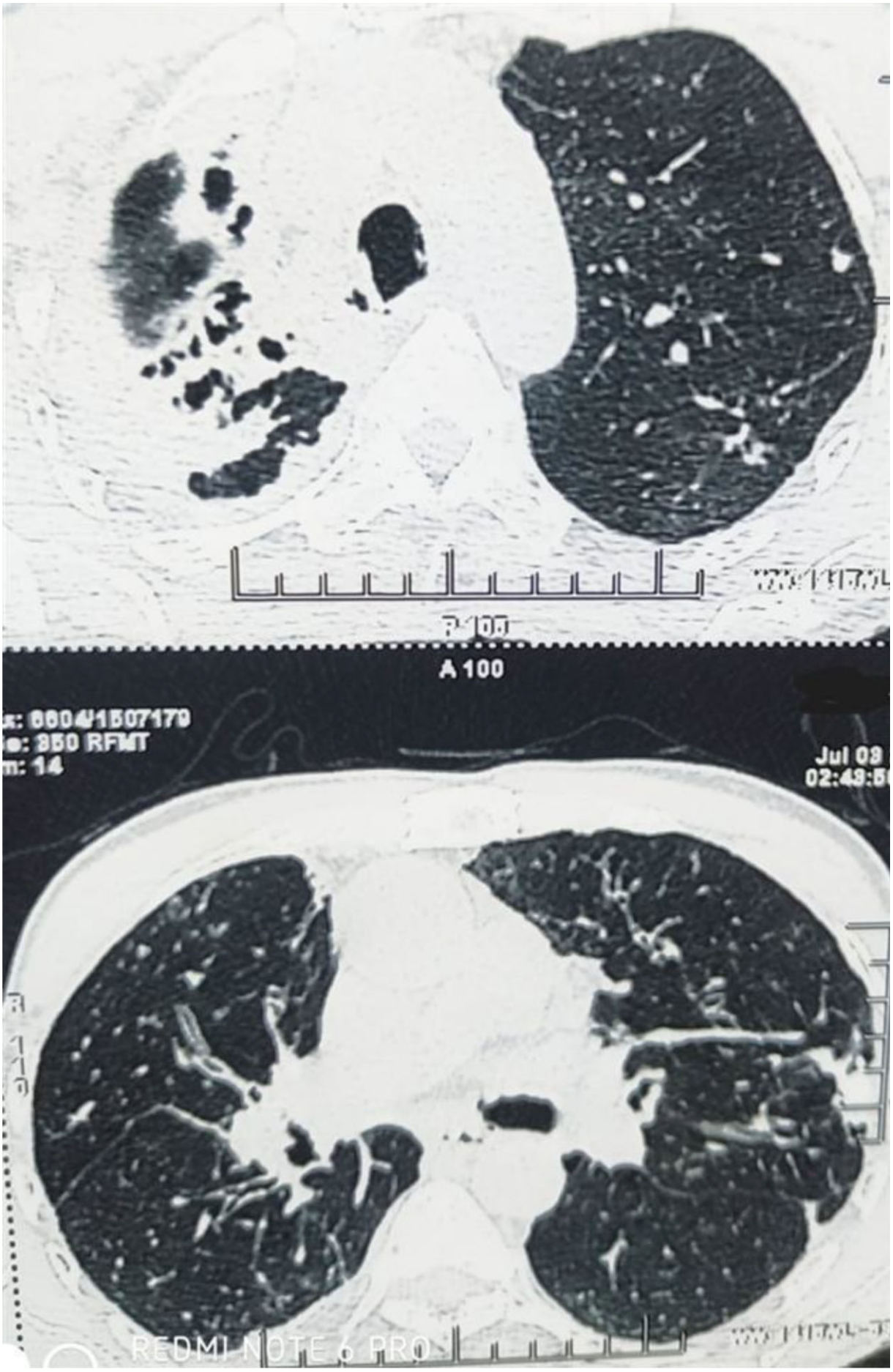
Poster session 2, September 22, 2022, 12:30 PM - 1:30 PM

Introduction: Chronic pulmonary aspergillosis (CPA) is a spectrum of illnesses clinically presenting as a persistent cough, dyspnea, hemoptysis, fatigue, and weight loss and radiologically can range from single aspergilloma, *Aspergillus* nodule, or chronic cavitary pulmonary aspergillosis (CCPA) which can progress to chronic fibrosing pulmonary aspergillosis if left untreated.[1] CPA has high morbidity, burden in India estimated to be in a 5-year prevalence of 24/100 000.[2] The commonly used criteria for diagnosing CPA include cough or hemoptysis for 1 month, raised *Aspergillus*-specific IgG, absence of positive GeneXpert test for Mycobacterium tuberculosis and either paracavitary fibrosis or a fungal ball on imaging of the thorax or progressive cavitation (either new cavitation or deterioration of pre-existing cavitation) on serial chest radiographs. Pulmonary tuberculosis (PTB) is the important predisposing risk factor for CPA,[3] India being an endemic country, incidence of CPA may be underestimated or it may be misdiagnosed as smear-negative tuberculosis. Microbiologically, diagnosis by direct confirmation of *Aspergillus* spp infection (microscopy or culture from respiratory samples) may not be always positive, in such a scenario the immune response to *Aspergillus* spp. by measuring *Aspergillus* specific Immunoglobulin Ig G in clinically suspected cases may be used for diagnosis of CPA.

Method: This is a cross-sectional conducted in a tertiary care hospital, New Delhi, India. The patients with previous history of pulmonary tuberculosis who presented with symptoms of cough, hemoptysis, fever, shortness of breath, chest pain, and weight loss of >12-week duration were enrolled in the study. Relevant investigations including blood tests, chest imaging, sputum examination for bacterial infections, fungal (KOH mount), and tuberculosis (AFB smear, CBNAAT, mycobacterial cultures) were done. Microbiological evidence included a positive *Aspergillus*-specific IgG (cut off > 8 units/ml) or positive serum galactomannan index (GMI) (cut off >1 according to EORTC/MSG guidelines) or KOH mount on sputum showing branching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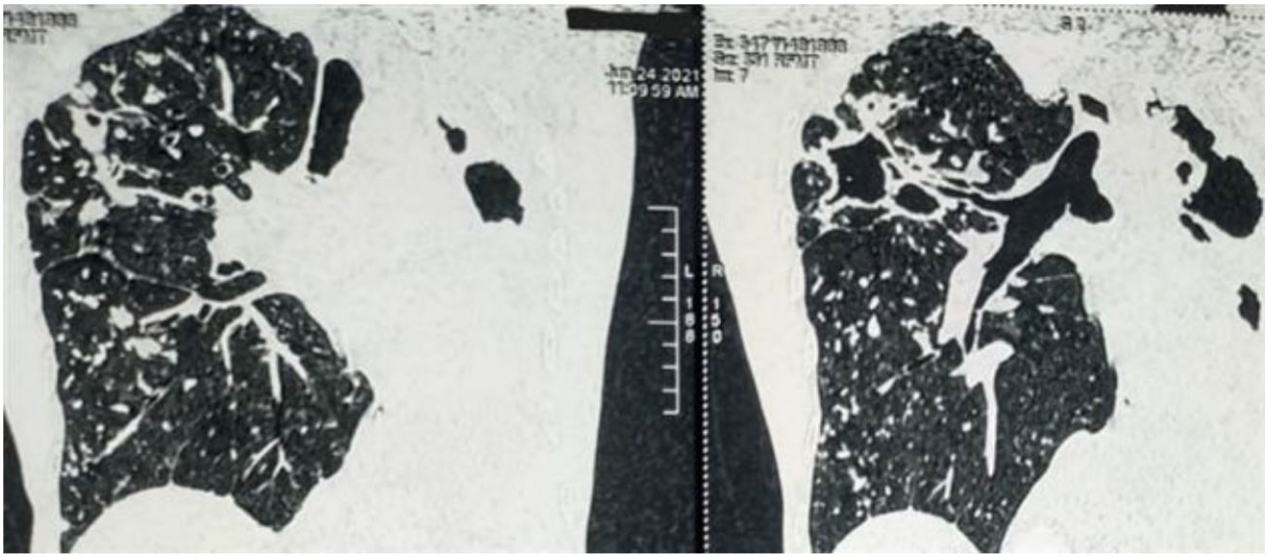

Fig.102

hyaline septate hyphae morphologically suggestive of *Aspergillus* spp. Patients who were diagnosed with CPA according to criteria were treated and followed up.

Results: A total of 15 patients were screened in the study, 4 patients who had concurrently detected pulmonary tuberculosis detected by Genexpert, were excluded from the study. Majority of patients presented with complaints of recurrent episodes of cough and hemoptysis. Imaging features included cavitation, bronchiectasis, pleural thickening, and fungal ball. Sputum microscopy for fungal elements was positive only in 10 patients. The serum *Aspergillus* Ig G (values ranged from 19.8-200 u/mL) was raised in all patients while serum GMI above cut-off was present in only 5 patients. All confirmed CPA patients were managed with voriconazole for 4 months. Following 4 months of treatment, all patients had favorable outcomes in terms of radiological improvement and clinical cure.

Conclusion: CPA is an underestimated post-PTB sequel and should be considered as differentials in patients with respiratory symptoms in post TB patients. *Aspergillus* Ig G and chest imaging are recommended as initial diagnostic tools for diagnosing CPA.

Sources:

1. Denning DW, Cadranel J, Beigelman-Aubry C et al. European Society for Clinical Microbiology and Infectious Diseases and European Respiratory Society. Chronic pulmonary aspergillosis: rationale and clinical guidelines for diagnosis and management. *Eur Respir J*. 2016; 47(1): 45-68.
2. Agarwal R, Denning DW, Chakrabarti A. Estimation of the burden of chronic and allergic pulmonary aspergillosis in India. *PLoS One*. 2014; 9(12): e114745.
3. Page ID, Byanyima R, Hosmane S et al. Chronic pulmonary aspergillosis commonly complicates treated pulmonary tuberculosis with residual cavitation. *Eur Respir J*. 2019; 53: 1801184

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Secondary organizing pneumonia caused by *Aspergillus flavus* in immunocompromised patients

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Introduction: Fungal pneumonia is a known complication in immunocompromised patients. However fungal infection leading to organizing pneumonia (OP) is a rare entity. Here we present two cases of co-occurrence of OP with *Aspergillus* lung infection

Case 1: A 33-year-old male with a history of recurrent oral-genital ulcerations and low-grade fever for the last 3 months presented with shortness of breath and high-grade fever for 10 days. On presentation he was hypotensive, tachycardic, and tachypneic, examination revealed bilateral crackles. His initial investigations were hemoglobin (Hb) 8.8, total leucocyte counts (TLC) 13 000, platelet 190 000, liver function test (LFT), and kidney function test (KFT) were normal. High-resolution commuted tomography (HRCT) revealed multifocal areas of interlobular septal thickening with ground glass opacity and patchy areas of consolidation seen in bilateral lung fields (Fig. 1). He was initially managed with broad-spectrum antibiotics and oxygen support by a high flow nasal cannula (HFNC); as the condition deteriorated, he was mechanically ventilated. Fibreoptic bronchoscopy with bronchoalveolar lavage (BAL) was performed. Investigations for tuberculosis, nocardia, pneumocystis carinii, and bacterial infection in BAL was negative. Galactomannan index (GMI) in BAL was 3.15 and grew *Aspergillus flavus*. Transbronchial biopsy revealed features consistent with organizing pneumonia. He was started on voriconazole and steroids. He was diagnosed with undifferentiated connective tissue disorder. As the patient's condition improved in due course of time, he was extubated and discharged in stable condition on voriconazole and steroids and is currently doing fine.

Case 2: A 56-year-old male known case of mantle cell lymphoma on consolidation therapy, presented with 15 days history of shortness of breath and high-grade fever. Chest examination revealed decreased breath sounds bilaterally in the lower lung zones with lower zone crackles. Initial investigations showed Hb 10.9, TLC 3.90, platelet 150000, KFT and LFT were normal. HRCT scan revealed multilobular areas of consolidation showing air bronchogram with ground glass opacities in bilateral lung (Fig. 1). Bronchoalveolar lavage fluid (BALF) revealed the growth of *Aspergillus flavus* and was GMI 1.97. Investigations for tuberculosis, nocardia, pneumocystis carinii and bacterial infection was negative. Transbronchial biopsy revealed features consistent with organizing pneumonia. He was started on combination therapy with voriconazole and micafungin along with steroids. Initially, he was managed with oxygen support but his oxygenation gradually worsened, he was mechanically ventilated, and received multiple pruning sessions. Patient had refractory organizing pneumonia, did not show any improvement even after 1 month, and left against medical advice.

Conclusion: Bacterial and viral infections are the common causes of secondary OP. Fungal infections implicated in secondary OP are rarely described, of which there are reports of Pneumocystis jiroveci (PJP) and *Penicillium* infection leading to secondary OP. *Aspergillus flavus* is a ubiquitous fungal agent and is considered as pathogenic in immunocompromised settings can lead to secondary organizing pneumonia. High index of suspicious for OP is always to be kept in mind while treating *Aspergillus flavus* pneumonia.