Poster Presentations

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Lodmellodysplasia: an emerging cause of fungal arthritis
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Objectives: Lodmellodysplasia, earlier considered as a sexual state of Candida parapsilosis, was described as a distinct species isolated on rubefaciens agar screening. Recent cases of human infections by this year have been described from Mexico, China, Maldives, Korea, Australia, and the USA. We describe here eight cases of fungemia by L. lodmellodysplasia from a tertiary care hospital in North India.

Methods: Clinical chart reviews identified all cases of fungemia due to L. lodmellodysplasia. Isolates were identified using standard methods. Identification was confirmed by sequence analysis of the internal transcribed spacer region of the large subunit ribosomal DNA. We performed antifungal susceptibility testing for amphotericin B, fluconazole, voriconazole, posaconazole, caspofungin, anidulafungin, and itraconazole by the microbroth dilution method recommended by the Clinical and Laboratory Standards Institute (CLSI).

Results: We report eight cases of fungemia from L. lodmellodysplasia at our tertiary care center. Out of these, three were infants <1 month and five were adults (3 males and 2 females). The mean age of adults was 43 ± 4 years. Among the pediatric cases, underlying risk factors included aspergillus fumigatus in one, Kawasaki disease in one, and late onset neonatal LPS (NOHS). Among the adults, underlying illness included acute kidney injury (n = 2), septicomotor pneumonia with bowel gangrene (n = 1), diabetes (n = 1), and central nervous system (CNS) lymphoma (n = 1). The aortic associated included the history of surgery (n = 3), admission to ICU (n = 3), presence of antifungal resistance (n = 4), and presence of central venous catheter (n = 1). Seven patients were on broad-spectrum antibiotics. The mean stay in the hospital was 23 ± 8 days. All patients were discharged alive except one who died of malignant disease.

Conclusions: Lodmellodysplasia is an emerging infection causing fungemia in patients with congenital abnormalities and undergoing surgery or invasive interventions. Though an antifungal breakthrough is rare for this fungus, all isolates exhibited low MICs to all the antifungals.

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Incidence of chronic pulmonary aspergillosis in a cohort of bacteriologically confirmed TB patients at a tertiary hospital in Ghaziabad

Background: The incidence of chronic pulmonary aspergillosis was analysed in a cohort of patients with bacteriologically confirmed tuberculosis. Aspergillus species have been reported in bronchoalveolar lavage samples from patients with active pulmonary tuberculosis.

Methods: Consecutive patients in whom M. tuberculosis was detected by molecular analysis (GeneXpert MTB) and subsequently placed on anti-TB treatment were enrolled. They were screened for C. albicans on baseline and the on-treatment day (n = 20) and at the end of 2-months (n = 13). Sputum samples were processed for detection of the fungus by standard methods (QUL) using St. George’s Respiratory Questionnaires, imaging (chest radiography and/or CT scan), and serology testing (HEB: Aspergillus flg A(IgM) and culture). fungal antigen was assessed by a diagnostic algorithm developed for resource-constrained settings. During follow-up retest, CT scan was done after aspergilloserology showed negative to positive. GeneXpert MTB or acid-fast bacilli (AFB) smear results were obtained from laboratory records during follow-up retest.

Results: A total of 46 patients were enrolled at baseline, of whom 34 (74%) were admitted at the end of treatment. Only 11 patients were diagnosed as positive for chronic aspergillus at baseline and received treatment. Patients with positive test at baseline were admitted at last 6 months of treatment. For those with positive test at baseline and negative test at the end of the treatment, fungal infection was not confirmed. The sensitivity of conventional methods and molecular assays for the diagnosis of chronic pulmonary aspergillosis was confirmed by the results of laboratory tests for fungal detection.

Conclusions: While the laboratory detection of fungal infection is routine for patients with active tuberculosis, the clinical significance of these findings is not clear. Further studies are needed to establish the role of fungal infection in tuberculosis treatment outcomes.

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The uncommon meets the common: invasive Aspergillus fungo-bacteremia in non-organ transplant patients – a rare case

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Objectives: To present details of a case of fungal co-infection (aspergillosis and mucormycosis) including clinical course, laboratory diagnosis, treatment, outcome, and management.

Methods: Clinical features of 7 cases of fungal co-infection (5 pulmonary, 1 rhino-orbito-carotid or sino-nasal) were collected from the microbiology lab and the pathology department for fungal diagnosis and fungal culture were retrieved from laboratory records. Presence of aspergillus and rhizopus hyphae in direct microscopy of clinical samples and/or growth of Aspergillus fumigatus and Mucorales in culture was considered as evidence of probable mucormycosis and aspergillosis (as per EORTC guideline).

Results: Mucormycosis, carries lung disease, and renal failure with metabolic acidosis were unique risk factors observed in fungal co-infection, while use of systemic corticosteroids for treatment of ARDS/COPD infections was common in rhino-orbito-carotid or sino-nasal (SN) co-infection. Diabetes mellitus was a common risk factor for both groups of cases.

Conclusions: Corticosteroids, rhinocerebral, cavernous changes in and around the nose were the most frequent radiological features in pulmonary fungal co-infection cases, while mucosal thickening in multiple paranasal sinuses, and involvement of orbit and cavernous sinus were the most frequent features in ROC or SN infection.

Presence of aspergillus and rhizopus hyphae in direct microscopy was seen in tissue samples from all BOS cases, which enabled early intervention. However direct microscopy was not indicative of co-infection in any of the ovarian samples from pulmonary cases, and diagnosis was only delayed by culture, leading to delayed initiation of treatment or not treatment. Liposo- mal amphotericin B (SABM) ranging from 50-200 mg/kg was used for treatment of fungal co-infection, with posaconazole 400-800 mg/d as an oral drug when IFM was not tolerated.

Out of three pulmonary fungal co-infection cases, only one received appropriate antifungal treatment but expired nonetheless. One of the two antemortem patients, one expired, and one was discharged after medical advice without resolution of symptoms. Surgical interventions were done for any lesions. 3 out of 4 cases of ROCS co-infection were appropriately managed with immediate surgical debridement and survival. The remaining patient received appropriate antifungal therapy and was discharged.

Conclusions: Fungal co-infection with aspergillosis and mucormycosis is a serious condition requiring early intervention. This is facilitated by high sensitivity of direct microscopy in tissue samples used for diagnosis in ROCS co-infection, but hindered by low sensitivity of direct microscopy for fungal co-infections rather than lung biopsy. Robust clinical advice services, early diagnosis, and combined surgical and pharmacological approaches are crucial to a favorable outcome.

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Penicillium-like myc: caused red-headed, but remained unidentified

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Objectives: This case highlights the presence of a self-limited respiratory mycetoma in an immunocompetent host and need for fungal sequencing in diagnosis of such rare cases.

Methods: A 24-year-old, apparently healthy software engineer, had an overnight journey in an air-conditioned bus from Hyderabad to Pune. The next day, she developed breathlessness followed 5 days later by fever and cough without dyspnea nor wheezing. Her chest X-ray was found to be normal. Three days later she was admitted to our hospital. X-ray chest and CT chest showed bilateral radiolucent nodules. She had a history of 3 to 4 days of cough, but no difficulty in breathing. She was referred to ID as a case of suspected tuberculosis, but her presenting symptom being sore throat, the acuteness of symptoms, presence of typical radiological changes which were absent in X-ray. Her chest X-ray done 3 days earlier were wrong against the diagnosis of TB. Inhospitalial fungal and viral pneumonias were hence considered.

Transbronchial biopsy showed an intense alveolar inflammatory exudate, but GMS staining did not reveal any fungal hyphae. BAL Gallantostain, Xpert MDR TB were negative. Both BAL and CT guided lung nodule biopsy samples grew a mold. Red pigment formation in culture and its morphological appearance on LCBR mount (Fig. 2) led to a diagnosis of Penicillium species infection. MALDI TOF MS, which had a low for Penicillium sp in its 2018 database, failed to identify the organism, leading the authors to consider a different Penicillium species.

Since the patient was showing clinical improvement, a self-limited infection was thought of and therapy was withheld with cautious optimism. The patient was completely asymptomatic after 10 days and CT chest done 20 days later showed complete resolution of the lesion.

We believe that this illness was due to inhalation of spores from the air-conditioned room, altering a brick fungus respiratory infection. The organism grows from a brick or a barked tree from rable spores, but it failed to germinate into hyphae in the human host and hence was not seen on histopathology and did not produce galactomannan which is only infused from the tips of growing hyphae.

Funga are isolated from poorly maintained air conditioning rooms. In this case, the Penicillium like organism failed to produce progressive disease in the immunocompetent host. If the same organism could be cultured from cultures of respiratory mucosal with the clinical, the source, transmission, and disease linkages could have been established in this case.

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