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A Psittacine bite and subcutaneous Zygomycosis in immune competent: Case with therapeutic challenge

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Objectives: Primary objective: To document a case of subcutaneous zygomycosis following a Psittacine bite in an immune-competent in India.

Secondary objective: To follow-up the case till microbiological and clinical cure.

Method: A case report entry prospectively carried out during 1.5 years of hospital visit of the patient with subcutaneous zygomycosis. This had ethical approval and patient consent obtained. A detailed account of case progression from date of first hospital admission to final cure was noted. A 56-year-old female from Vidisha in Madhya Pradesh India, apparently well 2 years back following a wild parrot bite on her back, causing an initial ulcer on infrascapular area gradually spreading bilaterally visited outpatient department of AIIMS, Bhopal. With prominent weight loss and non-healing ulcer; asymptomatic initially, ruptured spontaneously formed sinuses with exudate. Nodules and spontaneous rupture of nodule were mentioned. Provisional clinical differential diagnoses were nocardiosis, deep fungal infection, and Phagedenic ulcer. Tissue biopsy sent for microbiological and histopathological evaluation showed broad pauciseptate hyphae with right angle branching and bulging on direct microscopy suggesting subcutaneous zygomycosis. Histopathology H&E, and PAS showed similar morphology. A second sample sent was exudate from infrascapular region and showed broad pauciseptate hyphae with buildings on KOH mount. The patient was treated and discharged with some relief. Noncompliance to prescribed antifungal led to progression and horizontal spread forming plaque within months. A saturated solution of potassium iodide (SSKI) and itraconazole started. Lesions improved. The patient was again non-compliant and the lesions increased in size. The patient was reviewed again for the exacerbation and worsening. Around Day 10; SDA with chloramphenicol showed whitish growth with satellite colonies and LPCB showed broad quasi-septate hyaline hyphae, sporangia elongated, and beak with rounded zygospores suggesting Basidiobolus species. The patient received itraconazole, SSKI, and terbinafine. Species confirmation as Basidiobolus ranarum from PGIMER Chandigarh Mycology Reference center India was done.

Results: After 1.5 years, clinical improvement and final biopsy showed no growth and microscopy negative. The patient is on regular follow-up.

Conclusion: This study highlights the traumatic implantation and zoonotic potential of fungal species. Clinical suspicion of fungal etiology and timely mycology laboratory diagnostic support is key to address such cases.

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An unusual recurrent case of Cryptococcal sacroilitis in an immunocompetent elderly female in Rajasthan, India

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Background: *Cryptococcus* lives in the environment all over the globe. Although it spreads via inhalation route still most of the exposed individuals never get sick as the majority of cases are seen in immunocompromised. Objective of this clinical case report is to highlight the rare fungal etiology associated with iliac bone abscess to avoid incorrect diagnosis and prompt management of case.

Case Presentation: A 70-year-old elderly female presented with hip pain for a month duration, not relieved with analgesics in September, 2021. In MRI a well-defined irregularly marginated hyperintense focal lesion was found in left iliac bone with joint effusion suggestive of infective etiology, tubercular, or less likely metastasis.

CT-guided biopsy reported occasional hyphae-like fragments giving an impression of acute on chronic osteomyelitis with suspicion of fungal infection. Culture reported *Cryptococcus neoformans*. Fungal markers and Beta-d glucan were indeterminate and Galactomannan was found negative for the sample. Extrapulmonary TB was ruled out by AFB staining, MGIT Culture, and GeneXpert MTB. Bone scan, tumor markers, and PET scan ruled out osteolytic lesion secondary to metastasis. Though PET Scan and HRCT thorax confirm pulmonary involvement giving a picture of bilateral interstitial lung disease along with multiple enlarged lymph nodes.

Patient serum was found negative for HIV, HBV, and HCV. Liver and renal function tests were within normal range and in hematology, ESR was raised (50; normal range:0-20). Patient is hypertensive with HbA1c of 5.3. There was no history of travel, avian exposure, weight loss, and COVID-19 infection. Patient was started on voriconazole and considering generalized lymphadenopathy, a therapeutic trial of anti-tubercular therapy was started which was stopped within a week on patient non-compliance. Abscess resolved with voriconazole and patient was discharged.

In February 2022, Patient presented with similar complaints. CT scan of this fluctuant nodule depicted hypoechoic lesion which was ultrasound-guided drained. Sections show many rounds of oval fungal organism which were found PAS positive with mucicarmine and alcian blue positive capsule. Budding yeast cells were seen on KOH mount and India ink preparation demonstrated capsule which was confirmed by Cryptococcal Antigen test giving an overall impression in favor of Cryptococcosis. Patient was started on oral fluconazole and Injection liposomal amphotericin B 250 mg for 14 days.

Discussion and Conclusion: This is the first case of skeletal Cryptococcosis at our institution which was managed by antifungals without surgical debridement resulting in resolution of abscess. Isolated focal iliac bone cryptococcosis is unusual but may occur in immunocompetent with everyday exposure to the organism. Herein, Patient had bilateral lung involvement along with multiple lymphadenopathies with no evidence of TB bacilli which inferences that the isolate most likely originated from environmental bird droppings and has disseminated from pulmonary lesion to the iliac bone. The radiological findings of iliac cryptococcosis abscess were nonspecific. A definitive diagnosis was made on histopathological and fungal examinations of ultrasound-guided drained abscess. Patient will be followed in the near future for relapse or any other medical issues related to the case.