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A Study on Community-Acquired Methicillin-Resistant Staphylococcal Aureus Infections in Coimbatore Children

KEYWORDS: Cryptococcosis, Chorioretinitis, Skin nodules

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ABSTRACT *The incidence of Cryptococcal infection is high in developing countries such as India. Cryptococcosis is mainly a disease of immunocompromised patients. The outcome of the disease can be severe unless the disease is diagnosed early in the course of illness. Presentation in an immunocompromised male with a combination of neurological, cutaneous and ocular involvement is extremely rare.*

INTRODUCTION

Cryptococcus Neoformans is saprophytic encapsulated yeast with a worldwide distribution in soil, found usually in avian excreta, most commonly from pigeons. Cryptococcosis continues to cause significant morbidity and mortality in immunocompromised as well as immunocompetent patients. Amongst all fungi causing meningitis, Cryptococcus is most common. Recent data suggest that incidence of Cryptococcus infection are increasingly high in developing countries. Infection is acquired by inhalation of organism and could be asymptomatic and limited to lungs especially in the immunocompetent host. The organism is disseminated by the blood stream particularly to the central nervous system where severe meningoencephalitis may develop.[1] Before the introduction of Amphotericin B in 1996 this disease was almost always fatal. Many reports of cryptococcosis have appeared but few having ocular involvement. The eye may be affected secondarily to orbital invasion, or the eye may be involved directly. Cutaneous involvement is uncommon.

CASE REPORT

A 22 year old male, resident of a suburban area in Pune, India, student by occupation was admitted with high grade, intermittent fever, and severe persistent headache lasting 15 days associated with multiple episodes of vomiting and lethargy, photophobia and blurring of vision in left eye. He had also noticed multiple papular lesions on his face and upper trunk since a week before admission.

History of admission for right lung middle zone pneumonia 3 years before; was diagnosed to be retroviral positive, treated for Pneumocystis pneumonia and then put on anti retroviral therapy (ART). Both his parents had succumbed to Acquired Immunodeficiency Syndrome (AIDS) few months prior to that. However after 9 months of ART, patient was lost to follow up until this admission.

No history of seizures/ loss of consciousness/ head trauma/ any focal neurological deficit, weight loss, drug abuse including steroids and blood transfusions.

On examination patient was febrile - T -101^0 F, P – 108/min regular. He was conscious, oriented but lethargic with GCS of 15/15, mild terminal neck stiffness, no focal deficit, plantars were bilateral extensor. Rest of the systemic examination did not reveal any significant finding.

He showed multiple pearly-white central umbilicated papulo nodular lesions over the face (shown in figs 1) and rest of the body.

Ophthalmologic examination showed reduced visual acuity in Left Eye (Finger counting upto 3 metres) and right eye (6/9) .Fundus examination revealed changes as shown in fig. 2 & 3 suggestive of chorioretinitis.

On further evaluation, Hemogram and Biochemical investigations were within normal limits. Cerebrospinal fluid (CSF) examination revealed 92 cells, all lymphocytes with proteins of 141 mg/dl and glucose of 28 mg/dl (corresponding blood glucose was 136 mg/dl). No microorganisms present on Gram, Ziehl Nelson stains and India ink preparation but **CSF Cryptococcal latex agglutination test was positive**. Absolute CD4 count was 23. One of the skin nodules was biopsied. The histopathology report (Fig 4) confirmed the diagnosis of **cutaneous cryptococcosis -**numerous yeast cells surrounded with halos with endothelial cells and epithelioid cells s/o Cutaneaous Cryptococcosis.

DIAGNOSIS: Cryptococcal Meningitis with chorioretinitis with Disseminated Cutaneous Cryptococcosis with Retroviral positive status.

TREATMENT: Patient was treated with Inj Amphotericin B (deoxycholate) 45 mg daily in 500 ml 5 % dextrose with oral Fluconazole 400 gm twice daily for 14 days. I/V Flucytosine was not available. Combination ART was started after 1 week of antifungal therapy.

(Trimethoprim/sulphmethoxazole) DS OD and

Azithromycin 1200 mg once a week, were also initiated.

At 3 months follow up, patient had no fever/headache, skin lesions had resolved. Vision had improved - , fundus showed resolution in both eyes.

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Fig -1 -

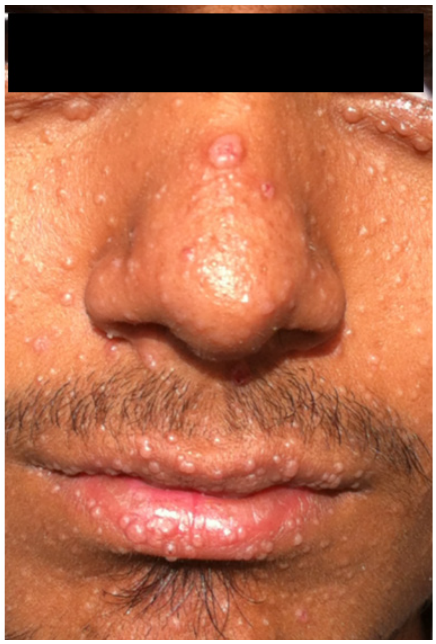

Fig -1 - Multiple Pearly white papules and nodules were noted on the face with some diffuse lesions spread over the body. Some of them showed centre umbilication.

Fig-2-

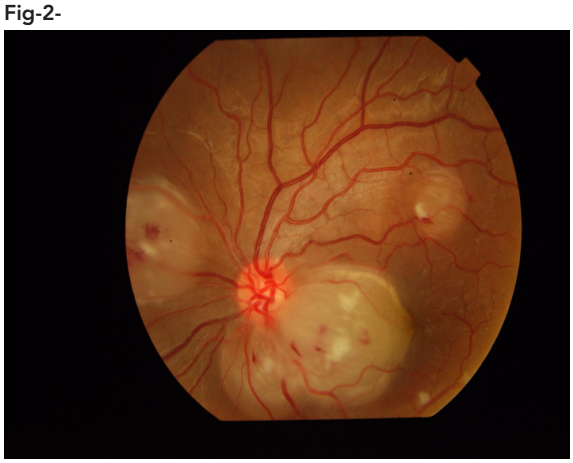

Fig-3-

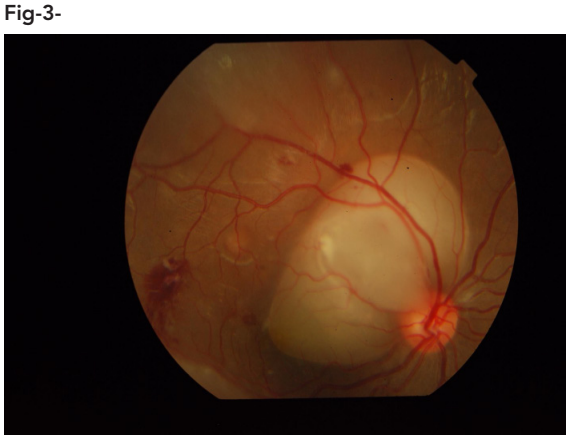

Fig -2, Fig-3 Fundus Photography suggestive of (large area of chorioretinitis at Posterior pole with exudative retinal detachment) CRYPTOCOCCAL CHORIORETINITIS

Fig -4-

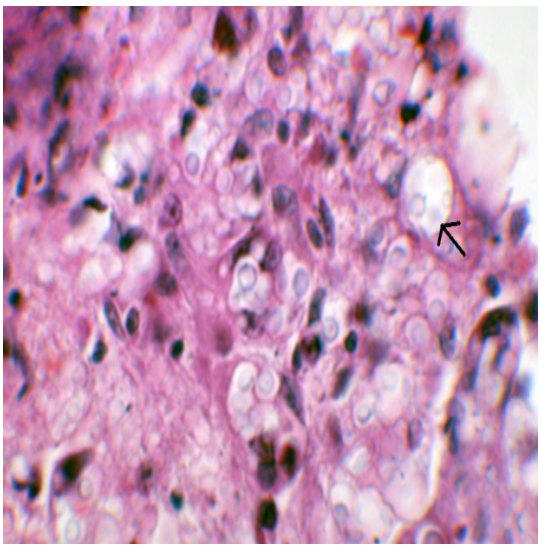

Fig -4-
Histopathology report of biopsied tissue shows Numerous Yeast cells surrounded with halos with endothelial cells and epithelioid cells s/o Cutaneaous Cryptococcosis.

Discussion:
After Cytomegalovirus, Pneumocystis carinii and Mycobacterium avium intracellulare , Cryptococcus neoformans is fourth commonest cause of life threatening infection in AIDS Patients. Cryptococcal meningitis lacks typical features of meningitis such as neck stiffness or meningeal signs. Patients with a very low (<100) CD4 count at presentation are at risk of Cryptococcal meningitis. Diagnosis may be missed if only India ink test is done of CSF since it has a poor sensitivity of only 50-80%[2]. Latex agglutination is more sensitive and reasonably specific for diagnosis[3].

However, this dermatological finding is not specific for Cryptococcosis, and sometimes Molluscum contagiosum and Penicillium Marneffei infection may also present with similar manifestations .Secondary Cutaneous Cryptococcosis occurs in 10% to 20% of those of systemic involvement[4]. In generalised forms, especially in patients with AIDS, the infection presents as multiple lesions,most of them simulating molluscum contagiosum .The skin typically appears pedunculated. Dome shaped papules with an umblicated centre,acneiform, nodular& herpetiform lesions mimicking cellulitis are also recorded. However Cellulitis, ulceration and whitlow are the most common clinical features of Primary Cutaneous Cryptococcosis [5].

Cryptococcus neoformans rarely affects the eye, but if it does then most common form of direct eye involvement is chorioretinitis. Cryptococcal infections may occur in 5-10% of patients with AIDS and are associated with both direct and indirect ocular complications.[6] Cryptococcal infection is a common occurrence in AIDS resulting in meningitis and secondary ocular involvement. Chorioretinitis, endophthalmitis, or both, caused by direct intraocular invasions of the organism have been described in immunocompromised patients. Visual loss caused by Cryptococcal infection has been demonstrated to result from invasion of the visual pathways, including the optic nerve, tract, and chiasma[7]. The most common findings were choroiditis with or without associated retinitis with vitreitis commonly associated with chorioretinal disease. Visual loss occurs as a complication of known cryptococcal meningitis and was believed to be due to perineuritic adhesive arachnoiditis.

Due to unavailability of 5- flucytocine we managed our pa-

Volume : 4 | Issue : 2 | Feb 2014 | ISSN - 2249-555X

tient with induction therapy of Amphotericin B followed by consolidation therapy with oral fluconazole(200-400 mg per day). Fortunately, there was rapid clinical response to this regimen. Treatment Amphotericin B has produced a 50% rate of cure in Cryptococcal Chorioretinitis[8] Our patient is continuing with oral fluconazole for 4 months and is being regularly monitored on outpatient basis.

CONCLUSION:

Patients with a very low CD4 count (<100) are at risk of Cryptococcocal Meningitis. The umblicated nodules are specific of Cryptococcosis, but sometimes can be confused with molluscum contagiosum and Penicillium Marneffei infection. Chorioretinitis in a immunocompromised host is caused by direct intraocular invasion of the organism. The combination of neurological, cutaneous and ocular involvement is extremely rare.

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