

Case Report

CANDIDA ALBICANS PNEUMONIA IN IMMUNOCOMPETENT PATIENT

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ABSTRACT

A case of candida pneumonia is discussed in which the common presenting symptoms were right sided chest pain & cough with expectoration which was scanty, mucoid and non foul smelling, non blood tinged. The case findings and other systemic involvements are reviewed briefly along with radiological and cytological discussions.

Keywords: *Candida Albicans, Pneumonia*

INTRODUCTION

Fungi infect billions of people every year, but still remain largely under appreciated as pathogens of humans (Brown *et al.*, 2012). In especially in the clinical setting (Perlroth *et al.*, 2007). *Candida albicans* and *Candida glabrata*, for example, are ubiquitous commensals of pathogenic yeasts.

Invasive fungal infections have significantly increased due to advances in medical care in the at risk immunocompromised population. Fungal species are widely distributed in soil, plant debris and other organic substrates, and make up approximately 7 percent (611,000 species) of all eukaryotic species on earth, although only about 600 species are human pathogens.

Major risk factors for invasive fungal infections include neutropenia < 500 neutrophils/ml for more than 10 days, haematological malignancies, bone marrow transplantation, prolonged (>4 week) treatment with corticosteroids, prolonged (>7 weeks) stays in intensive care, chemotherapy, HIV infection, invasive medical procedures, and the newer immune suppressive agents. Other risk factors are malnutrition, Solid organ transplantation, severe burns or prolonged hospital stays in intensive care (>21 days), systemic corticosteroids for >7 days, and major surgery. There are also reports of the presence of infection in immunocompetent patients without signs or symptoms of conditions associated with immunocompromised status.

Infection can be transmitted by the inhalation of spores (aspergillosis, Cryptococcus, histoplasmosis), percutaneous inoculation in cutaneous and subcutaneous infections (dermatophytosis, Madura foot), penetration into the mucosa by commensal organisms such as *Candida albicans*, and the ingestion of a toxin in contaminated food or drink (gastrointestinal disease).

Infections may be mild and superficial or cutaneous (eg dermatophytosis and tinea versicolor) or may cause life threatening, systemic illness (eg candidiasis, aspergillosis and mucor mycosis). The clinical manifestations of the disease caused by a given fungal agent can be highly variable and related to host immunity and physiological condition. For example, candida spp. Can invade a local site (mucocutaneous or cutaneous candidiasis, onychomycosis) or cause systemic infections (renal, liver abscess, lung and central nervous system). Allergic symptoms were reported in infections with other fungi such as *Aspergillus* spp. (allergic bronchopulmonary aspergillosis). The isolation of these organisms from clinical samples may indicate colonization, infection or disease; consequently interpreting the results of diagnostic tests may be challenging for clinicians who treat these patients. Treatment requires early suspicion and is difficult because only few anti fungal agents are available, most usually have side effects, and some organisms have developed resistance. Clinicians need drugs that are highly effective but have low toxicity.

In these review opportunistic fungal infections, diagnostic methods and the management of these infections discussed.

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Clinical Manifestations and Epidemiology

The standard definition of invasive fungal infections (IFI) was developed by members of the European Organization for Research in the treatment of Cancer Invasive Fungal Infection Cooperative group and the National Institute of Allergy and Infectious diseases Mycosis Study Group.

Among immunocompetent hosts, Keratitis and onychomycosis are the most common infections.

Other infections in immunocompetent patients include sinusitis, pneumonia, thrombophlebitis, peritonitis, fungemia, endophthalmitis, septic arthritis, vulvovaginitis and osteomyelitis .

In immunocompromised patients any fungus present in the environment may be potentially pathogenic. *Aspergillus* and *Candida* spp. are the main organisms isolated most frequently from immunocompromised patients.

Cryptococcus neoformans is a major cause of infection in immunocompromised patients.

CASES

A 58 Year old male patient was admitted to hospital with

a. History of right sided chest pain - 7 days

b. History of cough with expectoration -7days

Chest pain - insidious in onset, gradually progressive, right sided, dull aching type, non radiating.

Cough with expectoration - insidious in onset, progressive, aggravated on lying right and in the night, sputum scanty in amount, whitish, mucoid in character nonfoul smelling. There was no haemoptysis.

Patient had anorexia but there was no loss of weight.

No history of breathlessness, palpitations, fever, syncope, swelling of limbs.

Part history: - patient was not a diabetic/ hypertensive. No H/o TB/ Bronchial asthma.

Patient was occasional alcoholic & smoker since 20years.

On Examination

Patient was moderately built and moderately nourished. Conscious, oriented, there was no pallor, icterus, clubbing, cyanosis, lymphadenopathy, and edema.

Pulse- 82/min

BP- 120/80mmHg

Temperature- normal

Respiratory rate- 18 /min

Respiratory System Examination

Trachea - central in position, chest bilaterally symmetrical, normal chest movements and chest expansion, no drooping of shoulder, spine deformities, no scars/ sinuses/ engorged veins/ pulsations.

Chest measurements, expansion, TVF were within normal limits.

On percussion – woody dullness was present.

On auscultation - Vesicular breathsounds heard on right lung fields.

Right sided coarse crepitations heard more in right Infrascapular area.

Bilateral ronchi present

CVS- S₁ S₂ no murmurs

Per abdomen– normal, no organomegaly

CNS – no focal neurological deficits

Diagnosis

Radiological evidence from X-rays and High resolution computed tomography is useful for the diagnosis of fungal infections.

Investigations

Hb% 11.8gm%

Total count – 17,500 cells/mm³

Differential count 94/03/01/02 (N/L/M/E)

ESR – 70mm/hr

Urine routine- normal

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CXR PA view—non homogenous and nodular consolidation in Right lung probably of infective etiology
FBS/PPBS – 65/110mg/dl
VCTC – non reactive
Sputum for AFB – negative
Sputum for culture and sensitivity showed growth of *Candida* species.

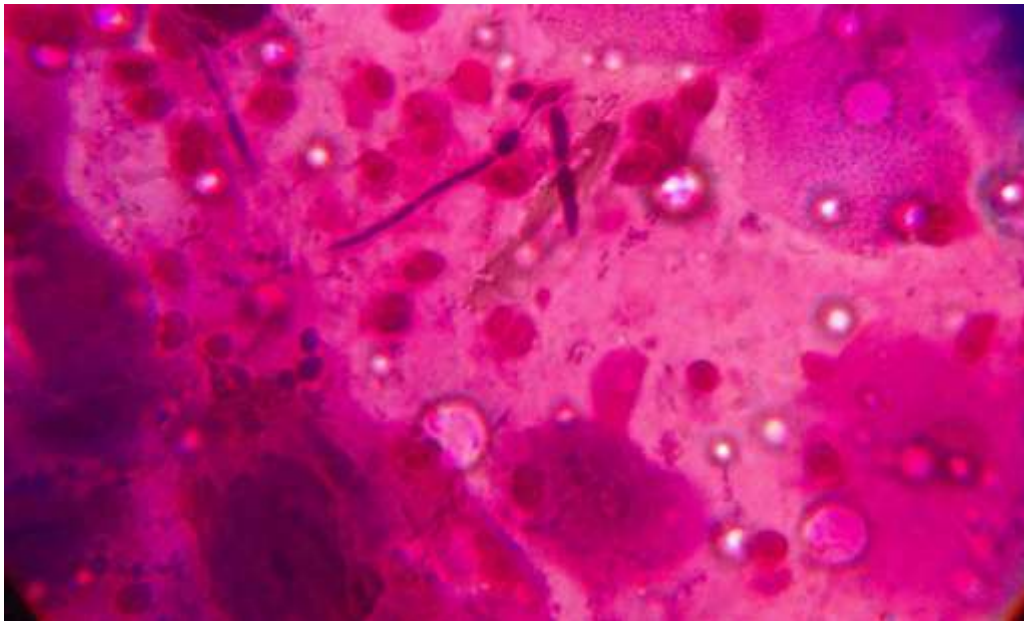


Figure 1: ??????

Patient was treated with IV antibiotics for one week but did not improve.
After obtaining Sputum culture report, amphotericin B-0.5- 1mg/kg/day was given for a week.
Patient started improving gradually and checks X-ray after a course of anti-fungal agent showed resolving consolidation.

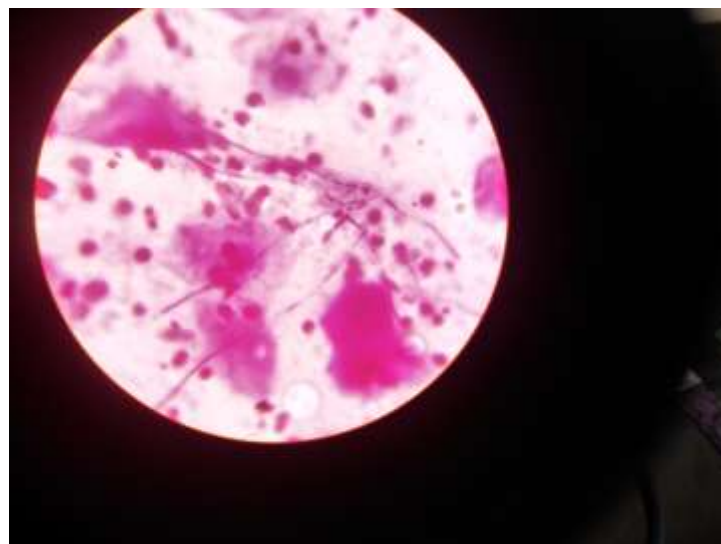


Chest X-ray before treatment

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Chest X-ray after treatment



Figure

DISCUSSION

Fungal pneumonias are usually considered in immunocompromised individuals but candida pneumonia can occur in patients with no obvious immunodeficiency. It should be considered as one of the cause in patients with non resolving pneumonia.

Chest X-rays before and after anti fungal treatment are enclosed.

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Conclusion

Pneumonias are one of the common causes of infections in hospital patient admissions, the treatment of pneumonia with antibiotics is routine. Fungal infections are suspected mainly in immunocompromised states like HIV infection, long term diabetes mellitus, and patients receiving steroids / chemotherapy. Here we are reporting a case of *Candida albicans* pneumonia in an immunocompetent patient. Hence when evaluating a case of non resolving pneumonia, possibility of fungal etiology has to be considered. The best approach to the optimal management of fungal infection is early detection and identification of the causal agent, so that appropriate treatment can be initiated as soon as possible.

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