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# Fungemia in an Immunocompetent Infant due to *Candida pelluculosa*: A Case Report

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**Abstract:** ***Invasive fungal infections caused by uncommon fungi have increased in recent years. Candida pelliculosa fungemia is usually associated with predisposing factors, such as administration of broad-spectrum antimicrobials, use of intravenous catheters, use of parenteral nutrition, neutropenia, stay in intensive care units (ICU) and surgery of the gastrointestinal tract . Candida pelliculosa rarely causing fungemia in previously healthy immunocompetent child. Here, we describe the first case of a C.pelliculosa fungemia in an immunocompetent infant without any of the above risk factors in RIMS hospital, Manipur.***

**Keywords:** immunocompetent, infant, neutropenia, *Candida pelliculosa*, fungemia, yeast

## 1. Introduction

*Candida pelliculosa* (teleomorph *Pichia anomala*) is a yeast frequently found in various fruits, tree exudates, soil, vegetables and other organic compounds (Kwon-Chung & Bennett, 1992[(1)] ). It has occasionally been reported as causative agent of fungaemia in both immunocompetent and immunocompromised patients, including those with AIDS (Alter& Farley, 1994 [(2)].

Recently, Thuler et al. (1997)[(3)] described an outbreak of 24 cases of infection due to *C.pelliculosa* in an oncological hospital in Rio de Janeiro, Brazil.The majority of these cases were related to the presence of both central and peripheral venous catheters. *C. pelliculosa* has also been reported as a causative agent of nosocomial cerebral ventriculitis in low-birth-weight neonates, endocarditis in an intravenous drug abuser and urinary tract infection in a renal transplant recipient (Salesa et al., 1991[(4)]; Murphy et al[(5)]., 1986; Nohinek et al[(6)], 1987; Qadri et al[(7)]., 1988). While amphotericin B, alone or in association with flucytosine, seems to be effective against *C. pelliculosa* infections, the role of fluconazole is uncertain (Alter & Farley 1994[(2)]; Hirasaki et al., 1992[(8)]; Klein et al., 1988[(9)]; Kunova et al., 1996[(10)] ). In a recent study carried out to analyse the antifungal susceptibility of clinical isolates belonging to seven uncommon species of *Candida*, of 15 *C. pelliculosa* strains, eight were shown to be fluconazole resistant, six were itraconazole and ketoconazole resistant and one was flucytosine resistant as seen by Barchiesi et al, 1999 [(11)]. Most of the cases are isolated from the respiratory tracts of intubated patients hospitalized in intensive care units (ICUs).

## 2. Case Report

A 8 months old infant came to paediatric emergency department with the complaints of fever and cough for the duration of 1 week, breathing difficulty for 3 days and reduced feeding for 3 days. There was no history of similar illness in the past. No h/o contact with open case of pulmonary tuberculosis. Baby was delivered in the district hospital and no significant post natal illnesses. Immunisation was given as per schedule. On examination, patient was febrile with axillary temperature of $100.4^0$ F, distress and peripheral cyanosis present. There was no pallor, icterus, dehydration and edema. There was no significant lymphadenopathy. Vitals – HR-140/min, RR- 66/min, CRT-2 secs, $O_2$

Saturation- 91%. On respiratory system examination, subcostal and intercostals retractions present, and bilateral crepitations present. There was no audible murmur. Hepatomegaly and moderate splenomegaly was present. Patient was clinically diagnosed as a case of very pneumonia and shifted to paediatric ICU. Patient was managed with 100% oxygen through mask, intravenous fluids, oral paracetamol and IV ceftriaxone given after blood sampling for bacterial culture.

**Preliminary Investigations**: Complete hemogram : Hb-9.2gms%, TLC- 5200cells/cu.mm, DLC- N-51%; L-46%; M-3%; E-0%; B-0%, ESR- 62mm in 1st hr, peripheral smear- $N_CN_C$ RBC's , WBC- normal, Platelet- adequate. Chest X ray- bilateral diffuse infiltrations present. Tuberculin test- negative. Blood culture- no growth after 7 days. Other routine investigations like Urine routine, LFT and KFT were all within normal limits. Even after 4 days of IV Ceftriaxone, fever and breathing difficulty was still persisted and at the same time, there was also no deterioration in patient's condition. On day 5, blood for fungal and bacterial culture was sent and antibiotics was changed to IV

Vancomycin. Also HIV infection was ruled out by doing HIV DNA PCR test. Even with 4 days of IV Vancomycin, there was no improvement in fever and breathing difficulty. On day 10, fungal culture sensitivity show growth of *Candida pelliculosa* and sensitivity to fluconazole. Patient was started on Oral Fluconazole 6mg/kg/day. On 3rd day of fluconazole therapy patient becomes afebrile and distress also reduced. After 7 days, patient was improved well with no distress, no cough and good oral intake. On day 3 of fluconazole theraphy, blood culture was repeated and it was sterile. CD4 and CD3 count was normal (CD4 – 1595 cells/cumm; CD3 – 2720 cells/cumm). Patient was given fluconazole treatment for 21 days and the patient was followed up and showed complete cure and recovery.

## 3. Conclusion

Invasive fungal infections caused by uncommon fungi have increased in recent years due to the ever increasing load of HIV positive patients but one should also keep in mind that uncommon fungal infection can also occur in immunocompetent individuals even without the risk factors such as administration of broad-spectrum antimicrobials, use of intravenous catheters, use of parenteral nutrition, neutropenia, stay in intensive care units (ICU) and surgery of the gastrointestinal tract and so the patients need to be investigated properly with due impotance to find the causative agent by culture and subsequent antibiotic susceptibity testing which will help in detecting such rare cases and also help in reducing the morbity and mortality of such patients by proper antibiotics with proper dosing .

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