

CASE REPORT

Candida parapsilosis infection in a non-healing skin ulcer

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Received on March 26, 2018; editorial approval on May 24, 2018

ABSTRACT

Candida parapsilosis is an emerging major human pathogen that has dramatically increased in significance and prevalence over the past two decades, such that *C. parapsilosis* is now one of the leading causes of invasive candidal disease. It has also become a significant cause of sepsis, wound and tissue infection in immune-compromised individuals such as AIDS patients and surgical patients, particularly those having surgery of the gastrointestinal tract, are at high risk for infection with *C. parapsilosis*. Unlike other species of *Candida*, *C. parapsilosis* is not an obligate human pathogen and has been isolated from a variety of non-human sources. Here we report a case of non-healing skin ulcer caused by *Candida parapsilosis* in a patient of chronic hepatitis.

Keywords: Nasal ulcer; hepatitis, blastoconidia, pseudohyphae

INTRODUCTION

Candida parapsilosis is an emerging major human pathogen that has dramatically increased in significance and prevalence over this past two decades such that *Candida parapsilosis* is now one of the leading causes of invasive candidal disease.¹ *C. parapsilosis* is also normal human commensal and it is one of the fungi most frequently isolated from the human hands. There are several risk factors which can help *Candida parapsilosis* to colonize human host. It has also become a significant cause of sepsis, wound and tissue infection in immunocompromised individual such as AIDS patients and surgical patients, particularly those having surgery of gastrointestinal tract are at high risk for infection with *C. parapsilosis*. Unlike other species of *Candida*, *C. parapsilosis* is not an obligate human pathogen and has been isolated from a majority of non-human sources. Here we report a case of non-healing ulcer where *C. parapsilosis* was isolated.

CASE REPORT

A 45 year old female visited dermatology OPD with a small superficial ulcer on the nose which was two months old (Figure 1). She revealed that the ulcer started as a small papule

then a vesicle which broke off to form an open ulcer. On inspection a solitary circular ulcer was seen just above the ala of the left nostril. The size was around 2.5 × 2.5 cm. The edge of the ulcer was inflamed, edematous and punched out. Margin was regular. The floor of the ulcer was covered with red granulation tissue and the depth was around 3-4 mm. There was serous discharge from the ulcer. The surrounding area of the ulcer was glossy, red and edematous. On palpation it was tender and slight induration at the base of the ulcer was present. She was advised topical antibiotics and regular dressing with antiseptics. After this initial treatment she revisited the OPD after four weeks but the ulcer did not heal. Then a culture and sensitivity was done where there was no bacterial growth. She was advised to take broad spectrum antibiotics orally and ointments to apply locally. She also complained of generalised weakness, anorexia and sometimes mild abdominal discomfort for which she was referred to Medicine OPD. There she was examined carefully and no significant signs were found. She was advised to do routine examination of blood and urine, liver function test and an ultrasonography. Significant findings revealed haemoglobin as 8 gm % and the WBC count as 11000 c/mm. Liver function test showed raised levels of SGOT as 280 I.U. and SGPT as 300 I.U. and total bilirubin level was 2mg/dL. Since all the levels were elevated she was advised to do test for viral hepatitis. On testing it was found that she was

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Cite this article as: Das Angshurekha, Barua Purnima, Patir Jayanta, Shivaprakash RM. *Candida parapsilosis* infection in a non-healing skin ulcer. *Int J Health Res Medico Leg Prae* 2018 July;4(2): 102-104. DOI 10.31741/ijhrmlp.v4.i2.2018.25

positive for antibody against Hepatitis C virus. To detect the activity of the virus, a viral load of HCV was done where the level was 8,00,000 IU/ml. Since then she was put on antiviral drugs. But the ulcer did not show signs of healing with antibiotics. Then a FNAC was advised from the nasal ulcer and the findings revealed numerous budding yeast cells along with polymorphs, lymphocytes and histiocytes with scattered benign squamous cells (Figure 2). Subsequently a fungal culture was done from scrapings collected from the edge of the ulcer. On Sabouraud Dextrose agar colonies were cream coloured, smooth, pasty, glabrous and convex yeast like in appearance after 72 hrs of incubation at room temperature. The microscopic morphology shows predominantly small, globose to ovoid budding yeast like cells or blastoconidia, approximately $2-3 \times 3-4 \mu\text{m}$ in size with some larger elongated forms present. A germ tube test was done which came out to be negative indicating a non albicans group. On cornmeal and Tween 80 agar abundant, much branched pseudohyphae in a delicate tree like pattern with 2-3 blastoconidia in small clusters at intervals along the pseudohyphae or radiating from the pseudohyphae was observed (Figure 3). The isolate was sent to the National Culture Collection of Pathogenic Fungi, Post Graduate Institute of Medical Education and Research, Chandigarh for species identification and confirmation. Matrix-assisted Laser Desorption Ionization-time of Flight Mass Spectrometry (MALDI-ToF MS) identification methods has been adopted for the rapid identification of the yeast colony. The protein spectra was read in the MALDI-TOF (Bruker) and the data was analysed using Flex analysis software (provided by the manufacturer) where the isolate was confirmed to be *Candida parapsilosis*. To rule out contamination, a repeat sample was taken from the ulcer after one week and was subjected to histopathological examination and fungal culture. Similar type of colonial growth was seen and HPE revealed budding yeast cells among granulation tissue.



Figure 1 Superficial ulcer on the nose

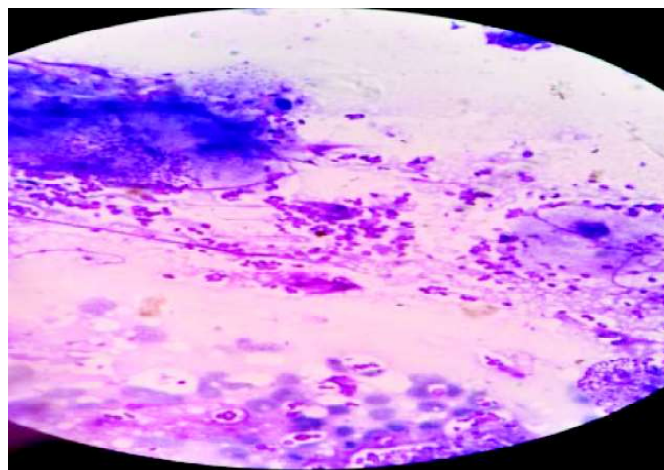


Figure 2 Smear with Giemsa stain



Figure 3 40x magnification shows *C parapsilosis*

Antifungal susceptibility test was done according to CLSI guidelines where the isolate was sensitive to Itraconazole, Amphotericin B, Fluconazole and resistant to Flucytosine. The patient was prescribed Fluconazole, 150mg, once weekly for four weeks and Terbinafine ointment to apply locally but she did not return for follow up.

DISCUSSION

Recently an increasing number of publications have described populations with increased incidence of diseases associated with *Candida parapsilosis* and have attributed various risk as predisposing factor for infection. There are many differences in the results reported about *Candida parapsilosis*, as the populations, the number of patients included and the geographical locations of the hospitals are widely diverse. A study in Barcelona with invasive *C parapsilosis* identified risk factors that included vascular catheterization (97%), prior antibiotic therapy (91%), parenteral nutrition (54%), prior surgery (46%), prior immunosuppressive therapy (38%), malignancy (27%), Transplant recipient (16%), neutropenia (12%) and prior

colonization (11%).² In other studies, infection with *C parapsilosis* has been especially associated with hyperalimentation solutions/parenteral nutrition, intravascular pressure monitoring devices, ophthalmic irrigating solution, antibiotic overuse, prematurity and central venous catheterization.³ Colonization of the skin or gastrointestinal tract is a frequent first step in the pathogenesis of invasive candida disease. Very few reports of *Candida parapsilosis* implicated in non-healing ulcer are available. Although *C parapsilosis* is a normal human commensal and it is one of the fungi most frequently isolated from the subungual space of human hands, so its pathogenicity is limited by intact integument. English et al reported that *C parapsilosis* was frequently isolated from the venous leg ulcers of patients, although its pathogenic role in these cases was suggested evidences indicated nosocomial transmission.⁴ Facial and pubic folliculitis due to *C parapsilosis* has also been reported where its role as a pathogen cannot be overlooked.⁵

CONCLUSION

Here in this report, repeated isolation of *C parapsilosis* only with no other significant pathogen, signifies its colonization as a pathogen rather than a bystander. It is perhaps the first ever case reported from North East where *C parapsilosis* was isolated from a solitary ulcer. Moreover, its association with clinical diseases other than HIV/AIDS or any metabolic disorder clearly signifies the emerging pathogenicity pattern of the yeast and its constant association with any conditions in immune compromised individuals.

Conflict of interest: No conflict of interest.

Ethical clearance: Obtained.

Consent of the patient: Both verbal and written consent was obtained from the patient.

Contribution of authors: “We declare that this work was done by the authors named in this case report with equal contributions.”

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