GLOSSITIS SHOWING HYPERTROPHIC PAPILLAE WITH GRANULOMATOUS ULCERATIONS IN A CASE OF ORAL MUCOSAL CANDIDIASIS - CASE REPORT

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ABSTRACT: Candida is a common commensal of mucous membrane, skin and gastrointestinal tract, which can become pathogen in mucosal surface in patients consuming long duration corticosteroids, antibiotics, diabetes mellitus, pregnancy, oral contraceptive pills, Cushing's disease and debilitated conditions like HIV. Candida albicans (C. albicans) is the commonest opportunistic infection of the oral cavity. The three broad group of mucosal candida are: (a) acute candidiasis, (b) chronic candidiasis, and (c) angular cheilitis. It is believed that, the different clinical types depend on the breakdown of the local immune response and ability to induce hypersensitivity reaction against the Candida antigens. The fungus also produces extracellular proteinases, which are significantly differing within and between species and thereby play role in the genesis of the different clinical variants. We report a case of C. albicans in a known diabetes patient, presenting as painful erosions on the tongue, angle of mouth and retrosternal pain. KOH examination of scraping and culture for fungus from the scraping showed fungal hyphae. The treatment with fluconazole 100 mg daily showed significant response on the 3rd day of treatment. The purpose of our presentation of the present case is that, the prolonged diabetes may cause impaired immunity that could change the morphological presentation of oral candida. So, there is a need for all physicians to be aware of the uncommon presentation of C. albicans in immunocompromised cases.

KEYWORDS: Candidal oral thrush, Candidal oesophagitis, Paronychia, Stomatitis & Angular cheilitis & Glossitis, Diabetes mellitus (uncontrolled), Diabetic nephropathy, Immunodeficiency

INTRODUCTION: Several Candida species are known to colonise the human oropharyngeal tract. Candida albicans (C. albicans) is the most common species. These yeasts are basically commensal, but may cause opportunistic infections in immunocompromised.[1] Such infections are major healthcare challenge.[2] The prevalence of yeast colonisation in the mouth depend on age, location and immune status of the individual. In a study by Cerqueira et al.[3] reported a prevalence of candida 80% in human immunodeficiency virus (HIV)-positive children compared with 57.5% in their seronegative siblings indicating increase infection by candida increases with increased immunosuppression. Similarly in another study, a prevalence of 81.3% was reported in HIV-positive adults compared with 63% in HIV-negative cases.[4] It is also presumed that with the impaired host defence mechanisms, C. albicans may become more pathogenic and virulent.[5] The factors that are believed to facilitate colonisation of yeast in the oral cavity include: diabetes mellitus, head and neck cancer, smoking, the use of oral prostheses, age, race and poor nutritional status. And others are: reduces salivary flow, the use of antibiotics, and immunosuppressive states.[6-8] The morphological presentation of candida is also believed to be due to the change in local immune response and ability to induce hypersensitivity reaction against the Candida antigens by the host. So, there is a possibility of different presentation of the same infection in different host.

CASE REPORT: A 60 years old female mason assistant by occupation with known hypertensive and chronic renal disease for last about 25 years was referred to Dermatology for painful oral erosion from Medicine ward. She was admitted to Medicine ward with complaints oral erosion and retrosternal pain for seven days and loss of appetite and weight for two weeks. In the Medicine ward they had initiated Acyclovir 400 mg thrice daily for the oral erosion, but the oral erosion and retrosternal pain did not respond. Patient gave a history of oral lesions and retrosternal pain for 27 days. Clinically, the ulcers present on the tongue and buccal mucosa were circular, 6–7 mm in size with greyish necrotic tissue on the surface (Fig. 1a, b). Left hand ring finger had the erythema and oedema of the nail fold with retraction of the cuticle; it was tender to palpate (Fig 2). There were no systemic systems. Clinical diagnosis of Herpes simplex and Oral candidiasis with Candidal paronychia was considered. She had the history of fluid filled painful vesicles on the left half of the chest in a linear distribution at the mammary level six months back, which has left behind post inflammatory hypo and hyper pigmentation suggestive of healed Herpes zoster. She has the habit of chewing tobacco. General physical examination revealed severe anaemia with bilateral pitting oedema of leg, blood pressure was 180/100 mm Hg on supine position. Her husband and two children looked normal and are were not suffering from any illness.

Investigation showed Hb 6.1%, and total leucocyte count (TLC) 5400 cu mm. Renal functions were: Urea 88 mg/dl, Creatinine 2.8 mg/dl, Uric acid 5.6 mg/dl, Serum Sodium 134 M Eq/L, Serum potassium 6.0 M Eq/L and Serum chloride 100 M Eq/L. KOH (10%) examination and Gram's stain of the scraping from tongue showed fungal hyphae (Fig. 3), fasting blood sugar on two occasions 308 mg/dl and 300 mg/dl, Tzanck test from the ulceration did not reveal any acantholytic cells, Culture on Sabouraud's media grew C. albicans. Urinalysis showed pus cells 35 / hpf, RBC 15 / hpf, Epithelial cells 4 / hpf, Sugar +++, Albumin ++ and Acetone +. ECG and other investigations were within the normal limits.

Based on the above clinical findings and investigation reports the diagnosis of Diabetes mellitus, renal disease with oral candidiasis was made.

The patient was treated with Hydrogen peroxide gurgle to remove the slough and administered Fluconazole 100 mg daily for 14 days. There was reduction in the pain, patient could comfortably drink liquid and take semisolid food by third day and there was clinical evidence of healing in the ulcer (Fig. 1c). The paronychia in the finger was treated with 1% Gentian violet paint and Tetracycline 500 mg qid for 7 days.

DISCUSSION: The innate immune system (by polymorphonuclear leukocytes and macrophages, antimicrobial peptides) and the acquired response (by increase in circulating and mucosal IgG and mucosal IgA antibodies) work together to keep Candida in check in healthy host.[9] Any change in the immune status could give rise to infection by commensals. The very early infection by HIV has been shown to influence colonisation of oral Candida and the development of opportunistic candidal infection.[10] This is because of the defective T helper 1-type CD4+ T cells.[9] The use of drugs also compromises the immune status, that may predisposes the individual to the development of infection by C. albicans strains.[11] The odds of colonisation is seen to be five times greater in patients with diabetes multivariate analysis.[12] The high content of glucose in the tissues and impaired cell-mediated immunity in diabetics have been thought to contribute towards the yeast colonisation.[2] In the current patient she had diabetes and her glucose ranged from 300–308 mg/dl.

The known different morphological types of oropharyngeal candidiasis are acute pseudomembranous, acute atrophic, chronic hyperplastic, chronic atrophic, median rhomboid glossitis and angular cheilitis.[13] These classical forms are easy to suspect and recognise clinically, but in the present case the lesions clinically presented as the circular ulcers with necrotic tissue which barely raised above the surface. This atypical presentation could be possibly explained due to the patients abnormal immune status as the patient was suffering from diabetes and renal diseases for a prolonged period. The present case did not have any other disease in the oral cavity.

Drugs such as broad spectrum antibiotics alter the local oral flora create a suitable environment for candida to proliferate in the present case patient did not have the history of any other drug intake.[14]

Treatment is mainly oral hygiene and topical antifungals when it is uncomplicated oral candidiasis. The commonly used solution to clean oral cavity and dentures is by soaking denture and gurgling mouth by chlorhexidine.[15] The antifungals are applied on the whole mucosa and held in the mouth for a few minutes.[16] The problem with Chlorhexidine is that it can discolour both dentures and natural dentition if not removed adequately after use. Other denture cleaning agents are ultrasonic cleaning tanks with a suitable solution but it is not routinely used.[17] Both nystatin and chlorhexidine digluconate are used for cleansing oral cavity but, combination of nystatin with chlorhexidine digluconate, are not used simultaneously because they inactivate each other.[18, 19] In the present case, Hydrogen peroxide solution was used as the cleansing agent clean oral cavity.

The antifungals are the main stay of candidal infection. In the early part of the 20th century gentian violet, an aniline dye was use to treat fungus, but because of resistance and side effects, it was replaced by a polyene antibiotic, and nystatin, was discovered in 1951. They all act by binding to sterols in the cell membrane of fungi, and, altering cell membrane permeability and kill the cell.[20, 21] Nystatin is the most widely used topical agent for the treatment of oral candidiasis.[22, 23]

The systemic antifungals are indicated for wide spread infection or places where application is not possible. Systemic triazoles (fluconazole or itraconazole) once per day has been found to be effective in oral candidiasis case.[24] The present case was given fluconazole 100 mg/day and there was significant improvement by 3rd day, which is in agreement with the previous reports.[25] In the present case, oral Fluconazole and topical Clotrimazole was used.

Reduction or even an absence of CD4+ cells in HIV infected, breakdown of the local immune response and a hypersensitivity reaction against Candida antigens can vary in the clinical presentation. Present case had circular ulcer with necrotic slough, which could be possibly due to the change in immune status due to diabetes.

REFERENCES

1. Cannon RD, Holmes AR, Mason AB, Monk BC. Oral Candida: clearance, colonisation, or candidiasis? J Dent Res 1995; 74:1152-61.
2. Van der Meer JW, van de Veerdonk FL, Joosten LA, Kullberg BJ, Netea MG. Severe Candida spp. infections: new insights into natural immunity. Int J Antimicrob Agents 2010; 36(Suppl. 2):S58-62.
3. Cerqueira DF, Portela MB, Pomarico L, de Arau´ jo Soares RM, de Souza IP, Castro GF. Oral Candida colonisation and its relation with predisposing factors in HIV-infected children and

their uninfected siblings in Brazil: the era of highly active antiretroviral therapy. J Oral Pathol Med 2010; 39:188-94.
4. Patel M, Shackleton JT, Coogan MM. Effect of antifungal treatment on the prevalence of yeasts in HIV-infected subjects. J Med Microbiol 2006; 55:1279-84.
5. Mercante DE, Leigh JE, Lilly EA, McNulty K, Fidel PL Jr. Assessment of the association between HIV viral load and CD4 cell count on the occurrence of oropharyngeal candidiasis in HIV-infected patients. J Acquir Immune Defic Syndr 2006; 42:578-83.
6. Ellepola AN, Khan ZU, Joseph B, Chandy R, Philip L. Prevalence of Candida dubliniensis among oral Candida isolates in patients attending the Kuwait University Dental Clinic. Med Princ Pract 2011; 20:271-6.
7. Jabra-Rizk MA, Falkler WA Jr, Enwonwu CO, Onwujekwe DI Jr, Merz WG, Meiller TF. Prevalence of yeast among children in Nigeria and the United States. Oral Microbiol Immunol 2001; 16:383-5.
8. Schelenz S, Abdallah S, Gray G, et al. Epidemiology of oral yeast colonisation and infection in patients with hematological malignancies, head neck and solid tumors. J Oral Pathol Med 2011; 40:83-9.
9. Fidel PL Jr. Candida–host interactions in HIV disease: relationships in oropharyngeal candidiasis. Adv Dent Res 2006; 19:80-4.
10. Owotade FJ, Shiboski CH, Poole L, et al. Prevalence of oral disease among adults with primary HIV infection. Oral Dis 2008; 14:497-9.
11. Masiá-Canuto M, Gutiérrez Rodero F, Ortiz de la Tabla Ducasse V, et al. Determinants for the development of oropharyngeal colonisation or infection by fluconazole-resistant Candida strains in HIV-infected patients. Eur J Clin Microbiol Infect Dis 2000; 19:593-601.
12. Goncalves RH, Miranda ET, Zaia JE, Giannini MJ. Species diversity of yeast in oral colonisation of insulin-treated diabetes mellitus patients. Mycopathologia 2006; 162:83-9.
13. Lewis MAO, Lamey PJ. Clinical oral medicine. Oxford: Butterworth-Heinemann, 1995.
14. Epstein JB, Truelove EL, Izutzu KL. Oral candidiasis: pathogenesis and host defense. Rev Infect Dis 1984; 6:96-106.
15. Odman PA. The effectiveness of an enzyme containing denture cleaner. Quintessence Int 1992; 23:187-90.
16. Stafford GD, Arendorf GD, Huggett R. The effect of overnight drying and water immersion on candidal colonisation and properties of complete dentures. J Dent 1986; 14:52-6.
17. Gwinnet AJ, Caputo L. The effectiveness of ultrasonic denture cleaning: a scanning electron microscopy study. J Prosthet Dent 1983; 50:20-5.
18. Barkvoll P, Attramadal A. Effect of nystatin and chlorhexidine digluconate on Candida albicans. Oral Surg Oral Med Oral Pathol 1989; 67:279-81.
19. Barkvoll P, Hurlen B. Conventional treatment of oral candidiasis. New aspects. Nor Tannlaegeforen Tid 1989; 99:116-19.
20. Gupta AK, Sauder DN, Shear NH. Antifungal agents: an overview. Part 1. J Am Acad Dermatol 1994; 30:677-98.
21. Bennett JE. Antimicrobial agents, antifungal agents. In: Gilman AG, Rall TW, Nies AS, et al., eds. Goodman and Gilman's the pharmacological basis of therapeutics. 8th ed. New York: Pergamon Press, 1990:1165-81.

22. Epstein JB. Antifungal therapy in oropharyngeal mycotic infections. Oral Surg Oral Med Oral Pathol 1990; 69:32-41.
23. Guida RA. Candidiasis of the oropharynx and oesophagus. Ear Nose Throat J 1988; 67:832-40.
24. Blatchford NR. Treatment of oral candidiasis with itraconazole: a review. J Am Acad Dermatol 1990; 23:565-7.
25. Lumbreras C, Cuervas-Mons V, Jara P, et al. Randomised trial of fluconazole versus nystatin for the prophylaxis of candida infection following liver transplantation. J Infect Dis 1996; 174:583-8.

At presentation Day1

Day 2 During treatment

Day 4 After treatment

FIGURE 1. Photograph showing multiple circular erosions with necrosis slough on the tongue and angle of mouth on (a) day-1, (b) day-2, and (c) day-4.

FIGURE 2. Nail fold erythema and oedema of

FIGURE 3. Microphotograph

CASE REPORT

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