

ORAL CANDIDIASIS

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ABSTRACT: *Candidiasis is an infection caused by Candida fungi. These fungi are found almost everywhere in the environment. Some may live harmlessly along with the abundant "native" species of bacteria that normally colonize the mouth, gastrointestinal tract and vagina. Usually, Candida is kept under control by the body's immune defense. If the mix of native bacteria is changed by antibiotics, the body moisture that surrounds native bacteria can also have subtle changes in its acidity or chemistry. This can cause yeast to grow and to stick to surfaces. Candida infections can cause occasional symptoms in healthy people. If a person's immune system is weakened by illness, malnutrition, or certain medications, Candida fungi can cause symptoms more frequently. Candidiasis can affect many parts of the body, causing localized infections or larger illness, depending on the person and his or her general health.*

KEY WORDS: CANDIDIASIS, CHELITIS, INFECTION.

I. INTRODUCTION.

Oral candidiasis is the most common treatable human fungal infection in the early and late life. [1,2]. Oral candidiasis is also known as oral candidosis, oral thrush,[3] oropharyngeal candidiasis, moniliasis,[4] candidal stomatitis, muguet. It is a oral mucosal infection seen in persons with human immunodeficiency virus (HIV) infection or acquired immune deficiency syndrome (AIDS). [5]. It is an infection caused by a species of the yeast Candida. The organism, under favorable conditions, has the ability to transform into a pathogenic hyphael form. Conditions that favor this transformation include broad-spectrum antibiotic therapy, xerostomia, immune dysfunction, overuse of antibiotics, rise of AIDS, increase in organ transplantations and the use of invasive devices ,diabetes and the presence of removable prostheses. There are many species of Candida namely C. albicans ,C. glabrata ,C. guilliermondii ,C. krusei ,C. parapsilosis ,C. pseudotropicalis ,C. stellatoidea and C. tropicalis but C. albicans is most often encountered in the general practice dental patient. [6]. Changes in the oral environment that can predispose or precipitate oral candidiasis include: antibiotics, corticosteroids, dry mouth (xerostomia), diabetes mellitus, nutritional deficiencies, and immunosuppressive diseases and therapy. [5].

II. CLASSIFICATION OF ORAL CANDIDIASIS

A recently proposed classification of oral candidiasis distinguishes primary oral candidiasis, where the condition is confined to the mouth and perioral tissues, and secondary oral candidiasis, where there is involvement of other parts of the body in addition to the mouth.[4].

By Clinical Appearance.[7]

- pseudomembranous.
- erythematous (atrophic).
- hyperplastic.

III. PSEUDOMEMBRANOUS CANDIDIASIS.

It is the most common type of candidiasis. [8] It is commonly known as thrush. [7]. It is a form of candidiasis often seen in neonates, patients receiving topical corticosteroid therapy or in immune suppressed patients. [10]. Presence of pseudo membranous candidiasis shows an indication for the presence of HIV. It is characterized by a coating or individual patches of pseudomembranous white slough that can be easily wiped away to reveal erythematous, and sometimes minimally bleeding mucosa beneath.[8]. These areas of pseudomembrane are sometimes described as "curdled milk",[7] or "cottage cheese".[8].Some sources state that if there is bleeding when the pseudomembrane is removed, then the mucosa has likely been affected by an underlying process such as lichen planus or chemotherapy.[9]. Pseudomembraneous candidiasis can involve any part of the mouth, but usually it appears on the tongue, buccal mucosae or palate.[8]. Symptoms are typically mild for this form of infection, patients may complain of a slight tingling sensation or a foul taste. The highest yield of positive cytology smears is with pseudomembranous candidiasis. [11].

IV. ATROPHIC CANDIDIASIS.

The condition appears as a red, raw-looking lesion.[12].Some sources consider denture-related stomatitis, angular stomatitis, median rhomboid glossitis, and antibiotic-induced stomatitis as subtypes of erythematous candidiasis, since these lesions are commonly erythematous/atrophic. Acute erythematous candidiasis usually occurs on the dorsum of the tongue in persons taking long term corticosteroids or antibiotics, but occasionally it can occur after only a few days of using a topical antibiotic.This is usually termed "antibiotic sore mouth", "antibiotic sore tongue"or "antibiotic induced stomatitis" because it is commonly painful as well as red.[13]. Approximately 26% of patients with complete dentures have atrophic candidiasis.[14].

V. HYPERPLASTIC CANDIDIASIS.

It is otherwise known as Candidal leukoplakia.[16]. Hyperplastic candidiasis will be present as a white plaque that cannot be wiped away by the clinician. However, lesions should completely resolve with routine antifungal therapy.This variant is also sometimes termed "plaque-like candidiasis" or "nodular candidiasis".[10].The most common site of involvement is the commissural region of the buccal mucosa, usually on both sides of the mouth.[15]

VI. CANDIDA ASSOCIATED LESIONS.

Angular Cheilitis.

It is the inflammation at the corners (angles) of the mouth, very commonly involving candida species, when sometimes the terms "candida-associated angular cheilitis",[13] or less commonly, "monilial perlèche" are used.[17] Signs and symptoms include soreness, redness and fissuring of one, or more commonly both the angles of the mouth, with edema seen intraorally on the commissures. Angular cheilitis generally occurs in elderly people and is associated with denture related stomatitis.[18].

VII. DENTURE RELATED STOMATITIS.

This term refers to a mild inflammation and erythema of the mucosa beneath a denture, usually an upper denture in elderly edentulous individuals. About 90% of cases are associated with candida species,[6] where sometimes the terms "candida-associated denture stomatitis",[19] or "Candida-associated denture induced stomatitis" (CADIS),[20] are used. Some sources state that this is by far the most common form of oral candidiasis.[20] This condition is also known as "denture sore mouth".[20]

VIII. MEDIAN RHOMBOID GLOSSITIS.

This is an elliptical or rhomboid lesion in the center of the dorsal tongue, just anterior to the circumvallate papillae. The area is depapillated, reddened and rarely painful. There is frequently Candida species in the lesion, sometimes mixed with bacteria.[18].

IX. LINEAR GINGIVAL ERYTHEMA.

This is a localized or generalized, linear band of erythematous gingivitis (inflammation of the gums). It was first observed in HIV infected individuals and termed "HIV-gingivitis", but the condition is not confined to this group.[7] Candida species are involved, and in some cases the lesion responds to antifungal therapy, but it is thought that other factors exist, such as oral hygiene and human herpesviruses. This condition can develop into necrotizing ulcerative periodontitis.[21].

X. CAUSES.

Immuno deficiency.

Immunocompromise. Eg.HIV. Topical or systemic corticosteroids,[22] e.g., treatment of asthma may also result in oral candidiasis: the risk may be reduced by regularly rinsing the mouth with water after taking the medication.Active cancer and treatment, chemotherapy or radiotherapy.[23].

Denture wearing.

Denture wearing, and poor denture hygiene, particularly wearing the denture continuously rather than removing them during sleep,[24] is another risk factor, both for candidal carriage and for oral candidiasis. Dentures provide a relative acidic, moist and anaerobic environment because the mucosa covered by the denture is sheltered from oxygen and saliva.[25] Loose, poorly fitting dentures may also cause minor trauma to the mucosa, which is thought to increase the permeability of the mucosa and increase the ability of *C. albicans* to invade the tissues.[25,26]

Xerostomia.

Xerostomia is frequently listed as a cause of candidiasis,[24] but xerostomia can be subjective i.e., a symptom present with or without actual changes in the saliva consistency or flow rate.

Diet.

Malnutrition, whether by malabsorption,[27] or poor diet, especially hematinic deficiencies can predispose to oral candidiasis,[10] by causing diminished host defense and epithelial integrity. There is limited evidence that a diet high in carbohydrates predisposes to oral candidiasis. In vitro studies show that Candidal growth, adhesion and biofilm formation is enhanced by the presence of carbohydrates such as glucose, galactose and sucrose.[25]

Antibiotics.

Broad-spectrum antibiotics,[10] eliminates the competing bacteria and disrupt the normally balanced ecology of oral micro-organisms.[9] acute oral candidiasis occurs due to medication with corticosteroids or broad-spectrum antibiotics (e.g., tetracycline).

XI. SIGNS AND SYMPTOMS.

Whitish patches can appear on the tongue, inside of the cheeks, or the palate. Oral candidiasis typically occurs in people with abnormal immune systems. These can include people undergoing chemotherapy for cancer, people taking immunosuppressive drugs to protect transplanted organs, or people with HIV infection. Most types of oral candidiasis are painless, but a burning sensation may occur in some cases.[12] A burning sensation is more likely with erythematous candidiasis, whilst hyperplastic candidiasis is normally asymptomatic.[9] Acute atrophic candidiasis may feel like the mouth has been scalded with a hot liquid.[9]. Another symptom is a metallic, acidic, salty or bitter taste in the mouth.[12,9] The pseudomembranous type rarely causes any symptoms apart from possibly some discomfort or bad taste due to the presence of the membranes.[9]. Occasionally there can be difficulty in swallowing which indicates that candidiasis involves the oropharynx or the esophagus,[8] as well as the mouth. The trachea and the larynx may also be involved where there is oral candidiasis, and this may cause hoarseness of the voice.[15].

XII. DIAGNOSIS.

Often clinical appearance gives a strong suggestion about the diagnosis. The clinician will take a swab, an area of oral plaque, and then inspect this material under a microscope. Under the microscope, it is possible to see characteristic forms of yeasts at various stages in the lifecycle.[28,29]

XIII. TREATMENT

Oral candidiasis can be treated with topical anti-fungal drugs, such as nystatin, miconazole, Gentian violet or amphotericin B. This is usually treated with prescription lozenges or mouthwashes. Some of the most-used prescriptions are nystatin mouthwashes (Nilstat or Nitrostat) and clotrimazole lozenges. In recurrent oral candidiasis, the use of azole antifungals risks selection and enrichment of drug-resistant strains of candida organisms.[30]. Prophylactic use of antifungals is sometimes employed in persons with HIV disease, during radiotherapy, during immunosuppressive or prolonged antibiotic therapy as the development of candidal infection in these groups may be more serious.[4].

XIV. PROGNOSIS.

The severity of oral candidiasis is subject to variability, from one person to another. The prognosis of such infection is better after the application of topical or systemic treatments. Oral candidiasis is prolonged if there is reduced salivary flow rate or if immunosuppression are not rectifiable.[12].

It is possible for candidiasis to spread to/from the mouth, from sites such as the pharynx, esophagus, lungs, liver, skin or the nails. The spread of oral candidiasis to other sites usually occurs in debilitated individuals.[18].

Rarely, a superficial candidal infection such as oral candidiasis can cause invasive candidiasis, and even prove fatal. The role of thrush in the hospital and ventilated patients is not entirely clear however there is a theoretical risk of positive interaction of candida with topical bacteria [31] that could increase the risk for Ventilator Associated Pneumonia and other diseases.[32].

XV. CONCLUSION.

In general, we can prevent most *Candida* infections by keeping the skin clean and dry, by using antibiotics only as the doctor directs, and by following a healthy lifestyle, including proper nutrition. People with diabetes should try to keep their blood sugar under tight control. If the patients have HIV or another cause of recurrent episodes of thrush, then antifungal drugs such as clotrimazole (Lotrimin, Mycelex) can help to minimize flare-ups. Because *Candida* is part of the normal group of microorganisms that co-exist with all people, it is impossible to avoid contact with it. Good oral hygiene might reduce problems, but they are not guarantees against candidiasis. Because hospital-acquired (nosocomial) deep organ candidiasis is on the rise, people need to be made aware of it.

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