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Clinical Features of Oral Candidiasis Among Patients Visiting the Dental Clinics in College of Dentistry, University of Hilla, Babylon, Iraq

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ABSTRACT

The most prevalent illness in the oral cavity and in general dentistry practice is oral candidiasis, often known as thrush, which can afflict anyone. *Candida albicans*, which is typically present in the mouths of approximately 50% of the global population as a normal component of the oral microbiota but during host immunosuppression or alterations in oral microbiota, is the most frequently implicated organism in this condition. It is a fungal infection caused by *Candida* spp. If the conditions within the mouth alter in a way that promotes the growth of *Candida albicans*, the organism may proliferate and result in an infection. Additional variables that may contribute to this oral infection include dentures, diabetes, cancer, mucosal disorders, and some pharmacological therapies. Although the fungus that causes candidiasis cannot be passed from person to person, it can be through an infected person's saliva. The symptoms, which include elevated patches in the mouth that bleed and become sore when scraped, as well as white or yellow spots in the mouth, especially on the tongue and inside of the cheeks, are usually simple to see. It is present in many healthy individuals and settles in the mucous membrane of the oral cavity. The general consensus is that there are six recognized clinical manifestations of candidiasis: pseudomembranous, erythematous, denture-associated, hyperplastic, angular cheilitis, and median rhomboid glossitis. Patients with the condition typically exhibit a single distinct type, though occasionally a single patient may exhibit multiple clinical variants. Patients who visited the dentistry department's clinics at Hilla University College in Babylon, Iraq between October 2022 and April 2023 provided the data.

KEYWORDS: Oral candidiasis, Oral thrush, Oral mucosal diseases, Oral cancer.

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INTRODUCTION

A group of yeasts called Candida, particularly *Candida albicans*, are the cause of oral candidiasis, often known as oral thrush [1, 2]. Normally, *Candida* species exist on human skin and in the mouth, throat, gut, and vagina without posing any health risks. Antifungal medications are typically effective in treating it, and it is not communicable [3,4,5]. Some drugs and medical disorders like diabetes or dry mouth are among the causes. Additionally, it is prevalent in people with cancer, HIV/AIDS patients, people wearing dentures, and people with immune system disorders [6,7,8].

On the tongue and inside the mouth, it manifests as white, flat or slightly elevated lesions that are frequently unpleasant. Although the candida fungus can be disseminated by coming into touch with another person's saliva, thrush illness cannot be communicated from person to person [9]. The incidence of invasive oral fungal infections has been reported to have increased recently, especially in immunocompromised patients [10]. The principal pathogen continues to be *Candida albicans*. Fungal infections are becoming more common in both the general population and people with compromised immune systems. An rising number of patients with compromised host defenses as a result of underlying illnesses and/or immunosuppressive medication, smoking, and oral cancer are some of the reasons contributing to the rise in fungal infections [11,12,13,]. Improved diagnostic techniques are required to enable early infection detection as many invasive fungal infections remain difficult to diagnose in a timely manner [14,15,16,17]. The treatment is still not ideal even with the availability of numerous more recent antifungal

medications. When oral candidiasis limits nutritional intake in elderly or immunocompromised people, it can produce chronic or uncomfortable pain [18,19, 20]. Oral candidiasis brought on by *Candida albicans* can manifest in a variety of clinical ways [21, 22]. Antifungal drugs are typically used as a kind of treatment [23]. The goal of the current study was to examine the range of clinical manifestations of candidiasis among patients who visited the dentistry department's clinics at Hilla University College in Babylon, Iraq, between October 2022 and April 2023.

METHODS

The 361 patients who visited the dentistry clinics at Hilla University College in Babylon, Iraq, provided the information for this study. In order to gather information from patients with oral candidiasis, a questionnaire form was employed in this study. The details, which included the patient's age, gender, and residential location (urban or rural), were accepted. The six forms of candidiasis (Fig. 1) were distributed among the patients: denture associated (Candida-associated denture biofilm), erythematous (red, raw-looking lesions), hyperplastic (rough or nodular lesions), angular cheilitis (inflammation at the corners of the mouth), median rhomboid glossitis (dorsal tongue center), and pseudomembranous (white slough patches).

RESULTS AND DISCUSSION

The most prevalent fungal infection in humans is oral candidiasis. It is an oral cavity infection caused by *Candida albicans* [24]. Clinical suspicion of the usual mucosal alterations and angular cheilitis, which is characterized by a coating or individual patches of pseudomembranous white slough that, in some cases, can be easily wiped to reveal erythematous, are typically used to make the diagnosis of candidiasis [10, 18]. The most prevalent kind of oral candidiasis was discovered to be pseudomembranous [25]. The forms and symptoms of candidiasis in the study participants who experience oral mycoses pains are displayed in tables (1 & 2) (Figs. 1 - 6). Table 1 shows that the prevalence of Candida infections was greater in females (58.7%) than in males (41.3%) based on gender. Comparing median rhomboid glossitis (10%) to pseudomembranous candidiasis (31%), the former is comparatively uncommon. In terms of residency outcomes (Table 2), infections revealed a noteworthy difference between patients in urban areas (38.5%) and rural areas (61.5%). Of the other forms, pseudomembranous candidiasis accounts for the highest number (27.3%). The illness is typically brought on by immunological suppression, which can be systemic or localized and can occur in a variety of settings, including the elderly and very young, immunocompromising conditions like HIV/AIDS, and long-term systemic steroid and antibiotic usage [10,18,23]. However, a number of risk factors, including diabetes, tobacco use, poor dental hygiene, cancer, and dentures, raise the incidence of Candida infections, and many risk factors may exist in a single patient [5,6,7,26,27]. Changes in the cellular immunological status are generally considered to be the most significant risk factor for the development of Candida infections [11]. Parenteral feeding, vascular catheters, repeated sessions of broad-spectrum antibiotic therapy, and immunosuppressive physical and pharmacological therapy are also present [3,4,28, 29].

CONCLUSIONS AND RECOMMENDATIONS

According to this study, the percentage of females infected with candidiasis was higher than that of males, and it was higher in rural areas than in cities. This indicates that one strategy frequently employed to treat oral candidiasis is the use of antifungal and antibacterial rinses. Treatment for oral candidiasis typically entails managing aspects of the disease that are influenced by various environmental and personal variables. Those with compromised immune systems may be able to avoid oral fungal infections with good dental hygiene practices. The key to preventing candida infections is meticulous mechanical cleaning of teeth and dentures with a toothbrush. the antifungal drugs' oral decontamination.

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Table 1: The effect of patients gender on the different types of oral candidiasis.

Types of Oral Candidiasis		Gender		Age	Total	
		Male	Female	Years range	No.	%
1	Pseudomembranous	45	67	18-35	112	31.0
2	Erythematous	21	30	28-42	51	14.1
3	Denture associated	18	25	44-60	43	11.9
4	Hyperplastic	22	24	27-34	46	12.8
5	Angular cheilitis	28	40	32-51	68	18.8
6	Median rhomboid glossitis	15	26	20-39	41	11.4
Total		149 (41.3%)	212 (58.7%)	-	361	100

Table 2: The effect of patients residence on the different types of oral candidiasis.

Types of Oral Candidiasis		Residence		Age	Total	
		Urban	Rural	Years range	No.	%
1	Pseudomembranous	36	63	18-35	99	27.4
2	Erythematous	23	31	28-42	54	15.0
3	Denture associated	18	27	44-60	45	12.5
4	Hyperplastic	28	36	27-34	64	17.7
5	Angular cheilitis	22	38	32-51	60	16.6
6	Median rhomboid glossitis	12	27	20-39	39	10.8
Total		139 (38.5%)	222 61.5%)	-	361	100

1. pseudomembranous candidiasis, white slough patches.

2. Erythematous candidiasis, a red, raw-looking lesion.

3. Denture associated candidiasis, Candida-associated denture biofilm.

4. Hyperplastic candidiasis, rough or nodular candidiasis.

5. Angular cheilitis candidiasis, inflammation the corners of mouth.

6. Median rhomboid glossitis, infection center of dorsal tongue.

Fig. 1: The Different Types and Symptoms of the Oral Candidiasis.