

# Oral Manifestations of Hiv

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## Abstract

Human Immunodeficiency Virus (HIV) is an globally prevailing fatal disease. Because of the development of HAART (Highly Active Anti-Retroviral Therapy), the disease severity has been decreased. The importance of oral symptoms of HIV has been widely recognized since the outbreak began. Around 40 million people are currently living with HIV worldwide and more than 1/3rd of them are present with oral symptoms. There are wide range of optimal clinical management and effective treatment resources available in developed countries which shows significantly less oral signs and symptoms in patients with HIV than the developing countries which are inhabited by most HIV-positive patients. This article presents a case report of all the oral manifestations encountered in a HIV patient based on CARE guidelines and reviewing the updated literature about HIV and oral manifestations of HIV.

**Keywords:** HAART, HIV, Human Immunodeficiency Virus, oral manifestations, oral symptoms.

## 1. Introduction

Human Immunodeficiency Virus (HIV) is an globally prevailing fatal disease. Because of the development of HAART (Highly Active Anti-Retroviral Therapy), the disease severity has been decreased. The importance of oral symptoms of HIV has been widely recognized since the outbreak began. Around 40 million people are currently living with HIV worldwide and more than 1/3rd of them are present with oral symptoms. There are wide range of optimal clinical management and effective treatment resources available in developed countries which shows significantly less oral signs and symptoms in patients with HIV than the developing countries which are inhabited by most HIV-positive patients. [1]

The oral manifestations of HIV are well established signs of disease progression, and their presence is an indication of an immunocompromised status. They are fatal and can cause morbidity and thus affect the quality of life (QoL) of these patients. The recent literature indicates that there has been a significant reduction in the prevalence of the oral manifestations of HIV reported in the Europe and the USA in response to antiretroviral therapy (ART). [2–5] In resource restricted countries where accessibility to health care and antiretroviral therapy is constrained, the oral manifestation of HIV continues to be a significant burden on these countries' health care

systems. [6]

An article published by the World Health Organisation (WHO), reported on access to HIV services in 144 low- and middle-income countries and the report identified several challenges in achieving efficient management of this condition. [7] Many patients started their treatment late in the disease process as more than 60% of HIV positive people did not know their HIV status. In addition, studies show that in the first year after the start of treatment, about 18% of patients became unfollowable. The report concludes that continued efforts in HIV research are needed to achieve universal access to HIV treatment and reverse the epidemic worldwide. In the year 1993, the ECC [8] standard developed the most widely used classification standard in the oral manifestations of the HIV literature as it is easy to understand and to apply in daily practice. After the creation of ART, the pattern of oral manifestations changed, but the same criteria continued to be used in the study, even in the absence of the latest criteria claims it to be advantageous.

Anti-retroviral therapy includes medications such as Nucleoside Reverse Transcriptase Inhibitors (NRTIs) such as lamivudine, zidovudine, Non-Nucleoside Reverse Transcriptase Inhibitors (NNRTIs) like nevirapine, rilpivirine, Protease Inhibitors (PI), Fusion Inhibitors, CCR5 such as maraviroc, Integrase Strand

Transfer Inhibitor (INSTIs) such as cabotegravir, dolutegravir etc., [9]

Oral manifestations may be the first sign of HIV and can sometimes extensively cause morbidity to these patients. The most frequently occurring oral manifestations includes the oral candidiasis, oral hairy leukoplakia, kaposi's sarcoma, aphthous stomatitis, herpes simplex virus, human papillomavirus and periodontal diseases. [10] Our team has extensive knowledge and research experience that has translated into high quality publications [11–25]. A thorough history on the chief complaint of the patient, past medical and dental histories are mandatorily elicited from the patients which brings a step closer to diagnose the disease. Intraoral and extraoral examination are classified into two., the inspectory and the palpatory examinations which helps the oral physicians to achieve the priliminary diagnosis of the disease.

In this article we will be reporting and discussing in detail about the ideal and most commonly encountered oral manifestations in a HIV postive patient who is under ART. This article also highlights about the facts on the oral presentation and disease severity in the same patient who is on a long-term ART.

### Case Report -

A 51-year-old male patient reported to the Department of Oral Medicine and Radiology at Saveetha Dental College and Hospital, Chennai with a complaint of pain in his left maxillary molar tooth for past 2 days. On probing into his past medical and personal history, the patient reported to be HIV positive and is under ART for past 25 years. He also gives a history of smoking for past 30 years and smokes 10 beedis a day.

On intraoral examination of the patient, the patient had areas of multiple whitish purple nodules covering the entire palate with pinpoint erythema seen in the soft palate extending to the oropharyngeal region. He also had whitish grey patch with cracked mud appearance in his right and left buccal mucosa which was extending to the alveolar mucosa bilaterally. There were areas of turdy white patch seen on the right buccal mucosa extending to the commissure of the lip on the same side. The diagnosis of all the findings were Stomatitis nicotini with superadded candidiasis due to reverse smoking in the palate exteding to the soft palate and oropharynx (figure 1), leukoplakia with smokers melanosis on the right and left buccal mucosa (figure

2) and candidiasis on the anterior region of the right buccal mucosa (figure 3).



Figure 1: A and B shows the stomatitis nicotina in the palate extending to the soft palate and oropharynx.



Figure 2: A and B shows leukoplakia with smoker's melanosis on the right and left buccal mucosa.



Figure 3: Candidiasis on the anterior region of the right buccal mucosa.

Treatment planned for this patient was extraction of the painful tooth followed by educating and counselling the patient to quit smoking. Topical medications such as antioxidants and antifungal therapy were advised for leukoplakia and candidiasis.

## 2. Discussion

Oral lesions in patients with HIV are common and it is proven that 70-80% of the patients will exhibit atleast one oral mucosal lesion during the course of the disease. [26] The most common oral manifestations of HIV are listed in the table 1.

Table 1: Lists of commonly occurring oral manifestations in HIV patients.	
Diseases	Oral Manifestations
	Infections
Bacterial	Periodontitis due to HIV Necrotising ulcerative gingivitis/ periodontitis Linear gingival erythema Tuberculosis Syphilis Cat-scratch disease
Viral	Herpes simplex virus Human papilloma virus Cytomegalovirus Varicella zoster virus Epstein-Barr virus
Fungal	Candidiasis Angular cheilitis Histoplasmosis Aspergillosis
Neoplasms	Kaposi's sarcoma non-Hodgkin's lymphoma Squamous cell carcinoma
Neurological disorders	Facial palsy Trigeminal neuralgia
Other oral manifestations	Aphthous stomatitis/ ulceration Stomatitis medicamentosa Xerostomia Lichenoid lesions Oral hairy leukoplakia Toxic epidermolysis

Periodontitis in individuals with HIV was an important oral manifestation affecting the overall oral health until the introduction of ART in these patients. ART has proven to be significantly effective by reducing the periodontal diseases improving the quality of life of these patients. Most commonly encountered periodontal diseases are the linear gingival erythema (LGE), necrotizing ulcerative gingivitis (NUG) and necrotizing ulcerative periodontitis (NUP). [27,28] Patient tend to report with characteristic features such as bleeding from the gingiva, discomfort, and sometimes painful. LGE appears as a thin reddish band around the gingival margin, frequently occurring in the anterior teeth. NUG and NUP are conditions seen most commonly in adults where there is areas of ulceration, spontaneous bleeding, necrosis, loss of periodontal ligament space with bone loss and gingival recession. The management involves the debridement of the necrotic slough tissues and antimicrobial therapy with advocacy of good oral hygiene and regular follow up. [26,29–31] Intraoral lesions caused by tuberculosis and syphilis represent as granulomatous ulcerations and Canker respectively. These are secondary oral lesions to HIV and more commonly seen in the labial mucosa, tongue, gingiva and palate. Management is by administration of systemic antibiotics. [32]

Around 95% of HIV positive individuals are seropositive to Herpes simplex virus 1 or 2 and develop infections caused by them. Oral lesions in those patients are majorly caused by the HSV-1, however sometimes even HSV-2 causes oral manifestations. [33] These are shallow ulcers which tend to heal within 5-10 days' time. However, HIV patients with low CD4 cell count may sometimes have deep non-healing ulcers and may sometimes develop resistance to acyclovir and are called acyclovir-resistant herpes simplex virus. [34–36] HSV in HIV patients are treated with topical and systemic antiviral drugs for a period of 7-10 days. Human papilloma virus (HPV) infection depict a wide range of oral presentations and the most common are the focal epithelial hyperplasia, condyloma acuminatum and verruca vulgaris, however they are not pathognomonic of the HIV infection. [37]

Oral candidiasis is majorly caused by the *Candida albicans* seen commonly in the immunosuppressed individuals. These appear as white plaques which can be easily scraped off except for the erythematous type which appears as flat, red patches and is non scrapable. They usually occur in the tongue, hard palate and the buccal mucosa. Angular cheilitis is an infection caused by the *C.albicans* and *S.aureus* which represents itself as erythematous lesions in the commissure of the lips. Management of fungal infections in HIV individuals requires both high end systemic and topical antifungal therapy. However, resistance to the drugs such as fluconazole have been reported in severe immunodeficient patients. Deep fungal infections such as *aspergillus* spp. are quite uncommon and if present are treated with Amphotericin B administered intravenously. [34,38]

Kaposi's sarcoma (KS) is the most commonly encountered carcinoma relating to HIV/AIDS and prevalent among the homosexual men. KS is a vascular tuour of the palate appearing reddish blue or purple in colour and caused by the human herpes virus - 8 (HHV-8). KS also can be found in the tongue, gingiva appearing initially as a macule or a nodular lesion and eventually becomes ulcerated. Management is by surgical, or laser excision followed by chemoradiotherapy if necessary. [27,39,40] Non-Hodgkin's Lymphoma (NHL) is the second commonly occurring condition in HIV positive individuals and injecting drug abusers with the oral presentation being the most important sign of either HIV disease itself or the HIV disease progression in already positive individual. NHL is seen in the oral cavity more commonly in the palate and the gingival region appearing as soft tissue masses with ulcerative areas. [26]

Aphthous stomatitis is the most commonly and frequently occurring oral lesions in HIV patients. Aphthous stomatitis are addressed in various terminologies such as aphthous ulcerations, recurrent aphthous ulcers (RAU), minor RAU, major and herpetiform RAU. RAU are painful ulcers seen commonly in the labial/buccal mucosa, tongue and soft palate. They appear smaller to larger in size and are frequently occurring in the oral cavity in the immunocompromised individuals. They appear clinically as a raised reddish halo of inflammation with yellow-grey pseudomembranous coverings. Management of RAU is by first addressing the pain component with analgesics or anaesthetic agents along with systemic medications such as corticosteroids. If resistant to steroids, then drugs such as thalidomide or cholecalciferol can be prescribed. [41]

Oral hairy leukoplakia (OHL) is the mostly commonly occurring EBV infection in moderate to advanced immunosuppressive HIV/AIDS individuals. They clinically present themselves as white corrugated non scrapable lesions seen on the lateral border of the tongue, however there are lesions occurring in the buccal mucosa as well. They are generally asymptomatic and does not require any treatment. If the patient is symptomatic, antivirals prescribed for a duration of 1 or 2 months have proven to be beneficial. [42–45]

### 3. Conclusion

To conclude, this article highlights the classic oropharyngeal presentations of HIV associated diseases and discusses in detail the other frequently occurring and less commonly occurring oral manifestations pertaining to HIV.

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