



## ORAL MANIFESTATIONS OF HIV: AN OVERVIEW

## Oral Pathology

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## ABSTRACT

HIV/AIDS pandemic maintains to plague the world. Evaluation of oral status is essential at each stage within the control of HIV disorder. Oral pathologists and specialists can contribute efficaciously to manage of HIV/AIDS through education, affected person care, infection manipulation, and surveillance. Dental specialists have an essential assignment of determining the accurate prognosis of oral manifestations and choosing the proper remedy for every case. This assessment affords facts on HIV-associated orofacial lesions, their clinical presentation, and updated treatment strategies.

## KEYWORDS

HIV, Oral Hairy Leukoplakia, Candidiasis

## INTRODUCTION

Oral health plays a major role in the overall health status of HIV infection and it is an important component of quality of life (1,2). HIV-associated oral infections can be seen in 30 to 80 percent of the HIV-infected population (3). Oral health care professionals play important role in the control of HIV/AIDS through health education, patient care, infection control, and surveillance(1).

Early signs of HIV infection can be seen in the oral cavity of HIV-infected individuals. In the early stages of HIV proper treatment using highly active antiretroviral therapy(HAART) can reduce the spread of oral lesions such as candidiasis, hairy leukoplakia, and Kaposi's sarcoma (7,8,9,10).

#### Classification of orofacial lesions associated with HIV/AIDS in adults.

##### Lesions strongly associated with HIV infection.

- Candidiasis
- Erythematous
- Pseudomembranous
- Hairy leukoplakia
- Kaposi's sarcoma
- NonHodgkin's lymphoma
- Periodontal disease
- Linear gingival erythema
- Necrotizing ulcerative gingivitis
- Necrotizing ulcerative periodontitis.

##### Lesions less commonly associated with HIV infection.

- Bacterial infections
- Mycobacterium aviumintracellulare
- Mycobacterium tuberculosis
- Melanotic hyperpigmentation
- Necrotizing (ulcerative) stomatitis
- Salivary gland disease
- Dry mouth due to decreased salivary flow rate
- Swelling is seen in the major salivary glands either Unilaterally or bilaterally.
- Thrombocytopenic purpura
- Ulceration NOS (not otherwise specified)

- Viral infections
- Herpes simplex virus
- Human papillomavirus (wart like lesions)
- Condyloma acuminatum
- Focal epithelial hyperplasia
- Verruca Vulgaris
- Varicella zoster virus
- Herpes zoster
- Varicella

##### Lesions are seen in HIV infection

- Bacterial infections
- Actinomyces Israel
- Escherichia coli
- Klebsiella pneumoniae
- Catscratch disease
- Epithelioid (bacillary) angiomatosis
- Neurologic disturbances
- Facial palsy
- Trigeminal neuralgia

##### Fungal infection other than candidiasis

- Cryptococcus neoformans
- Geotrichum candidum
- Histoplasma capsulatum
- Mucoraceae (mucormycosis/ zygomycosis)
- Aspergillus flavus

- Recurrent aphthous stomatitis
- Viral infections
- Cytomegalovirus.

#### Classification of Oral Lesions in HIV Infection in pediatric patients.

##### Lesions commonly associated with pediatric HIV infection

- a) Candidiasis
  - Pseudomembranous
  - Erythematous
  - Angular cheilitis
- b) Herpes simplex virus infection
- c) Linear gingival erythema
- d) Parotid enlargement

- e) Recurrent aphthous ulcers
  - Minor
  - Major
  - Herpetiform

#### Lesions least frequently related to pediatric HIV infection

- a) Bacterial infections of oral tissues
- b) Periodontal diseases
  - Necrotizing (ulcerative) gingivitis
  - Necrotizing (ulcerative) stomatitis
  - Necrotizing stomatitis
- c) Seborrhic dermatitis
- d) Viral infections
  - Cytomegalovirus
  - Human papilloma virus
  - Molluscum contagiosum
  - Varicella – Zoster virus
  - Herpes zoster
  - Varicella
- e) Xerostomia

#### Lesions that have a greater affinity with HIV infection but seldom in children

- a) Neoplasms
  - Kaposi's sarcoma
  - Non-Hodgkin's lymphoma
- b) Oral hairy leukoplakia
- c) Tuberculosis-related ulcers

#### Oral Hairy Leukoplakia

Oral hairy leukoplakia (OHL) was discovered in 1981 and proclaimed in 1984. This lesion is seen in the lateral borders of the tongue in HIV-infected individuals. Histopathologically Koilocytosis is seen in the prickle cell layer. OHL has no specific treatment. Healthcare professionals should focus on multivitamins and zinc supplements. Healthcare professionals must rule out CD4+ T-cell levels in the infected individuals.

#### Non-hodgkin's Lymphoma

It is a malignant disease of the lymphoid system, highly heterogeneous, both histologically and clinically. It is the most common lymphoma associated with HIV infection and is usually seen in late stages with CD4 lymphocyte counts of less than 100/mm<sup>3</sup>. Clinically it is firm, elastic, and often reddish or purplish swelling, with or without ulceration. Most commonly seen in the gingiva and palatal mucosa.

#### Kaposi's Sarcoma

Kaposi's sarcoma (KS) is the most common HIV-associated oral malignancy. Most commonly seen in the gingiva and tongue. Lesions vary from crimson to bluish crimson to deep brown and might range in size from some millimeters to numerous centimeters.

#### Periodontal Diseases

Periodontal diseases that are related to HIV are classified as linear gingival erythema or marginal gingivitis, necrotizing ulcerative disease, and necrotizing stomatitis (4,6,21).

#### Linear Gingival Erythema

It can be described as a distinct fiery crimson band alongside the margin of the gingiva, most often found in anterior teeth, observed in some instances through bleeding and soreness(1,19). The etiology of this oral sickness seems to contain an invasion by using *Candida* species of the gingival tissue(1,9). It is most commonly seen in immunocompromised patients with CD4+ T lymphocyte counts <200 cells/mm<sup>3</sup> (1,4,9).

#### Necrotising Ulcerative Disease

Necrotizing ulcerative disease (NUG) comprises necrotizing ulcerative gingivitis and necrotizing ulcerative periodontitis (1). necrotizing ulcerative gingivitis is a condition and is characterized clinically by necrosis of the free gingival margin, the crest of the gingiva, and the interdental papillae. Necrotizing ulcerative periodontitis (NUP) may be an extension of necrotizing ulcerative gingivitis (NUG) into the periodontal structures, leading to periodontal attachment and bone loss.

#### Bacterial Infections

The oral lesions associated with bacterial infection are linear erythematous gingivitis, necrotizing ulcerative periodontitis, and less commonly, bacillary epithelioid angiomatosis and syphilis. In several studies, it was ruled out that there is a connection between tuberculosis and oral candidiasis.

#### Melanotic Pigmentation

Melanotic pigmentation is seen in patients with a long history of HIV. Clinically it is single or multiple brownish or brown-black macules or ill-defined diffuse areas of melanin hyperpigmentation. These pigmentations are most commonly seen in the buccal mucosa.

#### Salivary Gland Disease

HIV infections cohort with salivary gland disorder (SGD) shows clinical consequences in a gland-enlargement waft of secretions (1,4,19). The enlargement typically entails the tail of the parotid gland or, less usually, the submandibular gland, and it can present uni- or bilaterally with periods of improved or reduced size(1). Reduction in salivary flow and xerostomia is evident. Male predominance (4).

#### Oral Ulceration And Recurrent Aphthous Stomatitis.

Recurrent aphthous ulcers can be seen in 3-13% of HIV-infected patients (25). It is broadly classified into minor, major, and herpetiform. If the ulcer persists for more than 2 weeks it is indicative of immunosuppression.

#### Herpes Simplex Infection

It is the most common infection seen in HIV-infected individuals. In the oral cavity, it may manifest as herpes labialis or primary herpetic gingivostomatitis(21). Diffuse mucosal ulcerations are seen in the oral cavity (1). Most commonly these lesions are seen on lips and keratinized tissues, including the hard palate and gums (2). An ulcer that prevails longer than 1 month is an indication in immuno suppressive patients(25).

#### Herpes Zoster Infection

It is a condition most commonly seen in senior citizens who are immunocompromised. The reactivation of varicella-zoster virus infection can occur during the course of human immunodeficiency virus (HIV) infection as an initial indicator of the disease.

#### CONCLUSION

The drawback of HIV-infected individuals is that they are unaware of their conditions. Early Diagnosis of HIV infections plays a significant role in the management of the infections. The primary infection that's seen in the oral cavity of HIV-infected individuals is Oral candidiasis and followed by other infections.

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