



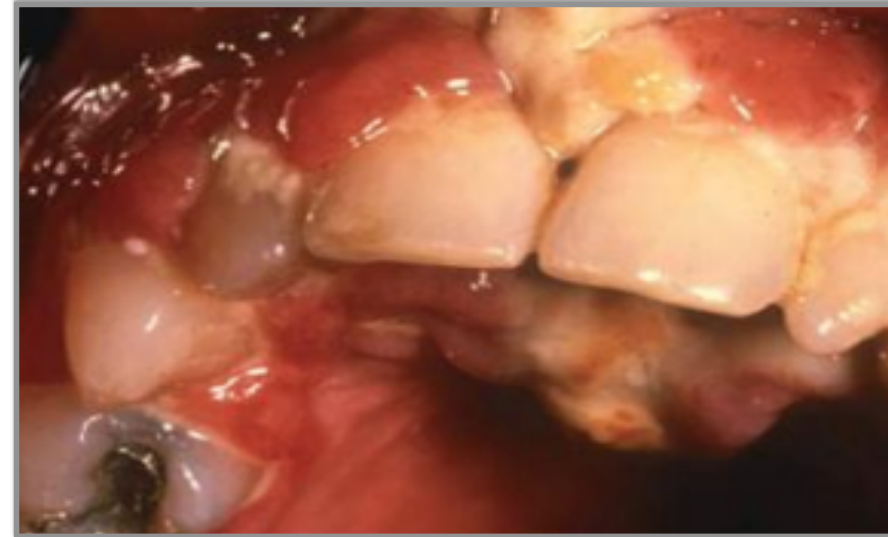
ORAL MANIFESTATIONS OF HIV INFECTIONS: WHAT YOU NEED TO KNOW



FUNGAL LESIONS

Pseudomembranous Candidiasis (Thrush)

Semi-adherent, whitish yellow, soft and creamy patches that are overgrowth of fungi mixed with inflammatory and desquamated epithelium cells. The white patches can be wiped off with a gauze swab, and underneath will appear a raw, reddish and slightly bleeding surface. Other common locations for thrush occurrence are lip/cheeks, tongue, roof of the mouth and gums.



Erythematous Candidiasis (Atrophic Candidiasis)

A red, flat, subtle lesion frequently affecting different areas including the roof of the mouth, dorsum of the tongue, cheeks and can be associated with desquamation and even with some whitish stippling. Unlike thrush, you cannot wipe the white spots off. Atrophic candidiasis may also present as a “kissing” lesion—if a lesion is present on the tongue, the roof of the mouth should be examined for a matching lesion, and vice versa.





FUNGAL LESIONS

Angular Cheilitis (Perleche)

A reddish fissuring at one or both corners of the mouth, with or without ulceration, and may be accompanied by subjective symptoms of soreness, tenderness, burning or pain. Often presents with xerostomia (dry mouth) and can also be also found in patients with ill-fitting complete dentures.



Hyperplastic Candidiasis (Candidal Leukoplakia)

White and hyperplastic in some cases whilst others may present as papillary (bubbly) hyperplasia. Associated with severe immunosuppression. They can't be removed by scrapping like thrush and are often accompanied by a burning sensation and extreme xerostomia (dry mouth). Can be found in different areas of the mouth including the tongue and can be whitish in colour.





VIRAL LESIONS

Herpes simplex virus (HSV 1 & 2)

A single or multiple vesicles (bubbles) typically ruptured causing painful ulcers. This may cluster or stay discrete. Lesions may extend to the labial (and perioral) skin, as well as widespread areas inside the mouth. We all carry the virus, but it can be activated by immunosuppression, certain foods, UV light, stress, fever, and trauma. Recurrent lesions are common.



Herpes zoster virus (Shingles)

On the face: unilateral, with skin and mucosa eruption of maculopapular, linear, clustered vesicles that appear along the course of one or more branches of trigeminal nerve of the face.



Inside the mouth: present in the form of spread (ephemeral) vesicles, which break up and leave unilateral herpetiform ulcerations that are most commonly found in the roof of the mouth. The lesions can further extend to the bone and cause necrosis (bone infraction).





VIRAL LESIONS

Human Papillomavirus (HPV)

White or pink warts that are single or multiple. May be cauliflower-like, spiked, or raised with a flat surface anywhere in the oral cavity. Roof of the mouth, tongue and lips are most common areas affected. Oral warts are uncommon in immunocompetent individuals but are more likely to arise in those with concomitant HIV infection.



Cytomegalovirus (CMV)

Ulcers that are painful, large, sharply demarcated, non-specific and punched-out usually on the roof of the mouth or the gums but occasionally on the cheeks, lips, tongue, and pharynx with lack of surrounding swelling (edema). Their size can vary from a few millimetres up to several centimetres.



Oral Hairy Leukoplakia

Slightly raised, painless, white, vertically corrugated hyperkeratotic striated lesion on the lateral border of the tongue. Sometimes on the dorsal or ventral tongue where it is usually flat and plaque-like, and on the cheeks. It tends to be whitish in colour.





BACTERIAL LESIONS

Linear Gingival Erythema

Appearing as a distinct reddish (erythematous) band 2 to 3 mm in width along the gingival margin. Occasional gingival bleeding, often in the absence of plaque or dental calculus.



Necrotizing Ulcerative Gingivitis

Very painful, swollen, red, bleeding gums with ulcers and foul mouth odour. Primarily caused by bacteria (gram-negative bacilli) and it is associated with severe immunosuppression. It causes rapid destruction of the gums (soft tissues).



Necrotizing Ulcerative Periodontitis:

Severe deep-aching jaw pain can be one of the hallmarks. “Punched-out” dental papilla, soft tissue and bone necrosis, spontaneous bleeding, deep-seated pain, mouth odour, reddish in appearance, spontaneous exfoliation of teeth, necrosis of the bone, and swelling are common.

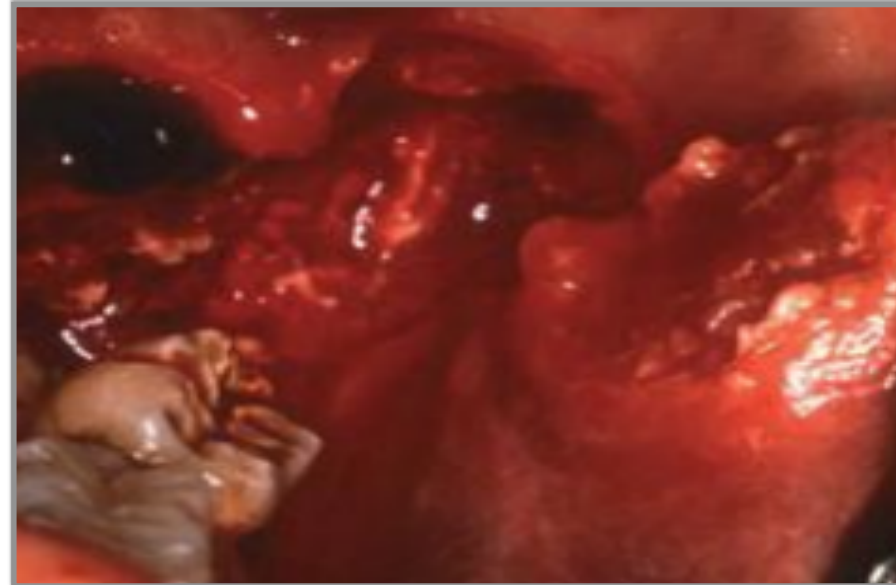




BACTERIAL LESIONS

Necrotizing Ulcerative Stomatitis

Localized and acute, rapid, extensive, painful tissue destruction and necrosis from gums to adjacent mucosal and osseous tissues with foul mouth odour.



Bacillary Angiomatosis

Oral lesions resemble Kaposi's sarcoma with painless, reddish, and slightly elevated soft tissue plaque or nodule. Roof of the mouth, cheeks, gums and tongue are the most common sites of this disease. This disease is also commonly found on skin as purplish red papules, plaques, and nodules as well.





NEOPLASTIC LESIONS

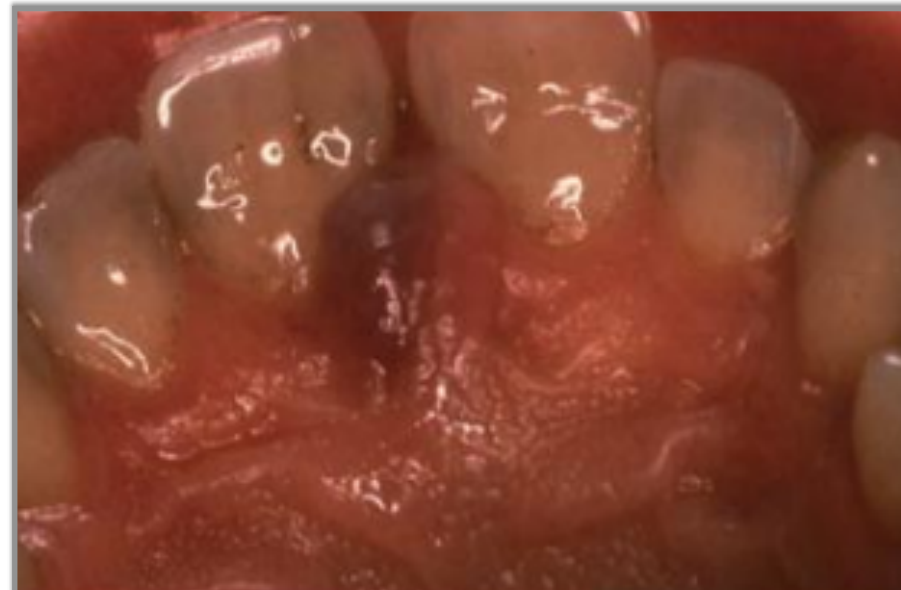
Kaposi's Sarcoma

Blue, red, or purple macules, papules, or patches on the palate (most commonly in the roof of the mouth, hard and soft palates), gums, cheeks, and/or tongue that may not blanch with applied pressure. Lesions are usually painless, but as they progress into unilocular or multifocal vascular soft tissue nodules and increase in size, patients may experience pain due to secondary trauma and ulceration.



Squamous Cell Carcinoma (cancer)

May present as leukoplakia (whitish), erythroplakia (reddish), or combination of both, or as ulcers or masses. They are most commonly found in the gums and lips, as well as any other area.





LYMPHOMAS

Non-Hodgkin's Lymphoma

Ulcerations or masses that are painful, firm, elastic, often reddish or purplish. They enlarge rapidly with the most common areas involved being the gums of the back teeth, the roof of the mouth (soft palate), back molar area, tonsils areas and tongue. Such masses may be discrete (shallow) or large and multifocal.



Salivary Gland Disease (SGD) and xerostomia (dry mouth)

SGD: At the initial stages of HIV infection, even without immunosuppression, the parotid glands (in front of the ear) can grow with no apparent cause. It is painless bilateral parotid gland enlargement without signs of infection. This might cause facial disfiguration.

Xerostomia (dry mouth): Patients living with HIV have higher rates of salivary flow reduction, which can lead to xerostomy (sensation of dry mouth). With low and no saliva, the mouth has lower capacity to fight off the acids produced by bacteria and patients might be at higher risk to develop tooth decay.





OTHER ORAL LESIONS OF NO PARTICULAR CAUSATIVE AGENTS

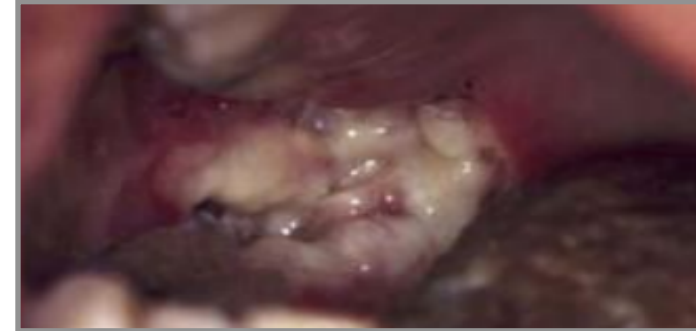
Aphthous Stomatitis

Oval ulcers with a bright red halo and often clearly defined borders. Usually located on movable, nonkeratinized mucosa (cheeks) and also on the floor of mouth (under the tongue), tongue, tonsils, under the lips, and roof of the mouth (soft palate). But it may appear anywhere.



Neutropenic Ulcerations

Very painful ulcerations that can appear on both keratinized and non-keratinized mucosa tissues (cheeks and gums). They are large and unusual-looking, or fulminant ulcers in the oral cavity that cannot otherwise be identified or explained as any other condition.



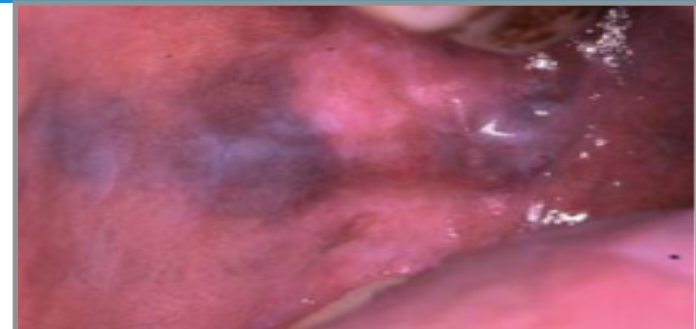
Idiopathic Thrombocytopenic Purpura (ITP)

Not related to any trigger (cause) in particular. The tongue can be one location, but it varies. It might require some blood work.



Hyperpigmentation of the oral mucosa/cheeks

Appear as flat, brown or blue mucosal (cheeks) lesions. It can appear as a patchy pigmentation of the oral mucosa, which is a common finding in dark-skinned races.



WHAT TO DO IF YOU FIND A LESION IN YOUR MOUTH, OR THE MOUTH OF A PATIENT?

PATIENTS

- ◆ Having one of these infections does not necessarily mean an HIV infection is the cause.
- ◆ In most cases, these lesions disappear spontaneously after 15/20 days, but it is recommended you still see a health care professional.
- ◆ If they do not disappear, you should talk to your dentist or dental hygienist.
- ◆ Know the risks for HIV infection: try to always use protection and safe practices.
- ◆ Keep a balanced diet and brush and floss regularly. Dentures have to be clean daily as well.
- ◆ You might also discuss with your dentist or dental hygienist about getting tested for HIV routinely.

ORAL HEALTHCARE PROVIDERS

- ◆ Having one of these infections does not necessarily mean your patient has HIV.
- ◆ In most cases, these lesions disappear spontaneously after 15/20 days.
- ◆ If a patient is diagnosed with one of these lesions, you might want to recommend a HIV test to your patient.
- ◆ Have HIV testing resources, information and referrals in your office, at all times.
- ◆ Know the risks for HIV infection: be ready and willing to communicate them to your patients.
- ◆ It is valuable to consider that you may be the only healthcare provider your patient sees, this is why you play an important role in their health, and could ultimately help save lives by knowing and providing information about HIV and HIV Testing.



REFERENCES

1. Dull JS, Sen P, Raffanti S, Middleton JR. Oral candidiasis as a marker of acute retroviral illness. *South Med J*. 1991 Jun;84(6):733-5, 739.
2. Egusa H, Soysa NS, Ellepola AN, Yatani H, Samaranayake LP. Oral candidosis in HIV-infected patients. *Curr HIV Res*. 2008 Nov;6(6):485-99.
3. Heinic GS, Greenspan D, MacPhail LA, Schiødt M, Miyasaki SH, Kaufman L, Greenspan JS. Oral *Histoplasma capsulatum* infection in association with HIV infection: a case report. *J Oral Pathol Med*. 1992 Feb;21(2):85-9.
4. Wheat J. Endemic mycoses in AIDS: a clinical review. *Clin Microbiol Rev*. 1995 Jan;8(1):146-59. Review.
5. Glick M, Cohen SG, Cheney RT, Crooks GW, Greenberg MS. Oral manifestations of disseminated *Cryptococcus neoformans* in a patient with acquired immunodeficiency syndrome. *Oral Surg Oral Med Oral Pathol*. 1987 Oct;64(4):454-9.
6. MacPhail LA, Greenspan D, Schiødt M, Drennan DP, Mills J. Acyclovir-resistant, foscarnet-sensitive oral herpes simplex type 2 lesion in a patient with AIDS. *Oral Surg Oral Med Oral Pathol*. 1989 Apr;67(4):427-32.
7. Greenspan D, de Villiers EM, Greenspan JS, de Souza YG, zur Hausen H. Unusual HPV types in oral warts in association with HIV infection. *J Oral Pathol*. 1988 Nov;17(9-10):482-8.
8. Feller L, Khammissa RA, Wood NH, Marnewick JC, Meyerov R, Lemmer J. HPV-associated oral warts. *SADJ*. 2011 Mar;66(2):82-5.
9. Syrjänen S. Human papillomavirus infections and oral tumors. *Med Microbiol Immunol*. 2003 Aug;192(3):123-8. Epub 2003 Jan 18.
10. Jones AC, Freedman PD, Phelan JA, Baughman RA, Kerpel SM. Cytomegalovirus infections of the oral cavity. A report of six cases and review of the literature. *Oral Surg Oral Med Oral Pathol*. 1993 Jan;75(1):76-85.
11. Itin PH, Lautenschlager S. Viral lesions of the mouth in HIV-infected patients. *Dermatology*. 1997;194(1):1-7.
12. Heinic GS, Greenspan D, Greenspan JS. Oral CMV lesions and the HIV infected. Early recognition can help prevent morbidity. *J Am Dent Assoc*. 1993 Feb;124(2):99-105. Review.
13. Greenspan JS, Greenspan D. Hairy leukoplakia and other oral features of HIV infection. *Immunol Ser*. 1989;44:449-65.
14. Epstein JB, Mathias RG. Oral manifestations of human immunodeficiency virus infection. *Can Fam Physician*. 1988 Aug;34:1773-80.
15. Kabani S, Greenspan D, deSouza Y, Greenspan JS, Cataldo E. Oral hairy leukoplakia with extensive oral mucosal involvement. Report of two cases. *Oral Surg Oral Med Oral Pathol*. 1989 Apr;67(4):411-5.
16. Glick M, Muzyka BC, Salkin LM, Lurie D. Necrotizing ulcerative periodontitis: a marker for immune deterioration and a predictor for the diagnosis of AIDS. *J Periodontol*. 1994 May;65(5):393-7.
17. Robinson P. Periodontal diseases and HIV infection. A review of the literature. *J Clin Periodontol*. 1992 Oct;19(9 Pt 1):609-14.
18. Feller L, Wood NH, Raubenheimer E. Complex oral manifestations of an HIV-seropositive patient. *J Int Acad Periodontol*. 2006 Jan;8(1):10-6.
19. Pinheiro A, Marcenes W, Zakrzewska JM, Robinson PG. Dental and oral lesions in HIV infected patients: a study in Brazil. *Int Dent J*. 2004 Jun;54(3):131-7.
20. Reichart PA. Oral manifestations in HIV infection: fungal and bacterial infections, Kaposi's sarcoma. *Med Microbiol Immunol*. 2003 Aug;192(3):165-9.
21. van der Waal I, Schulten EA, Pindborg JJ. Oral manifestations of AIDS: an overview. *Int Dent J*. 1991 Feb;41(1):3-8. Review.
22. Dodd CL, Greenspan D, Greenspan JS. Oral Kaposi's sarcoma in a woman as a first indication of HIV infection. *J Am Dent Assoc*. 1991 Apr;122(4):61-3.
23. Levell NJ, Bewley AP, Chopra S, Churchill D, French P, Miller R, Gilkes JJ. Bacillary angiomatosis with cutaneous and oral lesions in an HIV-infected patient from the U.K. *Br J Dermatol*. 1995 Jan;132(1):113-5.
24. Kaugars GE, Burns JC. Non-Hodgkin's lymphoma of the oral cavity associated with AIDS. *Oral Surg Oral Med Oral Pathol*. 1989 Apr;67(4):433-6.
25. MacPhail LA, Greenspan D, Feigal DW, Lennette ET, Greenspan JS. Recurrent aphthous ulcers in association with HIV infection. Description of ulcer types and analysis of T-lymphocyte subsets. *Oral Surg Oral Med Oral Pathol*. 1991 Jun;71(6):678-83.
26. Schiødt M, Dodd CL, Greenspan D, Daniels TE, Chernoff D, Hollander H, Wara D, Greenspan JS. Natural history of HIV-associated salivary gland disease. *Oral Surg Oral Med Oral Pathol*. 1992 Sep;74(3):326-31.
27. Soberman N, Leonidas JC, Berdon WE, Bonagura V, Haller JO, Posner M, Mandel L. Parotid enlargement in children seropositive for human immunodeficiency virus: imaging findings. *AJR Am J Roentgenol*. 1991 Sep;157(3):553-6.
28. Pindborg JJ. Classification of oral lesions associated with HIV infection. *Oral Surg Oral Med Oral Pathol*. 1989 Mar;67(3):292-5.
29. Greenspan JS. Oral manifestations of AIDS: a pictorial guide. *Dent Manage*. 1991 Apr;31(4):24-5, 29, 30.
30. Greenspan D, Greenspan JS. Oral manifestations of HIV infection. *AIDS Clin Care*. 1997 Apr;9(4):29-33.
31. Reichart PA. Oral manifestations in HIV infection: fungal and bacterial infections, Kaposi's sarcoma. *Med Microbiol Immunol*. 2003 Aug;192(3):165-9.
32. Reznik DA. Oral manifestations of HIV disease. *Top HIV Med*. 2005 Dec-2006 Jan;13(5):143-8.