

Hairy Leukoplakia as An Early Oral Manifestation of HIV: A Case Report and Review, Kingdom of Saudi Arabia, 2017

Al-Sharif Abdulrhman

Dental Department, Al-Sulaimaniya Primary Health Care Center, Ministry of Health, Kingdom of Saudi Arabia.

Corresponding author: Al-Sharif Abdulrhman, E-mail: vip1918@hotmail.com

ABSTRACT

Oral hairy leukoplakia was reported in 1984 for the first time. It is caused by the Epstein Barr Virus, and it is an early indicator of an immune deficiency status. This lesion is usually asymptomatic and it is common in people with HIV infection. For all HIV patients, a comprehensive periodontal and dental treatment should be done because oral tissues may reflect immune deficiency status. And nearly all HIV-infected individuals develop oral lesions at some time during their illness. checkups allow detecting any potential problems that may not even be aware of it. So, detailed history and clinical examination can allow the dentist to diagnose a life-threatening disease.

Keywords: Oral hairy leukoplakia, human immunodeficiency virus, dentist.

CASE REPORT

A 38 years old Saudi male patient came to the dental clinic complaining of gum pain in the upper left side for the last week. The pain is continuous aggravated by acidic and spicy food, and relieved by paracetamol. And he reported that he had a white patch on the lateral surface of his tongue with burning sensation. And he had unknown mild fever for 2 months back. He reported unintended weight loss with normal to decreased appetite.

He is a hypertensive patient on calcium channel blocker drug. He is smoking about one pack of cigarette per day.

The patient has history of previous dental visit due to similar pain episode when he was in

summer vacation out of the Kingdome about 6 months ago. And he took medication but he didn't improve completely.

On examination, the vital signs were within normal ranges. The face is looked normal without apparent swelling (figure 1). In oral cavity inspection the mouth opening was 4.8 cm, complete set of teeth, dental caries with generalized stain was present.

He had thick, hard, irregular white non-painful patches on the left lateral side of the tongue (figure 2). The patches look raised surface corrugated in appearance with no erythema or ulceration. And he had gingivitis on the upper left side of the gum.



Fig. 1: extra oral picture



Fig. 2: Irregular white patches on the left lateral side of the tongue

Two submandibular lymph nodes on the left side were palpable measuring around (2 x1.5), (1x1) cm, and they were soft movable and tender.

After clinical examination a diagnosis of oral hairy leukoplakia was suggested (OHL). Oral Candidiasis was excluded because the white patches were non scrapable.

The patient has been referred to oral pathologies for a biopsy. A diagnosis of OHL made if the mucosa shows mild papillary acanthosis, hyperkeratosis and marked Parakeratosis of the superficial epithelial layer, and ballooning of koilocyte like cells with ground glass appearance of the nuclei. In-situ hybridization for EBV is performed to confirm the diagnosis.

When the patient failed to response to treatment, underlying immunodeficiency was suspected.

After taking a detailed history; the patient declared he was married for 1 year, and he didn't have any extra-marital relationships. And he revealed out that the Sterilization procedures where he had the dental care when he was in his vacation were doubtful.

The patient is advised to do HIV testing which return positive. CD4 T-cell count was 196 cells/ μ L. So a hairy leukoplakia as an early sign of HIV helps to detect the disease and to start the appropriate management.

REVIEW

Oral hairy leukoplakia is a white, hyperplastic, vertically corrugated lesion that occurs on the lateral border of the tongue usually unilateral.

The lesion is caused by the Epstein Barr Virus and it is an early indicator of an immune deficiency^[1].

OHL was first found in 1981 in young homosexual immunosuppressed patients, and it was reported in 1984 for the first time^[2].

It was found in a kidney transplant recipient patient, and it was reported in 1988^[3]. After that several studies reported OHL in patients with drug induced immune suppression^[4].

Now it is well known that OHL is related to immunosuppression condition in general; not only HIV patients^[5].

Immunodeficiency is when the body immune system is unable to perform its normal functions in protecting the host. Two types of immunodeficiency are known. The primary immunodeficiency is hereditary/genetically, and the secondary immunodeficiencies are acquired^[6].

Secondary immunodeficiencies are much more common than the primary as they are related to other systematic disorders e.g. diabetes, undernutrition, HIV infection or immunosuppressive treatment e.g. cytotoxic chemotherapy, bone marrow ablation before transplantation and radiation therapy^[6].

The major causes of OHL in patients with HIV are the presence of EBV, the decrease of Langerhans cells and dendritic cells in those lesions^[7].

Recent studies reported that OHL is maintained by repeated direct infection of the epithelial cells with EBV and not by reactivation of latent EBV^[8].

Pseudo oral hairy leukoplakia is lesion that resembles OHL but it is neither associated with HIV infection nor containing Epstein-Barr virus^[9].

EBV is a human herpes virus that is associated with many human diseases such as infectious mononucleosis syndrome, malignant lymphomas and nasopharyngeal carcinoma. EBV infection results in lifelong persistence of the virus^[10].

OHL is a benign lesion that doesn't always require a treatment^[11].

As mentioned before, OHL found as unilateral or bilateral adherent white or gray patches on the lateral borders and dorsum of the tongue or on the ventral surfaces^[2, 12].

These patches are usually irregular, forming eminent folds resembling a hair sometimes, but more common giving rise to a corrugated appearance^[13]. On the ventral surface of the tongue the lesion can be found flat^[14].

Although this lesion is usually asymptomatic, it might be presented with soreness or burning sensation^[15].

The histopathological features of OHL are epithelial hyperplasia with hyperparakeratosis and acanthosis^[12, 13].

The thickened surface layer may separate from the underlying cells giving rise to projection that produce folds or hairs^[14].

The differential diagnoses include oral candidiasis, lichen planus, tobacco associated leukoplakia, human papillomavirus-induced oral intraepithelial neoplasia, and oral squamous cell carcinoma. In most of the cases of OHL the

diagnosis based on clinical basis and doesn't need biopsy^[16].

The pathogenesis of OHL is complex and includes the persistence of Epstein-Barr virus replication and virulence, systematic immunosuppression and suppression of the local host immunity^[16].

HIV is a considerable health care problem^[17]. In 1983 Barre-Sonoussi and Gallo's initially described the human immunodeficiency virus type I (HIV-1) then in 1986 Clavel *et al.* first described (HIV-2), for almost twenty years these two viruses have been known as the main cause of the acquired human immunodeficiency syndrome (AIDS)^[18].

An estimation of 40.3 million people by the end of 2005 were living with HIV infection around the world, a huge number of them were living in a low income countries^[19].

In the United States in 2013, an estimated 1.2 million adolescents and adults were living with HIV, and 13% of them weren't aware of their infection^[20]. HIV diagnosis methods underwent many generation of development^[20].

The FDA approved the Bio-Rad BioPlex 2200 HIV Ag/Ab in 2015 which is the fifth generation HIV screening test; this test detects HIV antibody and HIV-1 p24 antigen like the previous fourth generation, but provides separate result for each^[20]. Transmission risk of HIV patient to dental care provider stays very low^[21]. Transmission of HIV from dental health care provider to the patients is also rare^[21].

For all patients, standard precautions should be followed whether or not they are infected. Dental care providers should wear protective barriers e.g. (gloves, masks and protective eye wear)^[22].

Xerostomia is an oral manifestation of HIV that is a side effect of the drugs.

Another oral finding is oral candidiasis, in three common presentations: angular cheilitis, erythematous candidiasis, and pseudomembranous candidiasis.

Kaposi's sarcoma stays the most frequently oral malignant associated with HIV. Kaposi's sarcoma can be macular, nodular, or raised and ulcerated, with color ranging from red to purple. Other manifestations are periodontal disease such as: Linear gingival erythema, and ulcerative disease e.g. (Herpes simplex virus, aphthous ulcerations, and neutropenic ulcerations)^[23].

Pain is usually treated with topical anesthetics or systematic analgesia. The relief provided by the topical aesthetics is usually for short duration and it numb the taste buds that result it decreases the patient's desire to eat this will affect the overall wellbeing^[23].

Systematic analgesics are effective but don't target the localized pain.

A rinse composed of polyvinylpyrrolidone, hyaluronic acid, and glycyrrhetic acid has been found to be effective in controlling ulcer pain^[23].

For all HIV patients, a comprehensive periodontal and dental treatment should be done. Then an advice of routinely dental care checkups should be given.

The dentist should look for any oral manifestation of HIV, and the priority of the treatment should be to relieve the patient's pain.

The dentist should also give a proper oral hygiene recommendation, and advices regarding the use of tobacco, alcohols and some drugs^[23].

CONCLUSION

Dental checkups allow detecting any potential problems that may not even be aware of it. So, a dentist can be the first one to diagnose a life threatening disease.

Oral health is very important. It is a crucial aspect of maintaining general health. Oral tissues may reflect immune deficiency status. And nearly all HIV-infected individuals develop oral lesions at some time during their illness.

HIV patients are a part of the community, and avoid treating them is not ethical and will increase the problem.

The study was done after approval of ethical board of King Abdulaziz University.

REFERENCES

- 1- **Ajay R (2010):** Sivapathasundharm, Oral hairy leukoplakia: An exfoliative cytology study, *Contemp Clin Dent.*, 1(1): 10–13.
- 2- **Greenspan D, Greenspan J, Conant Met al.(1984):** Oral "hairy" leucoplakia in male homosexuals: evidence of association with both papillomavims and a herpes-group virus. *Lancet*, 2:831-4.
- 3- **Itin P, Ruffi T, Rudlinger Ret al.(1988):** Oral hairy leukoplakia in a HIV-negative renal transplant patient: a marker for immunosuppression? *Dermatologica*, 177:126-8.

- 4- **Syrjanen S, Laine P, Niemela Met al.(1989):** Oral hairy leukoplakia is not a specific sign of HIV-infection but related to immunosuppression in general. *J Oral Pathol Med.*, 18:28-31.
- 5- **Cathomas G(1990):**Oral hairy leukoplakia. *ActaDermVenereol.*, 70:362-3.
- 6- **Peacock M, Arce R, Cutler C(2017):** Periodontal and other oral manifestations of immunodeficiency diseases, *Oral Dis.*,23(7):866-888.
- 7- **Greenspan J, Greenspan D, Lennette E et al.(1985):** Replication of Epstein-Barr virus within the epithelial cells of oral "hairy" leukoplakia, an AIDS-associated lesion. *N Engl J Med.*, 313:1564-71.
- 8- **Thomas J, Felix D, Wray D et al.(1991):** Epstein-Barr virus gene expression and epithelial cell differentiation in oral hairy leukoplakia. *Am J Pathol.* , 139:1369-80.
- 9- **Green T, Greenspan J, Greenspan D et al.(1989):** Oral lesions mimicking hairy leukoplakia: a diagnostic dilemma. *Oral Surg Oral Med Oral Pathol.*, 67:422-6
- 10- **Gratama J, Oosterveer M, Zwaan F et al.(1988):**Eradication of Epstein-Barr virus by allogeneic bone marrow transplantation: implications for sites of viral latency. *ProcNatlAcadSci.*, 85:8693-6.
- 11- **Nokta M(2008):**Oral manifestations associated with HIV infection. *Curr HIV/AIDS Rep.* , 5:5-12.
- 12- **Eversole L, Jacobsen P, Stone CE et al.(1986):** Oral condylomaplanus (hairy leukoplakia) among homosexual men: a clinicopathologic study of thirty-six cases. *Oral Surg Oral Med Oral Pathol.* , 61:249-55.
- 13- **Schioldt M, Greenspan D, Daniels T et al.(1987):**Clinical and histologic spectrum of oral hairy leukoplakia. *Oral Surg Oral Med Oral Pathol.* , 64:716-20.
- 14- **Greenspan J, Greenspan D(1989):** Oral hairy leukoplakia: diagnosis and management.*Oral Surg Oral Med Oral Pathol.* , 67:396-403.
- 15- **Schofer H, Ochsendorf F, Helm E et al.(1987):** Treatment of oral 'hairy' leukoplakia in AIDS patients with vitamin A acid (topically) oracyclovir (systemically). *Dermatologica*, 174:150-1.
- 16- **Piperi E, Omlie J, Koutlas I et al.(2010):** Oral hairy leukoplakia inHIV-negative patients: report of 10 cases. *Int J SurgPathol.* ,18:177-83
- 17- **Frezzini C, Leao J, Porter S(2005):**ReviewCurrent trends of HIV disease of the mouth.*Oral Pathol Med.*, 34(9):513-31
- 18- **Ascher M, Sheppard H(1988):**AIDS as immune system activation: a model for pathogenesis.*ClinExpImmunol.* , 73(2):165-7.
- 19- **Hope VD, Judd A, Hickman M et al.(2005):**HIV prevalence among injecting drug users in England and Wales 1990 to 2003: evidence for increased transmission in recent years. *AIDS.*, 19(11):1207-14.
- 20- **Salmona M, Delarue S, Delaugerre C et al.(2014):**Clinical Evaluation of BioPlex 2200 HIV Ag-Ab, an Automated Screening Method Providing Discrete Detection of HIV-1 p24 Antigen, HIV-1 Antibody, and HIV-2 Antibody.*J ClinMicrobiol.*, 52(1):103-7
- 21- **Scully C, Greenspan J(2006):**Review Human immunodeficiency virus (HIV) transmission in dentistry. *J Dent Res.*, 85(9):794-800.
- 22- **Centers for Disease Control and Prevention(2016):** Summary of Infection Prevention Practices in Dental Settings: Basic Expectations for Safe Care. <https://www.cdc.gov/mmwr/preview/mmwrhtml/00023587.htm>
- 23- **Reznik D(2006):**Perspective Oral Manifestations of HIV Disease. *International AIDS Society-USA Topics in HIV Medicine*, 13(5): 143-146.