



Pediatric Oral Manifestations of HIV- A Case Report with Review

Authors

**Dr M. Chandrasekhar, Dr Marisetty Charitha, Dr Ayesha Thabusum,
Dr G. Chandrasekhar, Dr Naresh Naik**

Department of Oral Medicine and Radiology, Government Dental College and Hospital, Kadapa
Andhra Pradesh, India

Abstract

Oral Manifestations of immune suppression may take the form of opportunistic infection, and neoplasia. While this case has focused on gingival manifestations, these tissues cannot be evaluated in isolation. The presence of involvement of other oral tissues such as the cheek or tongue with manifestations associated with HIV such as hairy leukoplakia, Kaposi's sarcoma at these sites, and candidiasis in addition to periodontal manifestations may further increase the clinical suspicion of underlying immunosuppression and progression of the immunosuppressive state.

Keywords: Child, Acquired Immunodeficiency Syndrome, Oral manifestations.

Introduction

Acquired Immunodeficiency Syndrome (AIDS) is a systemic disease caused by the Human Immunodeficiency Virus (HIV), which affects the individual's immune system and makes him or her more susceptible to other diseases of systemic origin, such as oral lesions¹. First case of AIDS were reported in 1980s and its was heterosexual transmission has grown over time, affecting a large number of women of childbearing age and capable of transmitting HIV virus to their children². This vertical root of transmission, from mother to child is considered the main factor for the increasing prevalence of this disease in pediatric patients²⁻⁴ and it can occur during pregnancy, childbirth or through breastfeeding⁵⁻⁶. HIV infection currently affects more than 2 million children under the age of 15 years old worldwide and it is associated with numerous life-

long comorbidities for this population⁶⁻⁷. Immunosuppression leads to opportunistic infections, mainly that affect the oral cavity, such as oral candidiasis⁸ where as in pediatric HIV-positive patients this problem become more worse due to immature immune system that leads rapid disease progression²⁻⁶ Different types of oral lesions in HIV-infected pediatric patients such as: candidiasis⁸, gingivitis, oral hairy leukoplakia, Kaposi's sarcoma parotid enlargement and herpes simplex. HIV-infected patients have demonstrated an increased frequency and severity of atypical periodontal disease. These lesions have been termed HIV-associated gingivitis (HIV-G) and HIV-associated periodontitis (HIV-P). HIV-Gingivitis is characterized clinically by a mild but distinctive gingivitis with erythema of the free gingiva and punctate erythematous lesions of the attached gingiva and alveolar mucosa. HIV-P is

characterized by extreme pain, extension of periodontal defects past the attached gingiva into the mucosa with bone exposure, sequestration, and spontaneous bleeding. Such lesions have been characterized clinically and managed through various treatment regimens. Patients with human immunodeficiency virus (HIV) infection often suffer from persistent, painful ulcers that commonly occur on the soft palate, buccal mucosa, tonsillar area or tongue, which are referred to as aphthous ulcers. Patients suffering from the lesions may experience a decreased quality of life secondary to severe pain, dysphagia and weight loss. Although viruses (such as herpes simplex), bacteria and fungi have been implicated as possible causes, there is an evidence of infection is the primary cause of recurrent aphthous ulcers. The following case involves a patient who had the clinical characteristics of HIV-G aphthous ulcer in 10 year old female child.

Case Report

A 10-year-old female child who was diagnosed as HIV positive since 5 years came to the Department of Oral Medicine and Radiology with a chief complaint of bleeding from gums with minor stimuli since a period of one month and pain in inner surface of lower lip since 10 days. Her family history revealed that both parents and one sibling suffered with HIV – positive and passed away 4 years back. Physical examination of the oral cavity showed that generalized marginal erythematous gingiva and inflamed interdental papilla with profuse bleeding on probing and two small ulcers of size 0.25x0.25 cm on the labial mucosa of lower lip these ulcers are surrounded by erythematous halo ring, rest of the oral cavity is normal without any abnormality. Laboratory investigations of this patient revealed that the total CD4 cell count is 1212 cells/cumm. Based on the history and clinical findings it was provisionally diagnosed as HIV associated gingivitis and Aphthous ulcers of lower lip. (fig 1 and 2)



Figure 1 Inflamed interdental papilla



Figure 2 Aphthous ulcers

Discussion

Oral and perioral lesions are common in patients infected with human immunodeficiency virus (HIV), are often the presenting feature, and may predict deterioration in general health and a poor prognosis (Scully et al. 1991). HIV-infected patients have head and neck manifestations at some stage of disease (Rosenberg et al. 1989) and oral lesions are often early signs (Schiodt & Pendborg 1989, Winkler & Robertson 1992). A broad range of periodontal diseases has been reported in HIV-infected persons including both common and less conventional forms of gingivitis and periodontitis, bacterial, mycotic and viral infections, as well as neoplasms involving periodontium. Due to the varied periodontal manifestations it is possible to recognize this condition in the early stages. Distinctive form of periodontitis unique to HIV-infected individuals

has been described as a new entity characterized by a rapid onset, progression and destruction of both soft and hard tissue, in contrast to the common slowly progressing form of adult periodontitis (San Giacomo et al. 1990). Where as the first report indicating an association between HIV-infection and periodontal diseases was published in 1985 (Dennison et al. 1995). The periodontal diseases in HIV-seropositive patients include common as well as less conventional forms of gingivitis and periodontitis. An updated classification of EC-Clearhouse on HIV-related periodontal disease includes 3 conditions: (1) linear gingival erythema, (2) necrotizing ulcerative gingivitis (NUG) and (3) necrotizing ulcerative periodontitis (NUP). All 3 conditions are clinical diagnosis without any definitive criteria¹¹.

Conventional chronic gingivitis: This condition is characterized by red to bluish red, edematous gingival tissue usually with swollen interdental papillae and increased tendency to bleeding. Swango et al. (1991), showed significantly more bleeding sites and destruction of interdental papillae in HIV-seropositive patients with more than 400 CD4T-cell counts compared to those with counts of less than 400¹².

Chronic gingivitis with band shaped/ or punctate erythema: This condition is described as distinctive form of erythema of free gingiva, attached gingiva and alveolar mucosa. Two of the most prominent features of this condition are linear erythematous band involving the free gingival margins and punctate or diffuse erythema of the attached gingiva. The free gingiva tends to hemorrhage spontaneously, while the associated teeth usually have only light plaque formation. The strong resistance of this gingivitis to the usual local treatment measures is striking studies conducted by Barr et al. (1992) and Swango et al. (1991) revealed no correlation between immune suppression and this condition since equal numbers of cases had CD4T-cell counts above and below 400/mm (Schiodt & Pindborg 1987). The microbiological findings of HIV-associated

gingivitis are consistent with that of conventional periodontitis and different from that of conventional gingivitis that suggests a close relationship between this gingivitis form and periodontal break down (Murray et al. 1991)

Recurrent Aphthous Ulceration- Recurrent aphthous ulceration usually is limited to non-keratinized mucous membranes. The lesions begin as small raised papules on the mucosa with central blanching that creates a white appearance. They undergo a central necrosis to form a shallow ulcer approximately 2-10 mm in diameter. The ulcers show a central, slightly depressed grayish fibrin border and surrounding erythematous halo¹¹. Recurrent aphthous ulcers usually occur singly and resolve within 10-14 days. RAU appears to affect about 20% of the population, while the prevalence within a random population has been reported as being about 2%. RAU more frequently seen in immuno deficient children, particularly those with chronic granulomatous disease and severe combined immune deficiency disease. Oral aphthous ulcers in HIV are associated with a low CD4 count and increased inversion of the CD4+/CD8+ ratio¹². Oral ulceration in HIV have been traditionally divided as ulcerations, not otherwise specified (NOS) (group 2) and recurrent aphthous stomatitis (group 3). Aphthous ulcers in HIV are similar to those occurring in seronegative patients, presenting as minor (less than 5mm diameter), major (>10mm) and herpetic form (multiple ulcers of 1-3mm)¹³. The diagnostic criteria of major aphthous ulcers in HIV as set out by Phelan *et al*¹⁴ includes the following: large painful ulcers >1cm present for more than 10 days, a negative viral culture and no infectious aetiology; with improvement on topical tetracycline application and resolution with topical or systemic steroids.

Conclusion

Oral lesions are more frequently found in HIV infected children due to immature immune system. Hence a thorough, knowledge of various Oral manifestations which reciprocates the state of immunosuppression is very important for an oral

physician in order to provide proper symptomatic treatment and proper dosage of ART which can improve the overall symptoms and provide a better quality of life in children.

References

1. Tonelli SQ, Oliveira WF, Oliveira GA, Popoff DAV, Coelho MQ, Barbosa Júnior ES. Manifestações bucais em pacientes pediátricos infectados pelo HIV: uma revisão sistemática da literatura. *RFO* 2013; 18(3):365-372
2. Rosendo IA, Ferreira SMS, Pugliesi DM. Avaliação das condições bucais em crianças infectadas pelo HIV atendidas em um posto de assistência municipal de Maceió-AL. Estudo longitudinal. *Revista Semente* 2011; 6(6):53-61.
3. Ogunbosi, BO, Oladokun RE, Brown BJ, Osinusi KI. Prevalence and clinical pattern of paediatric HIV infection at the University College Hospital, Ibadan, Nigeria: a prospective cross-sectional study. *Ital J Pediatr* 2011; 37:29.
4. Glick M. Orofacial disorders in children with HIV disease. *Dent Clin N Am* 2005; 49(1):259-271.
5. Leao JC, Ribeiro CM, Carvalho AA, Frezzini C, Porter S. Oral complications of HIV disease. *Clinics (Sao Paulo)* 2009; 64(5):459-470.
6. Jose R, Chandra S, Puttabuddi JH, Vellappally S, Al Khuraif AA, Halawany HS, Abraham NB, Jacob V, Hashim M. Prevalence of oral and systemic manifestations in pediatric HIV cohorts with and without drug therapy. *Curr HIV Res* 2013; 11(6):498-505.
7. Domaneschi C, Massarente DB, de Freitas RS, Sousa Marques HH, Paula CR, Migliari DA, Antunes JL. Oral colonization by *Candida* species in AIDS pediatric patients. *Oral Dis* 2011; 17(4):393-398.
8. Konstantyner TC, Silva AM, Tanaka LF, Marques HH, Latorre MR. Factors associated with time free of oral candidiasis in children living with HIV/AIDS, São Paulo, Brazil. *Cad Saude Publica* 2013; 29(11):2197- 2207.
9. Greenspan, J. S., Barr, C. E., Sciubba, J. J. & Winkler, J. R. (1992) Oral manifestations of HIV infection, Definition, diagnostic criteria and principles of therapy. *Oral Surgery Oral Medicine Oral Pathology* 73,142–144.
10. Glick, M., Muzyka, B. C., Salkin, L. M. & Lurie, D. (1994) Necrotizing ulcerative periodontitis: a marker for immune deterioration and a predictor for the diagnosis of AIDS. *Journal of Periodontology* 65, 393–397.
11. MacPhail LA, Greenspan D, Feigal DW, Lennette 1. ET, Greenspan JS. Recurrent aphthous ulcers in association with HIV infection. *Oral Surg Oral Med Oral Pathol* 1991; 71: 678-83.
12. Miziara ID, Filho BCA, Weber R. AIDS and recurrent aphthous stomatitis. *Braz J Otorhinolaryngol* 2005; 71: 517-20.
13. Classification and diagnostic criteria for oral lesions in HIV infection. *J Oral Pathol Med* 1993; 22: 289-91.
14. Phelan JA, Eisig S, Freedman PD, Newsome N, Klein RS. Major aphthous-like ulcers in patients with AIDS. *Oral Surg Oral Med Oral Pathol* 1991; 71: 68-72.