

Idiopathic Ulcers as an Oral Manifestation in Pediatric Patients with AIDS: Multidisciplinary Management

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HIV infection is a major global health problem affecting developing and developed countries alike. HIV infection is associated with multiple oral lesions, some of which are of value in diagnosing the disease. The aim of this report is to describe the clinical manifestations and their multidisciplinary management, in a 6-year-old girl with AIDS. The findings of this case report indicate that, it is essential to be familiar with the early oral manifestations of AIDS in order to understand the patient's dental health needs, apply preventive methods, control caries, and understand the value of oral lesions as diagnostic markers of disease progression in children with HIV infection. A multidisciplinary management is fundamental.

Keywords: HIV/AIDS, pediatric patients, oral manifestations, atypical ulcers

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INTRODUCTION

Human immunodeficiency virus (HIV) infection is a major global health problem affecting developing and developed countries alike. The virus was first isolated in 1983 from a patient with lymphadenopathy, and a year later it was clearly shown that this virus was the causative agent of acquired immune deficiency syndrome (AIDS).¹ In late 2008, it was estimated that worldwide there were 33.4 million people living with HIV. The number was 20% more than the number published in 2000. The number of children under 15 living with the infection is estimated at 2.1 million (3.4% of the total).² In November 2010, the

National Center for Prevention and Control of HIV/AIDS (CENSIDA-México) had registered 144,127 cases of HIV/AIDS in Mexico, of which 3,353 were children under 15 years of age.³

The route of HIV transmission in children is predominantly vertical mother-child transmission. Routes of vertical transmission include: (a) transplacentally, during pregnancy; (b) as the infant passes through the birth canal during delivery; or (c) postnatally, during breastfeeding. Investigators, in designing preventive strategies, have enlisted recent advances in the understanding of this disease to identify risk factors in utero and during delivery.⁴⁻⁶

HIV infection is associated with multiple oral lesions, some of which are of diagnostic value. Oral manifestations associated with HIV infection in children and adults were initially classified according to their frequency by the Centers for Disease Control and Prevention and occur in approximately 10% of the population infected with HIV as a first sign of the disease.^{7,8} About 20%–50% of patients infected with HIV and up to 80% of people with an AIDS diagnosis present oral lesions during the course of the disease.^{8,9}

Candidiasis is the most common oral manifestation, causing increased morbidity in children with HIV, and it often represents the first clinical manifestation. The presence of other lesions is indicative of disease progression. Candidiasis, appearing in 72% of pediatric cases, occurs when the CD4 count is <400 cells/mL; regularly *Candida albicans* is the most common microorganism, although other species, such as *C. glabrata*, *parapsilosis* and *tropicalis*, have been identified. The clinical presentation includes pseudomembranous candidiasis, erythema, hyperplasia, and atrophy, frequently accompanied by angular cheilitis. Generally, bacterial infections take the form of unusual

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gingivitis. Characteristically, linear gingival erythema, which is a periodontal disease form, is often found in infected children, with a reported prevalence up to 48%. It is characterized by the appearance of erythematous, linear vestibular and interproximal gingival margins. Usually, these lesions do not respond to conventional oral hygiene measures.⁸⁻¹⁰

Aphthous ulcers, described in infected patients, are often very painful; their etiology is unknown, but it is possibly due to the immunosuppressed status of the patient and the causative virus. Also, these lesions occur as oral ulcers secondary to administration of the various antiretrovirals. It is essential to the differential diagnosis of ulcers caused by herpes simplex and syphilis.^{1,8}

The delayed eruption of primary teeth is related to the immunosuppression characteristic of the disease, along with other concurrent problems such as poor general health and especially when there is malnutrition. The high prevalence of dental caries in these patients is associated with xerostomia and ingestion of sucrose-based medicines (especially antibiotics, antifungals, and antiretroviral zidovudine).^{11,12}

In this context, the aim of this report is to describe the clinical manifestations and their multidisciplinary management in a 6-year-old girl with AIDS.

MULTIDISCIPLINARY MANAGEMENT

A 6-year-old girl was referred to our pediatric service hospital. According to her family background, she had a 39-year-old mother and a 41-year-old father with history of alcoholism and homosexual relationships. Both parents had been diagnosed with HIV in October 2006. The girl was a product of a second pregnancy, born by non complicated natural delivery, weighing 2,100 g, and she was breast-fed for 3 months.

The patient had come to our hospital referred from another pediatric center, diagnosed with community-acquired pneumonia accompanied by cough and fever. Intraorally, she presented with 2 x 1-cm oral lesions of approximately 7 months duration (Figure 1). The lesions



Figure 1. Oral ulcers (2 x 1 cm) located in hard palate surrounded by erythematous areas in maxillary right molar area.

were located in the maxillary right molar area and hard palate; they were erythematous and painful, causing sore throat, such as is seen in malnutrition grade III. Laboratory results were positive for HIV serology, with a viral load of 113,600. Antiretroviral treatment was started by the Infectious Diseases Service, consisted of zidovudine, lamivudine, and lopinavir/ritonavir.

Additionally, oral fungal infection was diagnosed, and she was treated with fluconazole. Showing good progress, she was discharged. Ten days later, she was readmitted with a diagnosis of probable herpetic esophageal candidiasis. When reevaluated by the Pediatric Dentistry Service, she presented 2 x 3-cm oral ulcers with a very painful erythematous halo with whitish edges, invading and covering the marginal gingiva of the maxillary right molar area and hard and soft palate. These lesions grew rapidly, doubling in size in a 2-week period (Figure 2). Patient also presented multiple advanced carious lesions (Figure 3), periodontal disease (Figure 4), and other ulcers (Figure 5). The Parasitology Service suggested a diagnosis of actinomycosis and recommended treatment with Amphotericin-B.

Complete dental rehabilitation was planned, which included oral hygiene instruction and decreased carbohydrate intake. Treatment was to start as soon as oral conditions improved. After maxillofacial surgical consultation, it was decided to biopsy the lesion. The surgical procedure included complete debridement of necrotic tissue and taking a sample of the lesion for laboratory examination; the latter reported the presence of necrotic tissue, inflammation, and growth of streptococci. Into the surgical site a bed of gelfoam was placed (Figure 6). The surgical procedure had a successful outcome, and the palatal ulcers started to form scar tissue.



Figure 2. Whitish oral ulcers (2 x 3 cm), with erythematous edges invade gingival margin, covering the maxillary right molar area and hard and soft palate.



Figure 3. Multiple and advanced caries.



Figure 5. Whitish ulcer located on lower lip, with erythematous edges and painful to manipulation.



Figure 4. Periodontal disease with spontaneous bleeding.



Figure 6. Surgical tissue debridement and placement of gelfoam.

After 2 weeks, the patient presented new ulcers on the dorsum and lateral border of the tongue. These were treated with propolis and honey solution applied four times daily directly to the lesion, after food intake and oral hygiene. Remission of ulcers was observed after 5 days (Figure 7). Now the dental rehabilitation could begin, which included

extractions, composite restorations, pit and fissure sealants, although space maintainers were not placed (Figure 8). Control appointments were scheduled every 15 days to observe development of the lesions and eruption of succeda-



Figure 7. Ulcers on the dorsum and lateral border of the tongue (left), and their remission (right).

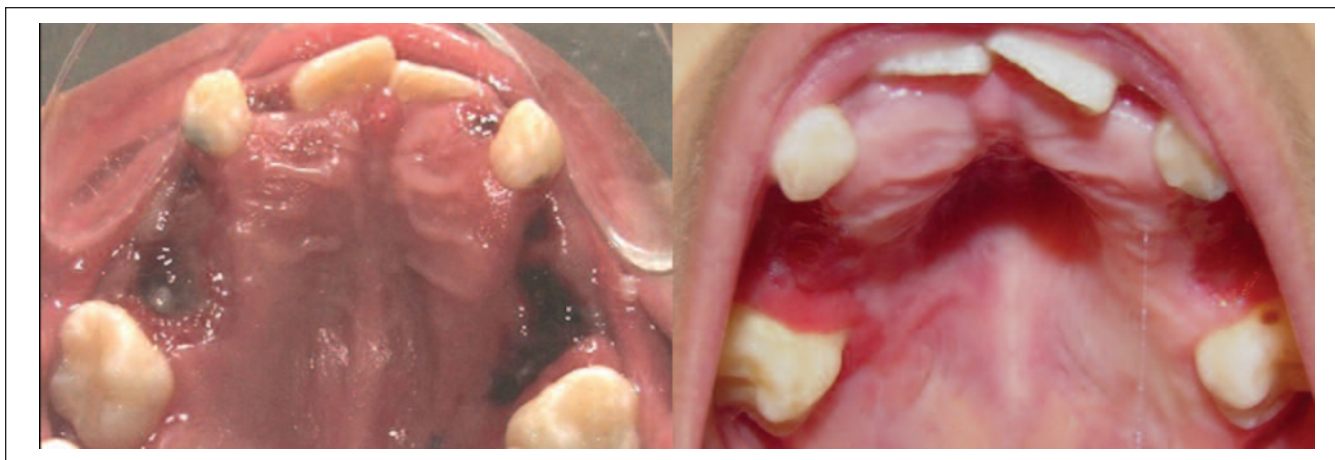


Figure 8. Extraction of teeth with extensive carious lesions. Immediate postoperative (left); healing of tissues 5 days postoperatively (right).

neous teeth. Subsequent placement of space maintainers is planned once the patient's oral hygiene improves.

DISCUSSION

There are several factors that facilitate the development of oral manifestations in patients infected with HIV, such as a CD4 count below 200 cells/mm,³ viral load greater than 10,000 copies/ml, and other local factors such as xerostomia, poor oral hygiene, and tobacco consumption.^{7,13} The oral lesions are important for their diagnostic value as indicators of infection and predictors of progression from HIV infection to AIDS. The literature has reported more than 40 diseases of the oral cavity in HIV patients; however, the World Health Organization (WHO) has identified and assessed 10 key lesions: oral candidiasis, hairy leukoplakia, Kaposi's sarcoma, linear gingival erythema, necrotizing ulcerative gingivitis, necrotizing ulcerative periodontitis, non-Hodgkins lymphoma, human papilloma virus, intraoral ulcers (mainly recurrent herpes simplex virus), and melanin pigmentation.^{9,13-15} Furthermore, oral manifestations in patients with HIV and AIDS are divided into fungal, bacterial, viral, and neoplastic lesions; lesions of unknown etiology, a condition in salivary glands, and dental manifestations. Within the group of lesions of unknown etiology are idiopathic ulcers known to be associated with AIDS.^{8,16,17} Of the 10 lesions identified by WHO, our patient presented four of them (oral candidiasis, linear gingival erythema, necrotizing ulcerative periodontitis, and hyperpigmentation melanin); in addition to these lesions, she had idiopathic ulcers, gingivitis, caries, necrotizing stomatitis, xerostomia, hypohidrotic lips, linear marginal erythema, and delayed healing of oral lesions.

Children with AIDS exhibit an altered state of dental health, which greatly affects their quality of life. HIV-infected children exhibit a higher prevalence of dental caries, candidiasis, leukoplakia, herpetic lesions, lymphadenopathy, and parotitis, compared with children who do not have the disease.¹⁸ Tooth brushing, chewing, and swallowing have frequently been associated with discomfort. It is important to mention that malnutrition is an indicator for

predicting survival of pediatric patients with HIV/AIDS, in spite of their lymphocyte count.

With the advent of anti-retroviral drugs, there has been evidence of the therapeutic effectiveness of these drugs, which improve immune function and therefore decrease opportunistic infections, morbidity, and mortality of the disease, so consequently have decreased the prevalence and severity of oral manifestations in HIV-infected adult patients. New combination antiretroviral therapies and comprehensive management of these patients have changed the natural history of the disease, reducing opportunistic infections and prolonging survival. These drugs act on various points in the lifecycle of the virus, and they are administered with the aim of reducing the virus to restore immunity.¹⁹⁻²⁵ However, few reports of the effect of antiretroviral drugs on oral diseases in pediatric AIDS patients exist.²⁶⁻²⁸

There are some studies in the literature that report on oral manifestations in children. Oral candidiasis is the most frequent lesion reported. Gaitan-Cepeda *et al* reported a prevalence of 30.6% for oral lesions in HIV/AIDS children. Oral candidiasis was the most prevalent oral lesion, which was associated with a high viral load.²² Ranganathan *et al* reported oral lesions in 132 of 212 pediatric patients ranging in number from one to three lesions. Oral candidiasis was the most prevalent (56.1%); other oral manifestations included gingivitis, oral pigmentation, depapillation of the tongue, ulcers, and oral hairy leukoplakia.²⁹ Domaneschi *et al* reported a prevalence of oral colonization by *Candida* of 62%. And the absence of antiretroviral therapy increased the probability of *Candida* isolation.¹⁰ In a Mexican population, Ramirez-Amador *et al* reported that oral lesions were present in 65% to 75% of HIV patients. Hairy leukoplakia, erythematous and pseudomembranous candidiasis, angular cheilitis, and oral ulcers were frequently found.^{30,31} In the present case, the diagnosis of oral lesions was difficult, but it was confirmed by the clinical characteristics of the lesions, biopsy, and culturing of bacteria, fungi, and viruses. Diagnosis is not always easy to carry out, but it is essential for providing the patient the correct treatment. A multidisciplinary management as presented here is fundamental.

Oral manifestations of HIV infection are important because they affect the patient's quality of life, and therefore demand early recognition so that appropriate therapy can be inaugurated. Eldridge *et al.* conducted a study in which 63% of patients had high rates of untreated caries with poor prognosis. Unfortunately, some parents do not consider dental health a priority. For this reason, children infected with HIV should be considered a high caries risk group and should receive proper dental care in terms of prevention.³² Attention to the problem of dental caries should be directed to the establishment of an education system, preventive plaque control, and application of protective substances such as fluorides and sealants.

CONCLUSIONS

Based on the findings of the present case report, it is essential to know the early oral manifestations of AIDS in children so that their dental health needs can be addressed in a timely manner. These include application of preventive methods and control of carious lesions, as well as realizing the value of oral lesions as markers of diagnosis and disease progression in these children. Also, it is necessary to implement an oral care program in HIV patients that includes preventive strategies against oral opportunistic infections and implementation of hygiene habits. The adequate management of oral lesions is vital to improve the quality of life of the infected children.

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