Acute Herpetic Gingivostomatitis Associated with Herpes Simplex Virus 2: Report of a Case

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Abstract:
Herpetic gingivostomatitis represents the most commonly observed clinical manifestation of primary herpes simplex virus (HSV) infection. HSV-1 has been associated with oro-labial disease, with most infections occurring during childhood, and HSV-2 with genital disease. However, it is possible for HSV-2 to cause oro-labial herpes and HSV-1 to cause genital herpes. An unusual case of acute herpetic gingivostomatitis (AHGS) that presented as extremely painful multiple ulcerations of the gingiva and hard palate in a 32-year-old male patient is presented. The association of HSV-2 in the etiology of oral lesions is highlighted. The clinical presentation, course, differential diagnosis and management of AHGS are discussed.

Key Words: Acyclovir, gingivostomatitis, herpes simplex virus, HSV-2, oral lesions

Introduction
Acute herpetic gingivostomatitis (AHGS) is a primary infection caused by herpes simplex virus-1 (HSV-1 in >90% of the cases) or HSV-2. Primary human HSV-1 infection usually occurs in childhood and mostly presents as herpetic gingivostomatitis. It is usually subclinical in early childhood and only a small percentage of patients develop an acute primary infection. This usually occurs in older children and consists of fever, malaise, headache, cervical lymphadenopathy and a vesiculo-ulcerative eruption on the peri-oral skin, vermilion or any intra-oral mucosal surface.¹ It has been estimated that up to 90% of the population worldwide is seropositive by the age of 40 years, and around 40% of individuals harboring the virus are affected by recurrent infections.² A similar clinical manifestation may be caused by HSV-2, the serotype most often associated with genital herpes. Although HSV-2 is primarily responsible for most genital and cutaneous lower body herpetic lesions, it can also be the cause of primary herpetic gingivostomatitis. The orogenital contact may allow either serotype to cause oral or genital lesions. The two forms of HSV have a similar structure but differ in antigenicity, and HSV-2 is reputed to be of greater virulence.³

Acute herpetic gingivostomatitis is characterized by a sudden onset, and the severity of symptoms is related to the virulence of the HSV and the host's immune response. Symptoms such as cervical lymphadenopathy, malaise and low grade fever, can occur in the absence of any discrete clinical lesions. The general course of the infection is 10-14 days, which is usually preceded by an incubation period of up to 26 days.⁴,⁵

A case of AHGS associated with HSV-2 is presented. The unusual occurrence of HSV-2 in the oral cavity is highlighted.

Case Report
A 32-year-old male reported to the Pushpagiri College of Dental Sciences, Kerala, India complaining of severe pain of the gums. The excruciating and incapacitating nature of pain was an erythematous halo surrounding the lesion (Figure 1). There was bleeding on probing without any periodontal pockets. Radiographs revealed marginal alveolar bone loss. Palatal aspect of maxillary right premolars had irregular ulcers measuring less than a centimeter in diameter resembling a bunch of grapes (Figure 2). Patient complained of pain in the maxillary right buccal and palatal areas also (Figure 3). Based on the history and clinical presentation a provisional diagnosis of herpes viral infection was made.

A hematologic examination was carried out, and investigations for hepatitis B and HIV were done. Swabs were collected from the site and bacterial and viral culture tests were carried out. An incisal biopsy of the lesion was also done from the interdental papilla distal to 27. All these investigations did not yield any significant finding or result. Patient was then sent for serum IgG and IgM antibody testing for HSV-1 and 2. The observed serum value for HSV-2 IgM antibody by enzyme-linked immunosorbent assay (ELISA) was 1.7 and serum value for HSV-2 IgG antibody was 1.15. Results
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indicate that the patient was reactive to HSV-2 (A reference range > 1.1 is reactive). The observed serum value for HSV-1 IgM antibody by ELISA was 0.14 and serum value for HSV-1 IgG antibody was 0.17 indicating that the patient was not reactive to HSV-1. The diagnosis was confirmed as herpetic gingivostomatitis associated with HSV-2.

Dermatologic consultation ruled out the presence of any genital or extraoral lesions. Systemic antiviral therapy was initiated with acyclovir 400 mg thrice daily for 3 weeks. Supportive therapy such as beta dine mouth wash and oral analgesics were given. The lesions resolved after 4 weeks of antiviral therapy (Figures 4-6).

Figure 1: Ulcerated area (yellowish white slough) on left maxillary buccal gingiva.

Figure 2: Lesions on the right buccal gingiva.

Figure 3: Irregular ulcers on the palate.

Figure 4: Clinical appearance after anti-viral therapy-complete resolution of ulcerations on left buccal gingiva.

Figure 5: Clinical appearance after anti-viral therapy-complete resolution of ulcerations on right buccal gingiva.

Figure 6: Clinical appearance after anti-viral therapy-complete resolution of ulcerations on palatal aspect.
Discussion

Two of the known herpesviridae, HSV-1 and HSV-2 are responsible for primary and recurrent mucocutaneous herpetic infections. The HSV is a double-stranded DNA virus of which the HSV-1 type is responsible for oral, facial and ocular infections including primary herpetic gingivostomatitis. HSV-2 accounts for most genital and cutaneous lower body herpetic lesions. Orogenital contact may allow either serotype to cause oral or genital lesions. Even though herpetic gingivostomatitis is primarily an HSV-1 infection isolated cases of HSV-2 association have been reported in older patients, probably transmitted sexually and causing genital infection. Oral infection with HSV-2 is also an unusual complication of long-term immunosuppression, such as those for cicatricial pemphigoid.9 Oral HSV-2 infection has also been reported in HIV-negative and HSV-2-seropositive gay men.9

Herpetic infection, both acute and recurrent, is a self-limiting disease with a healing period of 1 to 2 weeks. Complications are rare and include keratoconjunctivitis, esophagitis, pneumonia, meningitis and encephalitis.10 The most common mode of transmission of HSV is the saliva of the carriers. Infection on the hands of health care personnel from patients shedding HSV may result in herpetic whitlow. Transmission of HSV-2 is usually by sexual contact. Both types 1 and 2 may be transmitted to various sites by oral-genital, oral-anal or anal-genital contact.10,11 Primary infection occurs in childhood from infected saliva or herpetic lesions. Reactivation can occur at any time and may be triggered by immunosuppression, stress, trauma, ultraviolet irradiation, or fever. Recurrences are generally less severe than the primary infection and severity and frequency tend to diminish with time.12

The diagnosis of AHG is usually made by clinical presentation and history. In the present case, the typical grape-like cluster appearance of ulcers on the palate, surrounded by erythema and extreme tenderness was conclusive for the diagnosis of a herpes simplex infection. The diagnosis can be confirmed via laboratory tests: Serological assays (anti-HSV IgM and IgG), Tzanck test and immunofluorescence, but the culture of laboratory tests: Serological assays (anti-HSV IgM and IgG), herpes simplex virus 2 is presented. The clinical presentation, differential diagnosis and management of acute herpetic gingivostomatitis is discussed.

References

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