Special Report

Herpetic whitlow

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This paper describes a case of transmission of herpetic whitlow to the index finger of a dental student from a patient with herpes simplex virus. The recognition of intraoral viral infections in patients is important because these viruses have serious implications for health care providers. Rubber gloves must be worn when patients with primary or secondary herpetic lesions are treated. Asymptomatic permanent herpes virus carriers must also be treated with appropriate precautions.

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Introduction

The human body is the only natural host for the herpes virus.12 Herpes virus infections are acquired by contact with infected secretions, such as saliva or the exudate from active lesions, or from individuals shedding virus in secretions in the absence of clinical lesions.3 The herpes viruses include herpes simplex virus I, herpes simplex virus II, varicella-zoster virus, Epstein-Barr virus, and cytomegalovirus.4 Antibodies to herpes simplex virus (HSV) may be found in most people in the blood serum. Humans may carry the virus without clinical signs of disease.56 The virus, between the primary and secondary attacks of herpes, is located in the gasserian ganglion. The virus may descend to the lip through the trigeminal nerve, which might explain why the location of the blister on the lip is usually the same.16

Oral primary infection with HSV, if symptomatic, most often presents as herpetic gingivostomatitis. The disease may range from mild to severe.54 Oral lesions initially appear as vesicles; then they ulcerate and develop through the oral cavity. The lesions frequently occur in buccal mucosa, tongue, gingival tissues, hard and soft palates, and paratonsillar pillars.7 Lesions may extend extraorally and are readily spread via contact with virus-containing saliva. Herpes labialis is usually a mild disease that presents as a single lesion or cluster of lesions adjacent to the vermilion borders of the lips.38

Herpes simplex infection of the fingers is a danger for medical, dental, and nursing personnel. Dentists, who come in frequent contact with oral secretions and lesions, are at the most risk for contracting herpetic whitlow.1 Herpes simplex virus I is the usual cause of herpetic whitlow in health care providers, whereas HSV II is the more frequent cause of finger infections in the general population.34

Lesions occur most often in the distal phalanx of the index finger and are often found around the fingernail, where breaks in the epithelial integrity allow the virus to gain access to underlying basal cells. If the lesions extend under the nail, intense pain develops.13 The incidence of the recurrence of herpetic whitlow has not been established, but there will be loss of sensation in the affected finger.3

Case report

A 20-year-old dental student had a complaint of a painless lesion in her index finger. Seven days previously the student had a microtrauma caused by an amalgam matrix when she was restoring a tooth. She did not take proper precautions and just washed her hands with an ordinary soap. After 1 day she presented with itching, swelling, and pain in her index finger. The lesion was localized on distal phalanx (Fig 1), but she demonstrated axillary lymphadenopathy. She was prescribed clindamycin, to be taken four times daily for 5 days. After 5 days there was no sign of healing...

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Herpetic whitlow on the right index finger.

and vesicles were seen in her finger. Her medical history revealed that she had a herpes zoster virus infection 4 years previously. The lesion was diagnosed as herpetic whitlow and the patient was told to take acyclovir (200-mg tablets four times daily for 5 days). The vesicles ruptured, became dry, and crusted. In 2 weeks they had resolved, and the patient's subjective complaints also disappeared.

Discussion

Epidemiologic studies have estimated that 80% to 90% of the population has antibodies to HSV I. Nevertheless, only a portion of infected individuals develop disease in the form of herpetic stomatitis. In many people, the infection is therefore latent or subclinical. About 40% of those who have primary infection manifest a clinical reaction to the virus, characterized by herpes labialis. Between attacks, HSV I lies latent in the trigeminal ganglion. Reactivation is triggered by numerous factors, ranging from trauma to sunlight to emotional stress. Herpes simplex viral infection of the finger is most frequently found in health care providers, especially those who come in contact with oral secretions. Herpes simplex infections of the dentist's fingers can result from treating patients with recurrent herpes lesions of the lips or from treating patients who have herpes simplex virus latently or subclinically in their oral secretions. The virus enters a break in the skin caused by trauma and causes a localized infection.

In this case, the patient probably came in contact with the herpes simplex virus during the treatment of a dental patient who was asymptomatically shedding the virus in his or her oral secretions. The dental student therefore did not feel the need to take any precautions. The lesion in this patient was located on the distal phalanx of the index finger, as reported in the literature.

The prevalence of herpes simplex viruses makes it impossible to completely avoid this disease. Special care must be taken when patients with herpes simplex infection are examined, because virus is present in saliva and on the lips and can easily be transmitted to other sites. For dental staff, infection can spread into the subcutaneous tissue of the hands through minimal skin abrasions.

A thorough medical history must be obtained from the patient, and if any herpes virus infection occurred in the past, the dental staff should take precautions. Even in the absence of symptoms, the patient will have the herpes virus in his or her oral secretions. Each infected individual who is intermittently infectious serves as a permanent carrier of the virus.

Dentists must use protective barriers such as gloves, masks, and eyewear when treating all dental patients to prevent transmission of virus from the oral cavity of a patient to the practitioner's hand or mucous membranes of the oral cavity, nose, or eyes. Transfer of herpes simplex virus may be direct or through contact with contaminated materials or surfaces. The dental professional is at risk, and infection occasionally occurs on the hand or finger. Rubber gloves must be worn when patients present with a primary or secondary herpetic lesion. The ability of a dentist with herpetic whitlow to treat patients is limited not only by pain but also by the risk of spread of infection to other patients.

References