Recurrent Herpetic Infection of the Oral Floor
— A Case Report —

TADAMITSU KAMEYAMA, YUMIKO NAGAO, JINGO KUSUKAWA, SHINICHIRO TERASAKI AND TAKASHI FUJIMASA

Department of Oral Surgery, Kurume University School of Medicine, Kurume 830, Japan

Received for publication September 12, 1995

Summary: Recurrent herpetic infection on the mobile mucosa such as the oral floor, has not been reported previously. A case of recurrent herpetic infection of the oral floor in a 52-year-old man is presented. This case illustrates the fact that recurrent herpetic lesions can occur anywhere in the intra-oral mucosa.

Key words: herpes simplex virus type-1 — recurrent — herpetic infection — oral floor — mobile mucosa — aphtha

Introduction

Reports of recurrent herpetic infections of the mobile oral mucosa are very few (Kameyama et al. 1995; Fujimasa, 1996). Recently we reported two cases of recurrent herpetic infections of the tongue, which is mobile mucosa. Also Fujimasa (1996) reported many cases of recurrent herpetic infections of the oral mucosa and described five cases of infection of the tongue. However, no case of recurrent herpetic infection of the oral floor has been reported previously. We present here a case of recurrent herpetic infection of the oral floor in a 52-year-old man.

Case Report

A 52-year-old man was referred to our clinic in April 1995, with contact pain on the left oral floor. Examination revealed two small aphthous erosions covered with a gray pseudomembrane on the anterior side of the oral floor. The lesion had an erythematous halo around the erosion. The two aphthous erosions were 2 mm and 1 mm in diameter, respectively (Fig. 1).

Soreness was noted at these erosion. No erosion or ulcer was identified on other parts of the oral mucosa, and the edges of denture had no contact with the lesion. The patient stated that he had a tingling pain in the anterior region of the left oral

Fig. 1. Two aphthous lesions (arrow) on the left oral floor.
floor few days before and subsequently observed a circular erosion at this site.

One day previous to the visit, the erosions developed two lesions. The patient stated that he had a history of herpes-labialis, but no history of intraoral recurrent aphtha. After a diagnosis of localized herpetic infection, a steroid drug was topically applied to the erosions, and a gargle was prescribed. Although the patient was to be observed again, he did not appear at our clinic again.

Materials and method for virological study

A specimen was obtained by wiping the erosions on the oral floor with a sterile periostial elevator on the first day. The specimen was suspended in 2ml phosphate buffered saline (PBS) supplemented with 4% bovine serum and stored at 4°C until used for virus isolation. On the same day, serum was also obtained in order to test for the presence of herpes simplex virus (HSV)-1 antibody.

Cells

GMK cells (African green monkey kidney cells) cultured in Eagle’s minimum essential medium (MEM) supplemented with 10% bovine serum were used for the isolation and assay of virus and for antibody titration.

Isolation of virus

The specimen was centrifuged at 3,000 rpm for 10 min. One milliliter of supernatant was inoculated onto the GMK cells, and incubated at room temperature in a stationary rack for 2 hs.

After washing twice with Hank’s balanced salt solution, fresh MEM supplemented with 2% bovine serum was added after the inoculum was removed. The culture was incubated at 37°C and checked for cytopathic effect (CPE) daily for 1 week. CPE characteristic of HSV was observed, and the culture was frozen. The isolated virus was again cultured in GMK cells, and stored at -80°C.

HSV-type specificity

The sample showing CPE was identified as HSV-1 or 2 type by using a neutralization assay with guinea-pig antisera specific for HSV-1 and 2. Ten-fold serially-diluted virus samples were mixed with equal volumes (0.5 ml) of HSV-1 (at a dilution of 1:25) or HSV-2 (1:70) specific antisera. After 1h incubation at 37°C, the mixture was plated onto GMK cells for the identification of type specificity.

Titration of serum antibody

Serum from the patient was examined for HSV-1 neutralizing antibody titer using a plaque assay. Heat-inactivated (56°C, 30 min) serum was serially diluted from 1:10 to 1:640. An amount of 0.5ml of diluted serum was mixed with an equal volume of virus suspension (HSV-1 strain YH) containing 1,000 PFU/ml. After 1 hour of incubation at 37°C, 0.2ml of the mixture was inoculated onto GMK monolayers for plaque assay. After 4 days of incubation at 37°C, the cells were stained with crystal violet, and plaques were counted. The highest dilution of serum that reduced plaque formation by 50% was taken to be the neutralizing antibody titer (Elion et al. 1977).

Results

The virus isolated from patient was
completely neutralized with HSV-1 specific antiserum, but not with HSV-2 specific antiserum. Thus, the isolate was identified as HSV-1. The neutralizing antibody titer in the patient was 680. Based on these results, this case was diagnosed as a recurrent herpetic infection of the oral floor.

Discussion

Recurrent herpetic infections of the oral mucosa were first reported by Griffin in 1985. Since then, Weathers and Griffin (1970), Southam (1980) and Kameyama et al. (1987) have also reported cases of intra-oral herpetic infection. In each of these cases, the site of infection was either the gingiva or the hard palate, both of which are fixed mucosa.

However, recently Kameyama et al. (1995) and Fujimasa (1996) reported recurrent herpetic infection on the tongue. Due to the rarity of HSV infection of the mobile oral mucosa, local development of the lesion on the fixed oral mucosa has been considered to be a definitive characteristic of intraoral recurrent HSV infection. However, since the stimulation of nerve terminals has experimentally been proven to produce the reactivation of HSV (Openshaw et al. 1979), there seems to be no basis for the belief that a recurrent herpetic lesion is only localized to the intraoral fixed mucosa. In fact, we recently reported two cases of recurrent herpetic infection of the tongue and now presented a case of recurrent herpetic infection of the oral floor, both of which are mobile mucosa.

From these facts, we need to recognize that recurrent herpetic lesions can occur anywhere in the intraoral mucosa. It is important not only for diagnosis of intraoral mucosal diseases, but also from the view point of infection.

References


