

## Multiple recurrences of HSV-1 on right lower buttock

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### ABSTRACT

Herpes simplex virus type 1 (HSV-1) is a common localized viral infection that affects many individuals in the general population. HSV-1 infection most commonly presents on the face and lips. In contrast, HSV-2 most commonly appears in a boxer distribution in the anogenital region, which can include the buttocks. We report a healthy 28-year-old Asian woman with multiple reoccurrences of grouped vesicles with an erythematous base on her right inferior medial buttock. On viral serologic testing, the etiological agent was HSV-1, not HSV-2. This case highlights the presentation of HSV-1, not HSV-2, in this location.

**Keywords:** HSV-1, HSV-2, buttock, recurrent infection

### INTRODUCTION

There are two types of *Herpes simplex virus*, *Herpes simplex* type 1 (HSV-1) and *Herpes simplex* virus type 2 (HSV-2), both of which infect and remain latent in sensory ganglia.<sup>1</sup> Initially, the patterns of clinical presentation for both viruses are similar and indistinguishable. Both HSV types present as grouped vesicles with an erythematous base and an umbilication of the center. In their course, the vesicles usually re-epithelialize and heal with crusting. Transmission and common locations of clinical presentation vary between the two types.<sup>2</sup> HSV-1, a common virus associated with cold sores, typically presents in the oral areas, including the lips.<sup>3</sup> HSV-1 frequently occurs in childhood and is transmitted via respiratory secretions and saliva. HSV-2, commonly referred to as genital herpes, has a high incidence of infection in the genital areas.<sup>4</sup> Transmission of HSV-2 occurs perinatally and through sexual contact.

Reoccurrence of HSV-1 is more common than HSV-2 reoccurrence, and the most frequent reoccurrence of HSV-1 is in the oral-facial region.<sup>5,6</sup> Physical or psychological factors, such as stress, can cause reoccurrence of HSV infections. These infections are more likely to reoccur in the same location as the primary site of infection. However, auto-inoculation of HSV can occur on any location on the skin.<sup>7</sup> A study of HSV distribution of 4437 typed isolates showed that 71% of isolates in the anogenital region, including the buttocks, were of HSV-2 virus, and 29% were of HSV-1 virus.<sup>8</sup> The distribution of HSV-1 in the buttock region is uncommon. Here, we present a case of HSV-1 infection in the right inferior medial buttock.

### CASE

A 28-year-old, Asian woman who immigrated to the United States at the age of ten presented with a case of HSV-1 infection. At the age of 11, she experienced high fever which manifested as blisters on the lips and on the right inferior medial buttock. She denies sexual trauma or abuse. She tested positive for HSV-1 IgG on serology but negative for HSV-2 IgG. Over the years, she continued to have

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**Figure 1A and B.** A 28-year-old, Asian woman with a recurrent HSV-1 infection in the right inferior medial buttock showing two grouped vesicles with an erythematous base. The patient gave permission for the use of Figures 1 and 2.

recurrence of the blisters on the lips and buttock. Her lip blisters occur 2 or 3 times per year and can be treated with rest, hydration, and 10% decanol topically. The blisters on the buttock appear in times of extensive stress, including immigration and new jobs. Since the first breakout at the age of 11, she has had similar blisters of lesser severity at ages 17 and 25. Each occurrence resolved with rest within a week. The blisters on the lips and buttock never occurred concurrently other than the first time at the age of 11. Her current reactivation consists of blisters that were painful, non-pruritic vesicles with an erythematous base closely grouped in two clusters (Figure 1A and B). The first cluster of vesicles is 1 cm in diameter, and the second cluster measures 1.5 cm (Figure 2A and 2B). The patient reported resolution of the symptoms within a week with docosanol ointment and rest.

## DISCUSSION

HSV-1 and HSV-2 share similar clinical presentations, but the pattern of distribution for each type of virus is unique. HSV-1 typically presents in children/adolescents as grouped vesicles with an



**Figure 2A and B.** Recurrent HSV-1 infection in the right inferior medial buttock with (A) grouped vesicles measuring 1 cm in diameter and (B) grouped vesicles measuring 1.5 cm.

erythematous base above the waist, while HSV-2 usually follows a boxer distribution in the genital region. Recurrent vesicular eruptions similar to the ones presented on this patient's buttock have been frequently misdiagnosed as *Herpes zoster* virus because the vesicles appear in a dermatomal "zosteriform" pattern. However, literature reports indicate that the vesicles in the genital region are due to HSV-2 and not *Herpes zoster* virus.<sup>8</sup> The importance of this case report is the development of HSV-1 in the buttock location. One hypothesis is that the patient's multiple recurrences of HSV-1 infection in that region developed due to auto-inoculation of the virus at the age of 11. Medical literature suggests several reasons for occurrences of HSV-1, including stress and immunosuppression. In our case, multiple recurrences of HSV-1 were precipitated by major personal stressors. *In vivo* studies have shown that a patient's own strain of HSV can cause reactivation at another site.<sup>9</sup> Therefore, our patient could have transmitted the viral particles from the oral cavity to the buttock through direct inoculation from her fingertips. Although it is unclear whether or not the patient's HSV-1 in the buttock was primary or secondary infection, this case highlights that HSV-1 can occur in this atypical location.

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