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CASE REPORT

A Case of Inconspicuous Recurrent Herpes Labialis Mimicking Unilateral Angular Cheilitis

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ABSTRACT

Recurrent herpes labialis (RHL) is a common manifestation of herpes simplex virus (HSV) reactivation in immunocompetent individuals, whereas angular cheilitis is an inflammatory lesion occurring on one or both lip commissures and is induced by local and/or systemic conditions. We describe a case of RHL eruption on the corner of the mouth, easily mistaken as angular cheilitis. **Case Report:** A 21-year-old male presented to our dental hospital with a 3 day history of a painful, unilateral lesion on the left corner of his mouth. The lesion featured an erythematous base with a yellowish crust that extended outward. We diagnosed the lesion as RHL. We prescribed chlorhexidine solution and topical acyclovir to be applied onto the lesion. At 2 weeks follow-up, the lesion was resolved. An RHL lesion that erupts on the corner of the mouth may initially resemble angular cheilitis. However, the typical clinical presentation, history of recurrence, and the absence of predisposing factors for other lesions suggested an infection caused by HSV. **Conclusion:** RHL which occurred at one side of the mouth corner can be similar with unilateral AC. But, detailed history taking and clinical observation led to correct diagnosis and management.

Key words: cheilitis; diagnosis; herpes simplex virus; herpes labialis

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INTRODUCTION

Herpes simplex virus (HSV) is a common infectious agent that affects the mucocutaneous surface. The virus has two types: generally, type 1 causes soft tissue lesions on the oral cavity and type 2 causes lesions on genitalia, although cross-infection has been observed. Viral infections usually occur in early childhood, are mostly subclinical, or show prodromal symptoms. In most patients, oral HSV requires only palliative and supportive treatment. When diagnosing HSV infections, laboratory testing may not be required as diagnosis can often be made on the basis of clinical history and the presence, or absence, of signs and symptoms.¹⁻⁴ When reactivated, the virus can appear as a soft tissue lesion affecting the border of lip and facial skin, termed as recurrent herpes labialis (RHL). This lesion can cause discomfort and pain.^{5,6}

Angular cheilitis (AC) is an inflammatory lesion that typically manifests on the corner of the lip at

the vermillion, on adjacent mucosa, and one or both lip commissures. Patients may complain of pain or soreness, burning, and pruritus. Other names for AC include *angular cheilosis*, *commissural cheilitis*, *angular stomatitis*, or *perleche*.⁷ AC is a common oral lesion and can be induced by factors such as local irritants, allergens, or infectious pathogens, as well as systemic conditions like nutritional deficiencies, systemic diseases, or as a side effect of certain drugs.^{7,8} Around 25% of AC cases are caused by iron and vitamin B deficiencies.⁹ *Candida* is often isolated from AC lesions; thus, some AC is considered as candida infection-associated lesion.¹⁰

Inflammatory lesions like AC can resemble herpes labialis or UV radiation-induced actinic cheilitis.⁹ Coincidentally, if a herpes labialis lesion occurred on the corner of the mouth, it may resemble AC. Here, we reporting a case of RHL exhibited by a 21-year-old male that mimicked AC and was successfully treated with a topical acyclovir-containing cream.

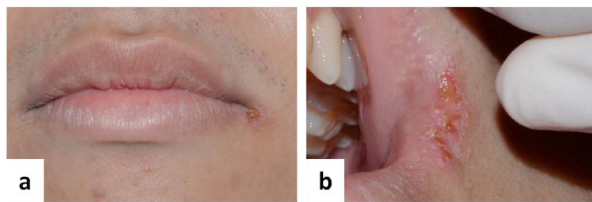


Figure 1. Initial clinical presentation. a) Unilateral lesion of the oral commissure. b) Lesion showed erythematous erosion with yellow crust and small vesicles.

CASE REPORT

Our patient complained of a sore on the left side of his mouth. He reported pain, especially when opening his mouth, with symptoms starting 3 days before his visit to the Faculty of Dentistry, Universitas Indonesia Dental Hospital in Jakarta, Indonesia. The lesion abruptly suddenly and never bled. At presentation, the patient reported slight headache symptoms. He had a history of a similar lesion that occurred around 10 years ago, which he self-medicated with antifungal cream which he also applied to the present lesion for 2 days. Patient admitted a bad habit of licking his own lips and never applying any lip moisturizer. He was a clinical dental student and lived away from his family in a boarding house near his college. His daily diet consisted of rice, proteins, and vegetables; however, he only consumed fruits approximately once per week. He mentioned feeling quite under stress due to heavy school work, especially the clinical practice. Patient has no history of systemic disease, medication, or allergy and has no habit of smoking or alcohol drinking. He performed good oral hygiene practice by brushing his teeth twice a day, in the morning and before sleep. Patient was not using any mouthwash. The patient mentioned that prior to the emergence of the lesion, he was also enrolled as a research subject and underwent buccal mucosa scraping to collect epithelial cell samples.

Upon extraoral examination, his lymph nodes appeared normal and his lips were obviously dry. On the left side of the lip commissure, we noted an erythematous base with several fissures and yellowish crust that extended outward (Figure 1a). Upon closer inspection, we noted several vesicles with diameter of less than 1 mm within the crust (Figure 1b). Intraorally, no teeth were missing and occlusion appeared normal. The patient had good oral hygiene with no signs of gingivitis. On the basis of clinical presentation and history, we diagnosed him with RHL.

Since there were no factors suggestive of fungal infection, we instructed the patient to discontinue his use of antifungal cream. As an alternative, we provided him with a prescription for topical cream containing



Figure 2. Healed lesion 2 weeks after treatment for herpes labialis.

5% acyclovir. The patient was instructed to moisten the lesion with a chlorhexidine 2% pad for 1–2 min before dabbing a thin layer of acyclovir cream on the lesion, with a clean finger, five times per day. A supplement containing multivitamins, folic acid, and zinc was also prescribed as supportive treatment. We also urged the patient to stop licking his lips and to use lip moisturizer to prevent dryness and UV protection.

The patient was followed up 2 weeks after his first visit. He reported that he diligently applied the acyclovir cream to the lesion, as instructed. The yellowish crust disappeared, and there were no signs of new vesicles, although his dry lips persisted. The patient no longer complained of pain, suggesting resolution of herpes labialis (Figure 2).

DISCUSSION

This was a case of inconspicuous RHL since the lesion was found at the left corner of the mouth, initially thought to be AC. At first, we explored the possibility of a *Candida* infection since the patient had been applying antifungal cream, thinking that the lesion was a fungal associated AC. The patient was a young, healthy male with no medical history of prior illness or long-term drug consumption that could have compromised his immune system. The patient also did not use any mouthwash or broad-spectrum antibiotics that could have created an oral flora imbalance. His teeth were complete with normal occlusion and no sign of vertical dimension loss. The patient showed good oral hygiene without any intraoral lesions. It is clear that we had no evidence of fungal infection predisposing factors to suggest a possible oral fungal infection. Therefore, there was no reason for the patient to continue applying antifungal cream to his lesion.

We determined that the lesion was not fungal in nature and began to consider other potential causes for AC. The patient denied any systemic condition and allergy. The unilateral presentation of lesion exclude AC caused by nutritional deficiencies. The yellowish crust on the surface and the lack of fissures or cracks led us to consider a possible herpes infection. Upon finding the

Table 1. Comparison of recurrent herpes labialis and angular cheilitis

	RHL	AC
Etiology	Herpes Simplex Virus	Underlying condition, <i>Candida sp.</i> , <i>Staphylococcus aureus</i>
Clinical features	Vesicles, ulceration, yellow crust, erythema, pain, swelling	Erythema, fissures, ulceration, crusting, burning sensation, pain
Predisposing factors		Local (irritants, allergic, infectious) and systemic factors
Triggers	Immunosuppression, stress, sun exposure, trauma, illness	
Recurrence	+	-
Systemic prodrome	+/-	-
Location	Anywhere in labial vermillion	Involving one or both corners of the mouth
Management	Antiviral, avoidance of triggering factors, improvement of immunity	Elimination of predisposing factors, antifungal
Self-limiting	+	-

small vesicles, we determined the patient had RHL, a secondary HSV infection.

Primary oral cavity HSV infections are usually acquired through direct contact with infected body fluid. HSV type 1 binds with specific cell surface receptors and fuses with the plasma cell membrane allowing the virus to replicate in oral mucosal cells. In children, following an incubation period of several days to weeks, the primary infection can manifest as a primary herpetic gingivostomatitis characterized by vesicular eruption that rapidly ruptures into shallow ulceration with a yellowish-gray pseudomembrane on keratinized oral mucosa such as the hard palate and gingiva, healing completely in 10–14 days. This manifestation is generally preceded by nonspecific symptoms such as malaise and myalgia (prodromal). The clinical manifestation can be asymptomatic or very mild, interfering with symptom recall. When the infection subsided, the virus did not disappear. Instead, the virus entered the nerve cell and became latent. When the HSV reactivates, it multiplies in the nerve body and is transported to the cutaneous nerve endings, causing recurrent herpes simplex infections.^{3,12}

Recurrent HSV infections can be triggered by several factors including emotional stress, fever, exhaustion, local trauma, or sun exposure.^{3,11,12} Typically, recurrent infections form on the lips and are referred to as RHL. The symptoms that accompany recurrence are milder than those associated with primary infections and range from paresthesia, itching, burning sensations, or pain at the site of reactivation, in addition to systemic symptoms such as headache, fever, nausea, and muscle pain.^{4,5,11,13} These symptoms precede recurrent lesions and, in a matter of hours, were followed by erythema and vesicle formation that turned into ulcers, then crusted before healing into normal skin. Of note, some of these stages may not be evident.¹⁴

RHL may mimic AC due to its similar location on the corner of the mouth as in this case, especially when the vesicles have ruptured and crusted over. Recurrence within the same spot can be an important clue for diagnosing RHL.⁷ Our patient said that this lesion was recurrent and initially thought that it was a fungal infection, which then he self-medicated. However, considering the patient’s history of recurrence, the lesion location, the yellow crusting, presence of vesicles, and the prodromal symptoms, RHL was established as the final diagnosis. Table 1 summarizes the similarity and difference between RHL and AC.

We suspected that emotional stress was the factor that predisposed our patient to herpes reactivation. The patient admitted being burdened with his daily activities as a clinical dental student, which caused psychological and physical stress. The exact mechanisms between psychological stress and virus reactivation have not been eluded, but it was hypothesized that the human response to stress triggers the release of stress-related hormones in the hypothalamus–pituitary–adrenal axis that directly induced the latent virus. Moreover, stress can suppress the host’s immunity causing susceptibility for virus reactivation.^{15,16} Additionally, a recent study of the relationships among psychological distress, emotional stability, and emotional regulation is HSV-seropositive females showed a strong association between stress and herpes simplex reactivation.¹⁷

Another factor that may have triggered the occurrence of herpes labialis in our patient was oral trauma incurred as a research subject. No matter how mild the buccal mucosa epithelial scraping was, it may have been sufficient to induce HSV reactivation; thus, we cannot exclude this possibility. Moreover, dental treatments like scaling may inflict trauma that reactivates the latent HSV in the nerve ganglion, becoming RHL, although the exact mechanisms are incompletely understood.^{11,18}

Topical acyclovir cream was indicated since the lesion was still in the vesicular stage and it was within 72 h of initial appearance. Acyclovir works as a competitor for the HSV polymerase reaction and halts the expansion of viral DNA, thus inhibiting viral replication and shortening symptom duration.¹⁹ Before acyclovir cream application, our patient applied chlorhexidine 0.2% to the lesion to clean the crust on the surface of the lesion and prevent secondary infection within the lesion. Chlorhexidine is effective against lipophilic viruses such as HSV; therefore, we expected a synergistic effect of combining chlorhexidine–acyclovir.²⁰ We also prescribed multivitamins to support our patient's recuperation.

In addition to pharmacological management, we counseled the patient on disease management and factors that may trigger lesion recurrence. We encouraged the patient to manage his stress and to increase his intake of a balanced and nutritional diet. We also suggested the patient regularly apply UV protection-containing lip balm. However, male patients may be less compliant when applying sunscreen.⁶

CONCLUSION

Herpes simplex infection is among the most common infection faced by dentists. Due to the rapid development of its lesions, patients may present with vague symptoms and ambiguous clinical appearances. Lesion of RHL and AC can be similar to each other, especially when RHL occurred at the corner of mouth. However, by maintaining detailed attention to history taking and lesion observation, the correct diagnosis and management of RHL can be conducted.

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CONFLICT OF INTEREST

None declared.

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