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A Case Report : Recurrent Herpes Labialis In A 12 Year Old Boy

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ABSTRACT

Introduction: Herpes labialis, commonly known as cold sores, is an infection predominantly caused by herpes simplex type 1 (HSV-1). Transmission of herpes labialis occurs through direct contact with active lesions or bodily fluids, including saliva, from infected individuals. Patients with herpes labialis often report prodromal symptoms before lesions appear, such as fever, fatigue, loss of appetite, and muscle aches. Localized symptoms, including pain, burning, or itching at the site of the impending eruption, are also common. This case report discusses a recurrent herpes labialis case at Wangaya Regional General Hospital, aiming to enhance understanding of the condition's presentation, management strategies to prevent recurrence, and measures to minimize transmission. **Case Report :** A 12-year-old boy was diagnosed with recurrent herpes labialis caused by an infection with herpes simplex virus type 1 (HSV-1). This diagnosis was based on the patient's medical history, which indicated prodromal symptoms and polymorphic lesions, as well as dermatological examination findings that showed herpetiform vesicles with crusting. The patient's history of similar symptoms and the lesion's localization to the vermillion border of the lips support the diagnosis of a recurrent infection. Herpes labialis is most commonly seen in children, particularly those under 19 years of age, which corresponds with the patient's age. The primary risk factor is direct contact with an infected individual, which aligns with the patient's history of frequently sharing food and drinks with a friend who also exhibited similar symptoms. Additionally, the patient was known to share electronic cigarettes (vapes) with schoolmates. Recurrent herpes labialis can be triggered by various factors, including weakened immunity and UV exposure, both of which were present in this case. **Conclusion:** The main treatment provided for this patient was oral acyclovir. The use of acyclovir aims to reduce symptoms, accelerate healing, and lower the risk of infection transmission. Acyclovir works by inhibiting viral replication through the suppression of DNA polymerase, which reduces the amount of active virus and speeds up recovery. The dosage of acyclovir given to the patient was in accordance with recommended guidelines. Supportive diagnostic tests, such as serology or Tzanck smear, are recommended to confirm the diagnosis. However, in this case, the diagnosis was already established through medical history and physical examination. Given that this is a contagious disease, the patient was educated on measures to reduce the risk of transmission.

Keywords: Recurrent, Herpes Labialis, A 12-year-old boy

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INTRODUCTION

Herpes labialis, commonly known as cold sores, is an infection predominantly caused by herpes simplex type 1 (HSV-1). It is a widespread condition with a high global prevalence. HSV-1 primarily infects the oral mucosa and surrounding skin, resulting in highly contagious lesions. While most cases are due to HSV-1, a smaller proportion can arise from HSV-2, linked to the increasing prevalence of orogenital sexual contact. These lesions can cause pain, itching, and discomfort, significantly impacting the quality of life for affected individuals.[1]

Transmission of herpes labialis occurs through direct contact with active lesions or bodily fluids, including saliva, from infected individuals. Notably, HSV-1 can spread even in the absence of symptoms. After the initial infection, the virus remains dormant in neural ganglia, particularly the trigeminal ganglion. Reactivation can occur due to various triggers such as stress, sun exposure, trauma, fever, and immune suppression. Upon reactivation, the virus migrates to the skin or mucosa near the lips, producing lesions similar to the primary infection.[1]

Patients with herpes labialis often report prodromal symptoms before lesions appear, such as fever, fatigue, loss of appetite, and muscle aches. Localized symptoms, including pain, burning, or itching at the site of the impending eruption, are also common. Lesions progress through several stages, from papules to vesicles, pustules, ulcers, erosions, and crusts. As these stages do not occur synchronously, lesions at different stages often coexist, which is described as polymorphic lesions.[2]

Diagnosis is usually clinical but may require laboratory tests, such as serology or a Tzanck smear, for confirmation in certain cases. Treatment typically involves oral antiviral medications like acyclovir, valacyclovir, or famciclovir to reduce symptom severity, shorten duration, and lower recurrence rates. Despite their effectiveness in managing symptoms, these treatments cannot

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eradicate HSV-1, leaving the potential for recurrence. Management also aims to prevent transmission to others.[3]

This case report discusses a recurrent herpes labialis case at Wangaya Regional General Hospital, aiming to enhance understanding of the condition's presentation, management strategies to prevent recurrence, and measures to minimize transmission.

CASE REPORT

2.1 Patient Information

- Name : DW
- Gender : Male
- Age : 12 years
- Ethnicity : Balinese
- Religion : Hindu
- Marital Status : Single
- Occupation : Student

2.2 Anamnesis

Presenting Complaint

A 12-year-old boy presented with fluid-filled blisters on his upper lip that appeared one day prior to admission. Before the blisters developed, he experienced lip swelling, redness, pain, a burning sensation, and itching. The blisters initially appeared reddish and later filled with clear fluid, some turning yellowish. They subsequently ruptured, leaving yellow and white crusts. New blisters continued to form as others ruptured. The patient admitted to manually rupturing some blisters.

Associated symptoms included fever, fatigue, and loss of appetite three days before the blisters appeared. The fever onset was sudden and high-grade, although no temperature measurement was recorded. At presentation, the fever had resolved. No cough, sore throat, neck swelling, significant weight loss, or other symptoms were reported.

Past Medical History

The patient reported experiencing similar symptoms one month prior, affecting his upper lip and tongue. He sought treatment at a local clinic two days after the initial onset, with symptoms resolving following treatment. He denied any history of other illnesses such as asthma, allergic rhinitis, or atopic dermatitis.

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Treatment History

- Cotrimoxazole
- Paracetamol
- Dexamethasone
- Bufacomb OB
- Vitamin C

Family History

The patient denied a family history of herpes labialis, skin disorders, diabetes mellitus, hypertension, allergies, asthma, or other systemic diseases.

Personal and Social History

The patient is a primary school student with no history of sexual activity. He reported that a close friend at school had similar symptoms a month prior, with whom he frequently shared food and drinks. The patient also admitted to sharing electronic cigarettes (vapes) with schoolmates.

Lifestyle factors included irregular sleep patterns (3–4 hours nightly due to late-night gaming) and frequent exposure to direct sunlight during outdoor activities without protection for his face and lips. The patient is an only child, with no younger children in the household.

2.3 Physical Examination

General Status

- General Condition: Mild illness
- Consciousness: Compos mentis (GCS E4V5M6)
- Blood Pressure: 110/80 mmHg
- Pulse: 74 beats/min
- Respiration Rate: 18 breaths/min
- Temperature: 36.7°C (axillary)
- Oxygen Saturation: 99% on room air
- Pain Scale (NPRS): 3/10
- Weight: 43 kg
- Height: 150 cm
- BMI: 19.1 kg/m²

General Status Examination

- Head : Normocephalic.
- Face : No neurological deficits.
- Eyes : No conjunctivitis, anemia of the conjunctiva, or scleral icterus. Pupillary reflexes present bilaterally (+/+); pupils are isochoric, measuring 3 mm in

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diameter bilaterally.

- ENT : No secretions, ulcers, or hyperemia of the pharynx. Tonsils appear normal (T1/T1).
- Neck : No enlargement of lymph nodes (KGB), thyroid gland enlargement, or lesions.
- Thorax:
  - Cardiac: Regular heart sounds (S1, S2) with no murmurs.
  - Lungs: Vesicular breath sounds present bilaterally (+/+). No rhonchi or wheezing detected (-/-).
- Abdomen: No distension or lesions; bowel sounds present and normal.
- Extremities: Warm extremities bilaterally (+/+), no edema detected (-/-), capillary refill time (CRT) less than 2 seconds. No lesions observed.
- Neurological Examination: Within normal limits (WNL).

Dermatological Status

- Location: Upper lip (labial region)
- Lesion Description: Multiple vesicles with clear fluid, rounded, well-defined margins, and smooth surfaces. The lesions ranged from 0.1 to 0.4 cm in diameter, arranged in a herpetiform pattern. Some lesions were covered with yellow crusts. Edema was present.

2.2 Differential Diagnosis

- Herpes labialis
- Impetigo crustosa
- Impetigo bullosa
- Herpes zoster

2.3 Additional Examination

- Serologic HSV testing
- Tzanck smear

2.4 Working Diagnosis

Recurrent herpes labialis

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2.5 Treatment

- Sodium chloride (NaCl) 0.9% compresses
- Oral acyclovir 400 mg five times daily for five days
- Paracetamol 500 mg every eight hours as needed for fever
- Gentamicin sulfate ointment (0.1%) applied thrice daily

2.6 Patient Education

- Explanation of the diagnosis, etiology, and transmission of herpes labialis.
- Emphasis on treatment adherence.
- Maintenance of hygiene and proper handwashing techniques.
- Avoidance of scratching or breaking lesions.
- Keeping lesions clean and dry.
- Avoiding shared use of personal items, food, or drinks.
- Importance of adequate rest and sun protection.

2.7 Prognosis

- Ad vitam : dubia ad bonam
- Ad functionam : dubia ad bonam
- Ad sanationam : dubia ad bonam

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Figure 1. On upper lip (labial region) multiple vesicles with clear fluid, rounded, well-defined margins, and smooth surfaces. The lesions ranged from 0.1 to 0.4 cm in diameter, arranged in a herpetiform pattern. Some lesions were covered with yellow crusts. Edema was present.

DISCUSSION

The patient in this case is a 12-year-old boy who presented with fluid-filled blisters on his upper lip, accompanied by pain, burning, and itching sensations. He was diagnosed with suspected recurrent herpes labialis. Herpes labialis is one of the most common manifestations of herpes simplex virus type 1 (HSV-1) infection, predominantly affecting the orofacial region. The highest incidence is seen in childhood, with no gender predominance. Studies show the condition is most common among individuals under 19 years of age, with a declining incidence in adults.[2] This aligns with the patient's age, placing him within the demographic most affected by herpes labialis.

HSV-1 transmission typically occurs through direct

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contact with infected saliva or other bodily secretions.[1] The patient reported that a close friend had similar symptoms, with whom he frequently shared food and drinks. Additionally, he admitted to sharing electronic cigarettes (vapes) with schoolmates. This suggests the likelihood of transmission via direct contact with his friend's saliva.

Recurrence risk factors for herpes simplex include trauma, stress, compromised immunity, fatigue, ultraviolet (UV) exposure, and other triggers.[3] In this case, inadequate sleep due to late-night gaming likely weakened the patient's immunity. Frequent UV exposure from outdoor activities without proper protection also contributed to recurrence risk. Other potential triggers should be further investigated. Although HSV-2 may also cause herpes labialis, especially with increasing orogenital sexual activities,[3] this is unlikely in this patient due to his young age and lack of sexual activity. Thus, the recurrent herpes labialis in this case is most likely caused by HSV-1.

Patients with herpes labialis typically experience prodromal symptoms such as fever, fatigue, loss of appetite, and muscle pain before the appearance of lesions. Localized symptoms, including pain, burning, and itching at the eruption site, often precede lesion formation. Lesions progress through various stages—papules, vesicles, pustules, ulcers, erosions, and crusts. The asynchronous progression of lesions creates polymorphic lesions.[2] In this case, the patient reported fever, fatigue, and loss of appetite two days before the appearance of the blisters. His upper lip appeared red and felt itchy, painful, and burning. The lesions initially appeared reddish, filled with clear fluid that turned yellowish, and eventually ruptured to form crusts. This clinical course aligns with the classic progression of herpes labialis lesions and their polymorphic nature.

Patients with herpes labialis may present with fever, cervical lymphadenopathy, or other manifestations of HSV, such as palatal ulcers, pharyngitis, or complications like Bell's palsy.[2]

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Dermatologically, findings include erythematous papules, vesicles, pustules, ulcers, and crusts. In this case, no fever or cervical lymphadenopathy was noted, likely due to prior use of paracetamol. Neurological complications, such as Bell's palsy, were absent. On dermatological examination, multiple clear fluid-filled vesicles, round and well-defined, measuring 0.1–0.4 cm, were observed on the upper lip. Some lesions were covered with yellow crusts, and edema was present. These findings are consistent with herpes labialis, characterized by herpetiform vesicles and crusts resulting from ruptured vesicles or pustules.

The diagnosis of suspected recurrent herpes labialis was based on clinical history and physical examination. The patient reported a prior episode of similar symptoms one month earlier, and the lesions were localized to the vermillion border of the lips, consistent with recurrent HSV-1 infection. Unlike primary infections that affect the entire mouth and lips, recurrent HSV-1 infections typically localize to the vermillion border.[1]

The differential diagnosis for this case includes impetigo crustosa. Impetigo crustosa is a superficial pyoderma confined to the epidermis. In line with this patient's presentation, impetigo crustosa typically has a predilection for the face and is characterized by honey-colored crusted lesions. It commonly affects children, making it a plausible consideration in this case. However, the presence of lesions specifically on the lips, along with prodromal symptoms and fever, makes impetigo crustosa less likely in this patient. Another differential diagnosis is herpes zoster, a viral infection caused by the reactivation of the varicella-zoster virus (VZV). Herpes zoster typically affects the skin and mucosa, with an incubation period of 7–12 days, and is more commonly observed in individuals over 50 years old or those with compromised immune systems. This patient is 12 years old and does not have any underlying conditions or treatments that would suggest immune suppression, making herpes

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zoster an unlikely diagnosis in this case.

To distinguish herpes labialis from its differential diagnoses, additional diagnostic tests such as serology and Tzanck smear can be performed. Serological testing can identify antibodies specific to HSV-1 (herpes simplex virus-1), which helps differentiate it from HSV-2 or other viral infections. Furthermore, serology is useful in determining whether the herpes infection is primary or secondary. In this patient, it is unclear whether the infection is primary or recurrent, as the patient reported experiencing similar symptoms approximately one month prior to the current visit. If serology is not feasible, a Tzanck smear can be performed, which detects multinucleated giant cells. However, while the Tzanck smear confirms the presence of these cells, it cannot differentiate between HSV and varicella-zoster virus (VZV). Therefore, serology remains the gold standard for HSV diagnosis.[1]

Patients with herpes labialis are treated with acyclovir due to its effectiveness in alleviating symptoms and accelerating recovery. Acyclovir inhibits viral replication, reduces the severity of the infection, and lowers the risk of viral transmission to others. Additionally, it shortens the duration of the illness and improves the condition of infected skin. Acyclovir functions by inhibiting the viral DNA polymerase enzyme, which is essential for viral replication. Once converted to its active form (acyclovir triphosphate) by enzymes within infected cells, it binds to the growing viral DNA chain, halting nucleotide addition and preventing DNA synthesid.[4] This mechanism reduces viral replication, decreases the viral load, and expedites healing. According to Fitzpatrick's Dermatology, acyclovir is the recommended treatment for recurrent orofacial herpes simplex in children. For patients weighing less than 40 kg, the dosage is 15 mg/kg body weight (BW) administered five times daily. For those weighing 40 kg or more, the adult dosage of 400 mg five times daily is used. This dosage is appropriate provided the patient has normal renal function.

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Treatment is typically administered orally for 4–5 days or until the lesions heal completely.[2] In this case, the patient, a 12-year-old weighing 43 kg with normal urinary output indicating no renal impairment, was prescribed oral acyclovir at a dose of 400 mg five times daily for five days, which aligns with established guidelines. Prior to applying topical acyclovir, the crusted lesions were cleansed using 0.9% NaCl compresses to ensure proper application..

Education provided to patients with herpes labialis aims to help them understand their condition, prevent transmission to others, and minimize symptoms as well as the likelihood of recurrence. Patients should be informed about how the virus can remain latent in the body and reactivate when triggered by factors such as weakened immunity or UV exposure. Therefore, in this case, the patient was educated on maintaining good immune function by getting sufficient sleep and avoiding direct UV exposure by using protection. Since the virus can also be transmitted through direct contact with lesions or bodily fluids, the patient was instructed not to share eating utensils, toothbrushes, towels, or engage in physical contact such as kissing others. Additionally, the patient was advised to wash hands regularly using proper techniques, especially after touching infected areas, to reduce the risk of spreading the virus to other parts of the body or to others. Furthermore, the patient was educated on keeping the infected area clean, including applying gentamicin ointment to prevent secondary infections.[5]

CONSCLUSION

A 12-year-old boy was diagnosed with recurrent herpes labialis caused by an infection with herpes simplex virus type 1 (HSV-1). This diagnosis was based on the patient's medical history, which indicated prodromal symptoms and polymorphic lesions, as well as dermatological examination findings that showed herpetiform vesicles with crusting. The patient’s history of similar symptoms and the lesion’s localization to the vermillion border of the lips support the diagnosis of a

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recurrent infection. Herpes labialis is most commonly seen in children, particularly those under 19 years of age, which corresponds with the patient's age. The primary risk factor is direct contact with an infected individual, which aligns with the patient's history of frequently sharing food and drinks with a friend who also exhibited similar symptoms. Additionally, the patient was known to share electronic cigarettes (vapes) with schoolmates. Recurrent herpes labialis can be triggered by various factors, including weakened immunity and UV exposure, both of which were present in this case.

The main treatment provided for this patient was oral acyclovir. The use of acyclovir aims to reduce symptoms, accelerate healing, and lower the risk of infection transmission. Acyclovir works by inhibiting viral replication through the suppression of DNA polymerase, which reduces the amount of active virus and speeds up recovery. The dosage of acyclovir given to the patient was in accordance with recommended guidelines. Supportive diagnostic tests, such as serology or Tzanck smear, are recommended to confirm the diagnosis. However, in this case, the diagnosis was already established through medical history and physical examination. Given that this is a contagious disease, the patient was educated on measures to reduce the risk of transmission.

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