Case Report

Management of Herpangina in 2 Years-Old Patient

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Abstract

Herpangina is an acute viral infection caused by Enterovirus 71. This infection generally occurs in children under 10 years old and can heal within 4-7 days. Herpangina is characterized by the appearance of ulcers with discomfort pain in the posterior area of the oral cavity like tonsils, uvula and soft palate. A 2-year-old came with his mother, complaining of a large number of sores in his mouth and anorexia. 2 days ago he had fever. To describe management and treatment of herpangina in a 2 years old patient. Herpangina is a self-limiting disease. Dentists can give symptomatic and supportive therapy to support the healing process. In addition, maintaining the cleanliness of the environment and the oral cavity can reduce the risk of recurrence or other viral infections.

Keywords: Herpangina, toddler, sores, viral infections

INTRODUCTION

Viral infections are one of the infectious diseases that dentists often encounter. Clinical conditions of the oral cavity that are similar to other viral infectious diseases can often confuse practitioners. Manifestations of oral diseases caused by viruses can be ulcers or blisters on the soft tissue, this is caused by the body's immune reaction to exposure to incoming viruses. Viral infections that infect children are considered more severe or severe compared to viral infections that infect adult patients. The reason that allows this to happen is that as we get older the body's immune response has a better level of maturity compared to children. Apart from that, virus transmission tends to be high among those aged 1 year old, this is due to the inability of children to maintain hygiene independently, both oral and extraoral hygiene.

Determining the diagnosis of viral infections that manifest in the oral cavity can be determined through physical examination, intra-oral examination or information provided by the patient or parents. Prodromal symptoms or fever complaints are usually conveyed by the patient's parents before the lesion is discovered. In determining the etiology of lesions in the oral cavity, the dentist can look at the clinical appearance of the patient, the type of lesion and number of lesions, the location of the lesion (salivary glands, soft/hard palate, mucosa), and the characteristics of the lesion.

Supporting examinations can be carried out if the clinical examination suspects the possibility of another disease, this aims to ensure that the treatment given to the patient is more appropriate. A viral infection that has manifestations similar to herpangina is primary herpetic gingivostomatitis which is caused by infection with the HSV 1 virus. One of the tests used to detect the HSV1 virus is IgG and IgM serological examination. It is recommended that this examination be carried out as soon as possible after symptoms appear. In some cases, IgM can be detected within 3-6 days, while IgG will only be detected on the 8th day after symptoms appear. So it can be concluded that IgM antibodies tend to indicate ongoing exposure...
to the virus, while IgG are antibodies that have been formed after the body was exposed to the virus some time ago.\textsuperscript{5,6} This examination can be performed to rule out differential diagnoses.

The purpose of writing this case report is to describe the course of treatment for herpangina in a 2 year old child.

**CASE**

The first visit was on June 2 2023, a 2 year old boy patient came with his mother, complaining of mouth ulcers so that the child had no appetite. The complaint began when 2 days ago the patient had a high fever, then the patient's parents took their child to the emergency room, where the doctor gave them a suppository to reduce fever. Three days after the fever, the patient's parents discovered redness on his left lower lip, after that the patient's parents examined their child's oral cavity and found thrush on the palate and inner right cheek. The patient cannot eat, currently the patient only consumes milk. In the past, the patient had experienced a condition similar to a diagnosis of Hand Mouth and Food Disease. The patient has a history of seizures (epilepsy) and is taking regular medication in the form of barbiturate acid which is taken twice a day, namely morning and evening. The patient is not suspected of having a history of certain drug or food allergies. The patient had a history of hospitalization 6 months ago due to seizures. Neither the patient's friends or closest relatives experienced anything similar to the patient.

Objective examination revealed round-shaped lesions in the area of the palate, buccal mucosa and mucobuccal fold, multiple with varying sizes, white with reddish edges and clear boundaries, symptomatic.

**CASE MANAGEMENT**

Based on the results of subjective and objective examinations, the working diagnosis in this case was herpangina with the differential diagnosis being primary herpetic gingivostomatitis because clinical examination also found lesions on the gingiva and labial mucosa. To eliminate the differential diagnosis, supporting examinations are carried out in the form of anti-HSV-1 IgG and IgM tests.

<table>
<thead>
<tr>
<th>examination</th>
<th>Result</th>
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<tbody>
<tr>
<td>IgG Anti HSV I</td>
<td>Non Reaktif</td>
</tr>
<tr>
<td>IgM Anti HSV I</td>
<td>Negatif</td>
</tr>
</tbody>
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Figure 2. results of supporting examinations

The results of supporting examinations showed non-reactive IgG and IgM anti-HSV I results, so it can be concluded that the final diagnosis in this case is herpangina. The differential diagnosis of primary herpetic gingivostomatitis can be excluded. The patient was given non-steroidal anti-
inflammatory mouthwash containing chlorine dioxide, zinc and aloe vera. In addition, the patient was given ibuprofen syrup to relieve fever, pain and was given multivitamins as supportive therapy. In addition to giving the patient's medication, the operator provides education to the patient's parents such as giving soft food to children and not recommending giving hot food or drinks because it will make the child more uncomfortable, then recommends that eating and drinking utensils be differentiated from others, not using the same towel as other families and sleep separately to prevent transmission of infection. The operator observes for 7 days to see the progress of healing in the oral cavity lesion.

Visit 2 was carried out on June 10 2023. On subjective examination the patient no longer complained of pain, this was indicated by an increase in the child's appetite. This increase in appetite began on Monday, June 5 2023. The patient ate 3 times a day and sometimes alternated with snacks. Objective examination showed that the lesions on the palate, buccal and mucobuccal folds had disappeared, on the lower left lip the lesions had begun to fade, leaving a reddish area where the previous lesion had been, asymptomatic. The patient's clinical appearance can be seen in Figure 3.

DISCUSSION

Herpangina is an acute viral infection with characteristics of a self-limiting disease. This infection generally occurs in children under 10 years of age and can heal within 4-7 days if the patient's prognosis is good. Herpangina is caused by the Enterovirus 71 virus type. Although this viral infection can heal on its own, in fact exposure to this virus can cause complications such as meningitis, cardiomyopathy and even death, especially in babies. Herpangina is characterized by the appearance of ulcers accompanied by pain in the posterior area of the oral cavity including the tonsils, uvula and soft palate.7

This virus can be transmitted through fecal-oral contact or from respiratory secretions through close contact, droplets and fluids in blistered or broken lesions, contact with objects or hands contaminated with the virus, sharing food or drink, but the transmission process is influenced by the level of cleanliness, individual. Herpangina is an acute infection that is preceded by fever and sore throat. The fever that appears in each individual is different, it can even reach 400°C or even more which can cause seizures in the patient. Fever can last for 2-4 days accompanied by headaches, myalgia, decreased appetite and weight loss caused by pain in the oral cavity.8

On intra-oral examination, hyperemia in the pharynx can be found in the initial phase of infection. The appearance of white bewarwa lesions surrounded by a reddish color, the diameter of the lesions is 2-4mm or varies in number. These lesions predominate on the soft palate, uvula, tonsils, but it is possible for these lesions to appear in other parts of the oral cavity.9

Supporting examinations can be carried out to eliminate the possibility of other diagnoses or differential diagnoses of a viral infection. The laboratory examination that can be used is viral culture. Viral culture is the "gold standard" for examining

Figure. 3 clinical appearance at the control visit, (a) palate without lesions, (b) lesions on lips and gingiva have disappeared
herpangina. This examination takes about one week to get results, so this type of examination is not appropriate for use in clinical practice. The second laboratory examination option is Polymerase Cain Reaction (PCR), where samples can be taken from feces, mucocutaneous ulcers, vesicular fluid or cerebrospinal fluid. This examination is considered faster and more effective because it is very sensitive to enteroviruses. The laboratory examination method that can be used is serological examination, in this examination the IgG and IgM titers will be checked, the appearance of IgM during the acute phase and the increase in IgG during the recovery period.10

Management of herpangina in children can be described as follows11:
1. Children who have a fever should give them clothes that are not too thick and consume enough mineral water.
2. Isolate the patient to prevent cross infection, get enough rest with good air circulation
3. Avoid hot foods which can trigger irritation in the oral cavity and follow a soft diet
4. Give fever-reducing or anti-pain medication to reduce patient complaints
5. Give multivitamins to help speed up healing
6. Maintain oral hygiene by gargling with salt water or saline after eating. For children, parents can provide care by rinsing their child's oral cavity using saline.
7. Change clothes regularly to keep your body clean

The differential diagnosis of herpangina is Primary Herpetic Gingivostomatitis (PHGS). Primary herpetic gingivostomatitis is a primary manifestation of Herpes Simplex Virus type 1 infection which generally occurs in susceptible children aged 6 months to 5 years, it may also occur in adults.12 The prodromal phase lasts 1-2 days and is followed by the presence of oral lesions. The incubation period for this virus is 2 weeks. Transmission of this virus can be through direct contact from someone who is exposed to the virus or in the recurrence phase. Primary herpetic gingivostomatitis is a disease that is easily transmitted through direct contact with mucous membranes or skin lesions. HSV-1 infection in young children has a high prevalence, potentially risky children's habits such as holding their mouths, cups, bottles, toys and sucking their fingers are supporting factors for the spread of the virus. This infection can heal within 10-14 days. The characteristic features of this infection are the appearance of inflammation at the gingival margin and the appearance of vesicles in the oral cavity. These vesicles will burst and then form ulcers with an irregular shape that is yellowish in color and surrounded by a halo of erythema on the buccal mucosa, labial mucosa, gingiva, palate, tongue and lips.13,14 Herpangina oral lesions are usually located in the posterior oral cavity areas, such as the soft palate, anterior pillar of the fauces, tonsils, and uvula, presenting as hyperemic vesicles and/or ulcers. The oral ulcers in PHGS could be equally resided in both the anterior and posterior parts of oral cavity.15, 16 Other diseases and conditions that should be ruled out before making the diagnosis include Varicella, Measles, Drug eruption, Kawasaki disease and Eczema herpeticum.17

Prescribing mouthwash containing chlorine dioxide, zinc and aloe vera as symptomatic therapy. Chlorine dioxide produces oxygen which can help the tissue healing process. Oxygen is important for cell metabolism, especially energy production through adenosine triphosphate (ATP). Oxygen prevents infection in ulcers, stimulates angiogenesis, increases differentiation, migration and re-epithelialization of keratinocytes, increases fibroblast proliferation and collagen synthesis, and triggers ulcer contraction. Zinc
is a co-enzyme that plays a role in cell proliferation, wound healing, protection against free radicals, protection against infection, epithelial regeneration and the immune system. The aloe vera content in mouthwash has a symptomatic effect, namely as an anti-inflammatory, it is hoped that it can reduce patient complaints. 18, 19 Ibuprofen is prescribed as a symptomatic therapy containing non-selective cyclooxygenase-1 (COX-1) and cyclooxygenase-2 (COX-2) inhibitors that exhibit weaker anti-inflammatory properties than other NSAID drugs. Ibuprofen exhibits remarkable analgesic and antipyretic activity due to its cyclooxygenase inhibitory action. 20 In an attempt to maintain children's nutritional needs and reduce pain, patients may be prescribed multivitamins along with advice for a soft diet. It's also advised to isolate themselves from the environment to prevent transmission.

CONCLUSION
Herpangina is a viral infection that has self-limiting disease properties. This lesion dominates the posterior part of the oral cavity. Treatment that can be given to patients with herpangina is symptomatic and supportive therapy. Providing multivitamins, recommendations for a soft diet can be given to patients to minimize pain and as a form of effort to maintain nutritional needs for children. Isolation from the surrounding environment is also recommended to prevent transmission.

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REFERENCES
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