

## Management of Herpangina

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### ABSTRACT

**Background:** Herpangina is an acute infectious disease with self-limiting properties. While herpangina may heal without any treatment, it may be followed by various complications such as meningitis, encephalitis, cardiomyopathy, or even death. In 2018, there was a 10.07% prevalence rate of viral infection in Banjarmasin city, South Kalimantan. One of which was herpangina. **Objective:** To elucidate the management of herpangina. **Case:** Young female patient, 11 years old, complained of multiple ulcerations on the posterior side of her mouth with excruciating pain when swallowing. Ulceration had appeared for three days which was initially commenced by fever and cough. **Case Management:** The patient was prescribed methisoprinol syrup 250 mg four times a day, ibuprofen syrup 250 mg four times a day, mouthwash containing aloe vera extract to be applied thrice daily, and explicit instruction for bed rest. **Conclusion:** Dental practitioners must differentiate herpangina from other differential diagnoses thus enabling the acquirement of final diagnosis through clinical examination. This will significantly assist dental practitioners to provide precise clinical therapy for the patient with herpangina.

**Keywords:** Herpangina, management, methisoprinol.

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## INTRODUCTION

Herpangina is an acute infectious disease with self-limiting properties. This disease is commonly occurred among children and tends to heal in five to seven days. While herpangina may heal without any therapy, this disease frequently induces various complications such as meningitis, encephalitis, cardiomyopathy, or even death. Asia is the region that is commonly affected by this condition.<sup>1,2,3,4</sup> Herpangina is caused by coxsackie A type 1-6, 8, 12, 20, and 22 and also Enterovirus (EV) 71.<sup>2,3</sup> Of all viruses causing herpangina, EV 71 is the most frequent etiology of this disease with common complication such as neurological disease, cardiovascular collapse, and death.<sup>2,4</sup>

Enterovirus (EV) 39,8% and Coxsackievirus A genotypes 8 (CAV8) found 19,3% and from patients with these diseases in Thailand in 2012. In 2015, there was a large outbreak of herpangina in children caused by Enterovirus in Hangzhou, China. In 2018, there was a 10.07% prevalence rate of viral infection in Banjarmasin city, South Kalimantan. One of which was herpangina.<sup>5,6,7</sup>

EV 71 is categorized in the Picornaviridae family consisting of Ribo Nucleic Acid (RNA) genomes.<sup>8</sup> Therefore, any fecal-oral contact or respiratory secretion via direct person-to-person contact, droplets, and fomites may support the transmission of the disease. This transmission should also be supported by hygiene level, water quality, and crowding extension.<sup>4</sup>

Tropical and subtropical countries are frequently harmed by herpangina where the disease is transmitted in a year periodically. Including in Indonesia, this disease is more likely to be found in the rainy season. Clinical manifestations of herpangina are hardly distinguishable to other viral infections of the mouth, such as herpetic stomatitis and varicella-zoster.<sup>9</sup>

This resemblance will lead to misdiagnosis resulting in the inaccuracy of given

therapy. This case report aims to clarify the case management of herpangina. Is required further discussion to differentiate herpangina from other differential diagnoses so that dental practitioners may prescribe accurate therapy.

## CASE

A young female patient, eleven years old, complained about multiple ulcerations on the back of her mouth with excruciating pain when swallowing and resulted in difficulty eating. Based on history taking, the mother revealed that ulceration had occurred for three days. Before ulceration, the patient was experiencing a fever and cough. It was occurring for the first time. Due to unbearable painful sensations, the patient occasionally cried when dining with every food. Her mother had been administering Ibuprofen syrup 250 mg thrice daily for three days. Any improvement of the disease has yet been observed.

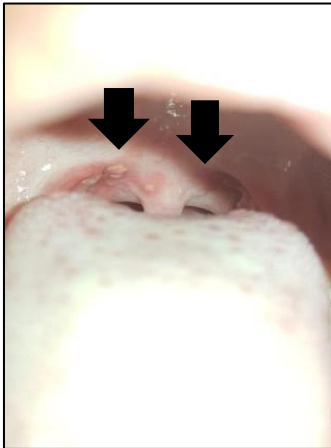
## CASE MANAGEMENT

Extra-oral examination revealed that the right and left submandibular glands were palpable, soft, and painful. Intra-oral examination exposed the presence of ulceration, 2 to 3 mm in diameter, multiple, painful, around oropharynx with reddish macula surrounding the lesion. Based on clinical examination, the patient was diagnosed with herpangina. It was determined by assessing the fever and flu-like syndrome before ulceration, the location of ulcers which were merely found on palatum molle, and the absence of ulceration on other locations.

The patient was prescribed methisoprinol syrup 250 mg four times a day, ibuprofen syrup 250 mg four times a day, and aloe vera extract-containing mouthwash thrice a day. The patient was also instructed for bed rest and isolation to prevent the disease's transmission to others. High calorie and protein consumption were advised with lots of mineral water intake. The



patient was requested to evaluate her condition for the following week.



**Figure 1.** Ulcer, multiple, 2 to 3 mm, white in color, surrounded by reddish appearance, and painful

### Second Visit (Day 8)

Based on anamnesis from her mother, the pain due to ulceration on the back of the patient's mouth had been subsided for the past three days. No fever was present and the patient was able to eat well. Extra-oral examination exhibited a normal submandibular gland. Intra-oral examination depicted no abnormal presentation. No lesion was present on the palatum molle surrounding the oropharynx which was normal in color and painless. The patient was healed and therapy was terminated.



**Figure 2.** Palatum molle around oropharynx demonstrated no lesion, normal in color, and absence in pain.

## DISCUSSION

This case presents a patient who is clinically diagnosed with herpangina. The diagnosis was established from particular clinical manifestations of herpangina such as multiple painful mouth ulcers which predominantly affect the posterior region of the oral cavity, including anterior pharyngeal fold, uvula, tonsils, and soft palate.<sup>4,9</sup>

Differential diagnoses of herpangina are herpetic stomatitis, hand foot and mouth disease (HFMD), and varicella-zoster.<sup>9,10</sup> Herpetic stomatitis is closely similar to herpangina ascribed its only occurrence in the oral cavity. Varicella-zoster and HFMD may easily be differentiated with herpangina through their clinical presentation on skin and ulcerations that occur on every surface of oral mucosal. In contrast, herpangina merely occurs in the posterior region of the oral cavity. Herpetic stomatitis that occurred in the oral cavity is a differential diagnosis which closely similar to herpangina. Both herpetic stomatitis and herpangina will be presented with high fever, prodromal symptoms, and flu-like syndrome before the emergence of ulceration in the oral cavity.<sup>9,11</sup> Clinical manifestations of both diseases include multiple yellowish ulceration with red surrounding and painful sensation.

A clear distinction between herpetic stomatitis and herpangina is presented in the type of virus causing the disease. Herpetic stomatitis is induced by herpes simplex virus type 1, while herpangina is caused by coxsackie A virus type 1-6, 8, 12, 20, and 22 and also Enterovirus (EV) 71. Clinically, herpangina only presents on the posterior of the oral cavity while herpetic stomatitis appears on all surface of the oral cavity and skin on the upper waist region.<sup>4,9,10</sup>

Enterovirus 71 (EV 71), the etiology of HFMD commonly found in the Asia Pacific region over the last decade, has been linked with neurological disease and mortality. Enteroviruses compose of small and non-enveloped RNA which are classified as

members of the picornaviridae family. Categorized as an RNA virus as well, the Cocksackie virus also belongs to the picornaviridae family.<sup>8</sup>

To determine the final or differential diagnoses of herpangina, such as allergic stomatitis, the specific clinical manifestation may be exerted. It had any difficulty persisted in diagnosing clinically, so that should be obtained using additional testing such as isolation of virus specimens to be confirm by PCR examination, indirect immunofluorescence assay, and serological analysis.<sup>1,9</sup> Meanwhile, herpetic stomatitis may be diagnosed through additional examination in the form of viral culture isolation, direct immunofluorescence, or serology.<sup>10</sup>

In this case, methysoprinol syrup 250 mg was prescribed four times daily, along with ibuprofen syrup 250 mg four times daily and aloe vera extract-containing mouthwash to be applied three times a day for one week. Since herpangina is not induced by the herpes simplex virus, thus methisoprinol was prescribed instead of acyclovir. Methisoprinol possesses immunomodulatory and antiviral effects. The drug can enhance immune response, macrophage proliferation, and phagocytic activity against viruses. This will improve the immune system by repairing impaired mediated cell immune response into normal cells.<sup>12</sup> As the most common and the most frequent NSAID to be prescribed, Ibuprofen contains non-selective cyclooxygenase-1 (COX-1) and cyclooxygenase-2 (COX-2) inhibitors which demonstrate weaker anti-inflammatory properties than other NSAID drug. It shows eminent analgetic and antipyretic activity due to cyclooxygenase inhibitory actions. Ibuprofen is also recommended to vanquish fever and malaise.<sup>13,14,15</sup>

The patient has also been prescribed an over-the-counter mouthwash containing aloe- vera extract that will accelerate the wound healing process and reduce pain sensation. The drug also holds antiviral, antibacterial, and antifungal activity with the capability of enhancing the re-epithelization process.<sup>16,17</sup> This

prescription aims to prevent secondary infection, reduce painful sensation, and facilitate not only the masticatory but also the speech process.<sup>18,19</sup> It may be concluded that the knowledge of dental practitioners is essentially required to distinguish herpangina from other differential diagnoses so that final diagnosis may be acquired through clinical examination only. This is due to the many similarities of the lesions in herpangina with other infectious diseases of the oral mucosa.<sup>20</sup> This method will assist dental practitioners in managing herpangina patients effectively.

## CONCLUSION

It may be concluded that is crucial for the dental practitioner to differentiate herpangina with another differential diagnosis thus enabling the acquirement of final diagnosis through clinical examination. This will significantly assist dental practitioners to provide precise clinical therapy for patients with herpangina.

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