

A Review of Gingivostomatitis in Children

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Oral herpes is a common infection of the mouth and gums which can appear as blistering on the tongue, the internal surface of the cheeks and swelling of the gums is caused due to herpetic gingivostomatitis in kids. Herpetic gingivostomatitis is named gingivostomatitis by some researches [1]. Primary herpetic gingivostomatitis is the most common viral infection in the oral cavity [2]. The appearance of this type of lesion may look like Canker sore. It usually occurs at the age of 1 to 3 years [3].

Children suffer from two types of herpes. The child will be exposed to the herpes virus for the first time so that the virus will cause herpes disease, consequently, the child will have the general symptoms. Eruptions of baby teeth and wounding gums are a beneficial factor in the development of oral herpes. Symptoms of gingivostomatitis may be very similar to teething. "Coincidentally, primary tooth eruption begins at about the time that infants are losing maternal antibody protection against the herpes virus. Also, reports on teething difficulties have recorded symptoms which are remarkably consistent with primary oral herpetic infection such as: fever, irritability, sleeplessness, and difficulty with eating" [4].

Secondly, the child often suffers from herpes or, in other words, her herpes recurs once a while. Because herpes viruses remain in the lips and face and oral cavity, and whenever the child is exposed to factors such as cold or sunshine (ultraviolet radiation), a fever or anxiety, the recurrence happens again. It may also appear if high fever is present, which is why gingivostomatitis is sometimes called "fever blisters".

Causes

- 1) Coxsackie virus [5]
- 2) Herpes simplex virus type 1 (HSV-1)
- 3) Poor oral hygiene

Symptoms

It usually begins with fever and irritability for one or two days, then the child feels pain in the mouth, and the drooling starts. His parents complain about his bad breath during this period due to poor oral hygiene. At this time, the child's fever reaches 40 to 40.5 degrees Celsius. By the examination of the child's tongue and mouth, there are usually seen small blisters on the tongue which are, about 10 mm in diameter, covered with a yellow-gray layer.

These ulcers are red in the middle. When the upper layer (crusted layer) is detached, superficial wounds develop. The location of these ulcers is usually on the tongue and the inner surface of the cheeks, but there may be all over the mouth. Swelling of the gingiva occurs sooner or simultaneously with mouth ulcers. In some cases, tonsils are also swelling. Sometimes, submandibular lymphatic glands of the kid may enlarge and swell too.

Fever and pain resulting from oral ulcers usually lasts for 2 to 4 days and then comes down so that it fades away, but the disease and wound healing usually lasts 7 to 9 days. Herpes gingivostomatitis usually improves by itself, but because it is one of the diseases that cause severe discomfort, insomnia, loss of appetite, unrest, fever, chills, nausea, irritability, malaise and headache [6-9], it may be of concern to parents. Parents should be aware and sure after the period of the disease, the child will be recovering without any complication.

Complications

In some children, gingivostomatitis can also be present at the same time with lips herpes. If a child with herpes put her scratched fingers into her mouth, that fingers may be exposed to the virus and consequently results in finger herpes. If the herpes virus transmits to any part of the body such as genital areas (very contagious) and eyes) herpes simplex keratitis (it causes a herpes outbreak in that area [10]. Interestingly, herpes simplex keratitis can also cause permanent eye damage, even blindness along with pain and discomfort. Its symptoms include watery, red eyes and sensitivity to light [11]. Children should always wash their hands after touching a cold sore, as the virus can easily spread to the eyes. In the cases of viral infections, the child should be taken to the specialist physician as soon as possible.

Because eating food and even liquids are painful to him, the child usually refuses to eat. This can eventually cause dehydration and loss of appetite which is with dry mouth, dry skin, dizziness, tiredness, and constipation. The child may have a general feeling of being weakness (malaise). Parents also may notice that their child is sleeping more than usual or he is not willing to participate in his usual activities.

Pain and discomfort in the mouth, causes most children don't feel like eat or drink anything. This would result in anorexia and dehydration in the body which consequently, resulting in the child's constipation.

Treatments

- Washing the mouth help in healing wounds in the tongue and mouth, so if the kid is grown up enough and able to do it, he should wash his mouth with medical salt water or diluted mouthwashes.
- If the child has a severe fever, the mother should give her child an antipyretic medicine such as Acetaminophen (oral or rectal) for lowering the fever.
- If antiviral drug Acyclovir [12] is prescribed by a physician in the first three days of illness, it will reduce the swelling of the gums, and also reduces pain and irritation of the mouth, consequently, the baby will be able to eat and drink. If the lip herpes is also existed, rubbing the Calamine D Lotion will dry the wound and improves healing process.
- Baby should be encouraged to drink cold liquids (milk, juice, water). Drinking fluids, even simple water, prevents water loss and helps reduce the fever. If the child is willing to eat, parents can provide him with soft and liquid dishes (porridge, pottage, soup), but he should never be fed by force. The baby will eat the fluid and soft foods better without any fussing.
- To relieve pain, mouthwashes that contain anesthetics such as lidocaine or anesthetic pills should not be used, as it numbs the tongue and mouth, causing the destruction of the mucosa covering of mouth and tongue. If only a spoon of Diphenhydramine syrup [12] is given to the child at night and he swallows it down, it will help him eat more easily, and goes to sleep well.

Home treatments include the following:

- Taking of over-the-counter analgesics such as acetaminophen and Ibuprofen.
- Application of local topical anesthetics (Orajel, Anbesol), topical preparations containing glycerin and peroxide (Gly-Oxide) [12].
- Gargling warm mouth rinses containing 1 tsp. baking soda or salt to 1/2 cup warm water. If younger children are unable to use the mouthwash, it is recommended to apply Chlorhexidine dental gel as the substitute for toothpaste as an adjunct to oral hygiene.
- Interestingly, cool liquids such as milkshakes and Ice creams or clear liquids apple juice, ice cubes or popsicles, or even soft cold foods for instances applesauce, all help to relieve pain from the mucous membrane.
- Avoid feeding him with acidic or carbonated liquids, and salty, spicy, or even hard foods.
- Follow good oral hygiene habits for the kid, including regular tooth brushing and flossing.

Prevention

- It is obvious that keeping good oral hygiene and care of teeth and gums decrease the risk of getting gingivostomatitis.
- Brushing children's teeth at least twice a day, especially, after eating, and before going to bed has a significant factor to decrease the outbreak of this disease.
- The daily flossing and rinsing mouth with kid's mouthwashes help to maintain the good oral health.
- Children should be examined and cleaned by a dentist every six months. In case of any dental problem, it should be done.
- In children who use pacifiers, keeping that clean to prevent bacterial growth.
- Avoid children to be kissed or touched the face of a person who is infected.

Teaching the children to wash their hands frequently, is the best way to avoid the transmission of the Coxsackie virus. This is an important factor that mothers have to pay attention to that especially after using public bathrooms or changing a baby's diaper; or even before eating or preparing meals. Educating children about the importance of proper hand washing plays a key role in the prevention of this disease.

How is gingivostomatitis diagnosed?

The mouth will be checked for different sores to differentiate that. More tests are not usually necessary but if other symptoms are also present (such as a cough, fever, and muscle pain), the dentist may proceed with additional tests. In some cases, the physician may take a culture (swab) from the sore to check for bacteria or viruses. He may also perform a biopsy if they suspect other mouth sores are present.

"Younger infants with higher residual levels of antibodies would experience milder infections and these would be more likely to go unrecognized or be dismissed as teething difficulty" [4].

Gingivostomatitis has to be differentiated from Herpangina, the disease which commonly causes the ulcers in the oral cavity of children. The etiologic factor of Herpangina is the Coxsackie A virus. In Herpangina, ulcers are usually isolated to the soft palate and anterior pillar of the mouth but in herpetic gingivostomatitis, even though the lesions can be found in these locations, but they are almost always accompanied by widespread ulcerations in the oral cavity [5].

Prognosis and outlook

Despite Gingivostomatitis can be a mildly contagious disease with uncomfortable and painful sores; it usually subsides in two to three weeks. Prescribed medicine may suppress the bacterial and viral activities and resulting in relieving the pain, and improving the healing process. The management of herpetic gingivostomatitis with oral antiviral, especially acyclovir, complementing with other palliative therapies (antipyretic medicine, topical local anesthesia, Antihistamines and...) has demonstrated great results by decreasing the symptomatic period and disappearing the lesions. Home care treatments can also decrease the symptoms.

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