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MANAGEMENT OF VARICELLA ZOSTER IN ADULT PATIENT (Case report)

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ABSTRACT
Background: *Varicella zoster is a self-limiting disease arising from acute primary infection in skin and mucosa. This disease frequently occurs in children. Its emergence in adult patient may aggravate the symptoms.* ***Purpose:*** *To elaborate the management of Varicella zoster in adult patient.* ***Case****: 40 years old female was presented with lips and mouth ulcers for the past two days. Prior to ulceration, itchy watery wheals were manifested on her face and continuously spread to the whole body. Patient confirmed that she experienced this condition for the first time and initially given Acyclovir 400 mg and Paracetamol 500 mg from Community Health Centre healthcare provider. After regularly consuming prescribed drugs for four days, fever and ulcerations had not been subsided.* ***Case management****: Intraoral examination displayed one to two milimetre painful multiple ulcers, yellow in color, with regular margin surrounded by erythema on left upper lip, lower lip, and posterior palatum mucosa. Patient was subsequently prescribed with Acyclovir tablet 800 mg four times a day, Ibuprofen tablet 400 mg three times a day, multivitamin B complex and C caplet once a day and aloevera-containing mouthwash to be applied thrice daily.* ***Conclusion****: Varicella zoster in patients older than thirteen should be given antiviral therapy to prevent future complications.*

Keywords : *Acyclovir, adult patient, management, Varicella zoster*

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BACKGROUND

Varicella zoster or chickenpox is an acute primary infection occurs in skin and mucosa.[1,2] The etiology is Varicella zoster virus, a pathogenic ubiquitous alphaherpesvirus, transmitted through airborne pathway or direct contact with the skin lesions of a sick person.[2,3,4] Varicella zoster virus is a double-stranded DNA virus with under 125,000 base pairs genome containing 68 unique open reading frames. The triggers for viral reactivation include immunosuppression from diseases or drugs, trauma, X-ray irradiation, infection, and malignancy.[1]

Varicella zoster frequently occurs among children under the age of 10. When emerged in adult with immunocompromised condition, it may induce the aggravation of the disease. The incidence are estimated for 2.0 and 4.6 cases per 1000 person-years in Europe.[1,2,4] While previous study in Banjarmasin (South Kalimantan, Indonesia) reveals that oral mucosal infection diseases reached 10.07% in 2014-2017 with Varicella zoster as the highest prevalence disease.[5]

Primary infection of Varicella zoster is typically characterized by fever, constitutional symptoms and vesicular pruritic rash lesions involving the face and trunk. Other manifestations may include hands, feet, and mucosal involvement such as oral cavity, eyes and genital region. The emergence of new lesions such as papules, vesicles, and crust are concurrently happened and persisted for several days. Although usually healed within 7 to 10 days, Varicella zoster can generate more severe conditions in particular cases such as visceral invasion. Complications such as hepatitis, pancreatitis, pneumonitis, and encephalitis are considered to be rare.[4,6] Immunocompromised conditions such as diabetes mellitus, major depression, stressful events, immunosuppressive treatments, HIV infection, lymphoma, leukimia, bone marrow or other organ transplants and systemic lupus erythematosus may jeopardize the reactivation of Varicella zoster virus into Herpes

zoster and foster the development of Post Herpetic Neuralgia (PHN).[2]

Considering oral manifestations as the result of Varicella zoster infection, it is indispensable for dental professionals to comprehend the managements and complications of the disease. This case report aims to elaborate the management of Varicella zoster infection in adult patient.

Case

40 years old female was presented with lips and mouth ulcers for the past two days. Prior to ulceration, itchy watery wheals were manifested on her face and continuously spread to the whole body. This condition occurred for the first time. Patient was initially given Acyclovir 400 mg and Paracetamol 500 mg from Community Health Centre healthcare provider. After regularly consuming the prescribed drugs for four days, fever and ulcerations had not been subsided.

Case Management

Visit 1 (Day 4)

Extraoral examination presented palpable, soft and painful left submandibula gland after assessed through palpation technique. Intraoral examination displayed one to two millimeter painful multiple ulcers, yellow in color, with regular margin surrounded by erythema on left upper lip, lower lip, and posterior palatum mucosa.

Patient was subsequently prescribed with Acyclovir tablet 800 mg four times a day, Ibuprofen tablet 400 mg three times a day, multivitamin B complex and C caplet once a day and aloevera-containing mouthwash to be applied thrice daily after meal. Patient was instructed to obtain proper rest and consume soft moist food high in calories proteins. Follow-up was scheduled for the following week.

Figure 1. Ulcer, solitaire, 2mm in diameter, white-colored, painful,
Surrounded with erythema, regular margin in left upper lip mucosa (personal collection)

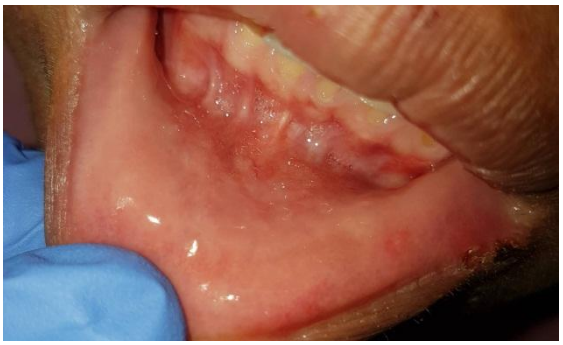

Figure 2. Ulcer, solitaire, 1 mm in diameter, white-colored, painful,
Surrounded with erythema, regular border in left lower lip mucosa (personal collection)

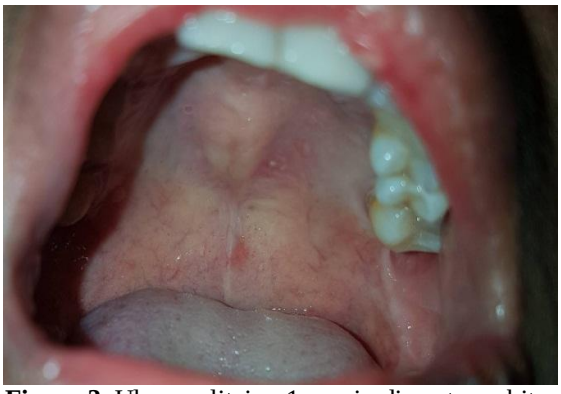

Figure 3. Ulcer, solitaire, 1 mm in diameter, white-colored, painful,
Surrounded with erythema, regular border in posterior palatum (personal collection)

Figure 4. Macules, papules, vesicles, erythemas, 1-4mm in diameter, itchy, dan painful on face, back and hand (personal collection)

Visit 2 (Day 12)

Based on anamnesis result, prescribed drugs were regularly consumed by patient. Fever was subsided since five days ago and ulceration was no longer painful since the past three days.

Two to three milimeteres, itchy and painful multiple vesicles on the upper region of the nose were presented in extraoral examination. Patient was confirmed to be healed as the result of intraoral examination where two milimetres, non-painful, white-colored macules with irregular margin surrounded by erythema was observed in left upper lip mucosa. Posterior palatum displayed one milimetre, non-painful, erythematous macules with irregular margin, while no lesion was presented in lower lip mucosa where normal colored tissue and absence of pain could be observed. Therapy was finished and patient was presented to be healed. Patient was immediately referred to dermatologist to manage her skin wounds.

Figure 5. Macules, white-colored, 2 mm in diameter, irregular margin,
Surrounded with erythema, and non-painful in left upper lip mucosa (Personal collection)

Figure 6. No lesion, normal in color, and non-painful lower lip mucosa (Personal collection)

Figure 7. Macules, erythematous, 1 mm in diameter,
Irregular margin, and non-painful in posterior palatum (personal collection)

Figure 8. Macules and papules, blackish brown, 1-2mm in diameter,
non-itchy, and non-painful on hands and back (personal collection)

Figure 9. Vesicles, multiple, 2-3mm in diameter, itchy, and painful on the upper nose (personal collection)

Discussion

This case presents a 40-years-old female patient who firstly suffered Varicella zoster infection. She already consumed Acyclovir 400 mg thrice daily for three days but her condition had not improved. Patient felt feverish and unwell followed by the emergence of itchy and painful ulcerations with macules, papules and vesicles all over the body.

The severity of Varicella zoster infection varies according to the evolution of immune system. Stronger defense mechanism in adult patients will promote serious complications while mild manifestations are presented in children as the result of weak and underdeveloped immunity. Adult patients possess a well-developed immune system inducing aggressive reaction against viral infection. It enables them to store memory cells better which responsible in producing high amount of immunoglobulins in blood plasma to counteract countless number of microbes. In contrast, children establish less ability in storing immunological memory as their immunity is barely developed against some antigens including Varicella zoster virus.[7]

Varicella zoster virus enters human body via respiratory tract and conjunctiva. It is subsequently inoculated in the upper respiratory system after its initiation in mucosal site.[1] Mucosal dendritic cells have been proposed as the first defense mechanism to encounter this infection which is later assisted by CD4+ T cells from human tonsil. They express the skin-homing markers that allow them to transport virus directly from lymph node to the skin. The release of cytokines and chemokines from inflammatory and non-inflammatory cells can also be stimulated by this infection. After the primary exposure, immune

system will generate adaptive immune response and possibly unable to detect the virus due to the incubation period that extends between 10-21 days before Varicella zoster manifestation.[3,7]

Affected patient was initially prescribed with Acyclovir and Paracetamol for three days yet no improvement was prevailed for the presenting symptoms. Patient was then advised to take Acyclovir tablet 800 mg four times daily as a therapy for seven days. Acyclovir is a guanosine analogue that inhibits the synthesis of viral DNA. Prescribing acyclovir as viral infection treatment can reduce visceral dissemination of the virus.[2,3]

Despite presenting mild, self-limiting and uncomplicated manifestations, early antiviral therapy for Varicella zoster symptoms in healthy children can be authorized to reduce the duration of illness. Infection in individuals older than thirteen is associated with an increased risk of fatal outcome thus oral antiviral therapy is highly recommended for healthy adolescents and adults. Extensive and prolonged viral replication is the sign of severe Varicella infection which often associated with fever and continuous development of new skin vesicles for longer than five days.[3,8]

The treatment guidelines recommend seven to ten days anti-viral therapy within 72 hours of rash onset. However, comparable efficacy can be observed in five days and seven days prescription.[3] Presented in the fourth decade of her life, affected patient is in a greater risk to experience severe symptoms thus seven days prescription for oral Acyclovir is mandatory. Clinical examination revealed the necessity of supportive cares such as the maintenance of adequate fluid and nutrient intake. Non-steroidal antiinflammatory drugs like Ibuprofen is also recommended to vanquish fever and malaise.[8] Furthermore, topical mouthwash containing aloe vera may accelerate ulceration healing process by preventing secondary infection and increasing re-epithelization process.[9]

According to aforementioned condition, comprehending Varicella zoster infection and its potential complications is crucial for dental healthcare providers. This information will enable them to formulate Varicella zoster treatment especially the management of adult patient. It can be concluded that Varicella zoster in patients older than thirteen should be given antiviral therapy to prevent further complications of the disease.

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