CASE REPORT

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COVID-19 and ophthalmic herpes zoster co-infection in immunocompetent patient

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ABSTRACT

Background: Varicella-zoster virus (VZV) is a virus of human neurotropic that remains within ganglionic neurons in a latent state after the primary infection throughout the entire neuroaxis.
Case: A male patient, 32 years old Javanese, consulted from the pulmonary division with complaints of vesicular eruption in the facial area on September 27, 2020. The patient was diagnosed with ophthalmic herpes zoster and a mild COVID-19 infection since 2 days ago and was hospitalized. Management in patients was acyclovir, methylprednisolone, with analgesics and vitamins. COVID-19 as co-infection and other viruses has been known, but infrequently affect the respiratory tract.
Conclusion: Herpes zoster patient should ruled out the COVID-19 and maximize the precaution for personal safety equipment until the SARS-CoV-2 is excluded.

Keywords: COVID-19, herpes zoster, VZV
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INTRODUCTION

VZV is a virus that remain in the ganglionic neurons after the primary infection. This disease is a localized dermatomal disease characterized by unilateral radicular pain and dermatomal vesicular eruptions.[1–3]

The incidence of herpes zoster in the community is around 2-5 per 1000 people in a year.1 Based on data from Sanglah General Hospital, Denpasar, there were 29 new herpes zoster cases during 2019.[4] Coronavirus 2 (SARS-CoV-2) found in December 2019 in Hubei Province of Wuhan City, China as the causative agent of COVID-19 (a severe acute respiratory syndrome). This virus has the characteristics with rapid transmission and high infectivity of the virus caused a pandemic affecting large numbers of people worldwide. Patients suffered with COVID-19 can be without any symptom or may exhibit a variety of mild, moderate, or even severe condition. Various dermatological manifestations have been documented in cases of COVID-19. A maculopapular exanthema, morbilliform, or papulovesicular rash is the most common dermatological finding followed by an urticaria and other skin signs.[5] This case report describe a patient with co-infection of ophthalmic herpes zoster in COVID-19 immunocompetent patient.

CASE DESCRIPTION

A male patient, 32 years old Javanese, consulted from the pulmonary division with complaints of vesicular eruption in the facial area on September 27, 2020. The patient had a childhood history of chickenpox. History opportunistic or recurrent infections, and immunosuppressive agent usage was denied.

Based on the examination, the patient was fully alert. Vestibular disturbance, facial palsy or meningism sign were not found. The patient complained sharp pain on left hemifacial, increasing while hypogeusia and chewing. Visual acuity impairment was denied, however the patient feel photosensitivity. Normal examination was found on fundoscopy. The patient was also diagnosed with a mild COVID-19 infection since 2 days ago and was hospitalized.

Dermatological status in the right ophthalmic region, found efflorescence in the form of multiple vesicles, filled with clear fluid, clustered configuration. (**Figure 1.**) Patient was diagnosed with ophthalmic herpes zoster and mild COVID-19 infection. Management in patients was acyclovir 800 mg tablet every 5 hours intra-orally, methylprednisolone 16 mg every 12 hours intraoral, paracetamol 650 mg every 8 hours intra-oral, vitamins B 1, B 6, B 12 1 tablet every 24 hours, gentamicin ointment 0.1% topical every 12 hours for erosive lesions, open dressing with 0.9% NaCl for 10-15 minutes every 8 hours. The patient had recovered after 1 week of treatment without any sign of herpetic neuralgia. None adverse event or unanticipated event was recorded.

DISCUSSION

VZV reactivation from the latent phase in dorsal-root ganglia or cranial-nerve leads to herpes zoster.

Neural damage along with particular sensory nerve resulted through migration of the virus. Patients may suffering a preparatory itching or stinging sensation and followed by vesicles pustulate. before rash manifestation. Gradually, vesicular rash arises on the affected dermatome.[6] Pain could persist up to a month in the acute phase. Pain also continue more than 90 days after the resolution of the rash in some cases as ad condition called post herpetic neuralgia. Aging is on of the risk factor that crucial for reactivation of HZ. Level of T-cell immunity decreasing after acquiring infection of VZV and lead lower protection against herpes zoster.[7] T-cell level also decreasing in the condition such as lymphoma or HIV infection and consuming immunosuppressive drugs.[8] However, in this case, a young age patient presented with herpes zoster and infected with COVID-19 despite without any factors that influence the immunity status.

Figure 1. Shows the lesion in the form of clustered vesicles and multiple erosions.

The minority cases in COVID-19 manifest with hyperinflammatory states and severe symptoms.[9]

After exposed or infected to foreign microbe, receptors activated on the host immune cells lead to a sepsis-like response.[10] A condition occur after that activation within several days called cytokine storm, along with activation of innate immune system and extreme complement activation. Aggressive stimulation and activation lead to aggressive inflammatory response and produce molecular dysregulation. Dysfunction of the cell immune resulted form hyperinflammatory response that continue progressively.[11,12] This condition build the optimal circumstance for recurrence of the herpes zoster. Unlike this case, most of the patients with COVID-19 infection have immunosuppression state but presented with severe symptoms.[13] Herpes zoster reactivation infrequent in the patient with COVID-19, however possible reactivation could arise due to dysregulation of the immune system. Moreover, herpes zoster could also arise in the asymptomatic condition of COVID-19.[14–16] Our patient without any respiratory tract symptoms started to suffer herpes zoster. In this pandemic condition, we believe that patient suffering from herpes zoster warrant the workers in the healthcare facilities to apply maximum equipment of the personal protection and rule out the COVID-19 while handling the patients.

Administration of systemic corticosteroids in HZO cases is still controversial but several studies suggest that administration of steroids in the acute phase of HZO can reduce edema, pain, damage to ganglion and nerve fibers without affecting the production of immunoglobulin G. Corticosteroids, which have a strong anti-inflammatory effect can effectively reduce inflammatory factors such as IL-10 and IL-6, nerve injury reduction, and also promote healing of lesions and improve nerve pain. However, the dosage and duration of use have been controversial among clinicians in recent years.[17]

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CONCLUSION

A case of a middle aged and immunocompetent patient, admitted with COVID-19 condition along with herpes zoster infection.

This case presented the COVID-19 associated with reactivation if VZV in the herpes zoster form. In this pandemic condition. Patient with herpes zoster infection should be tested and rule out the COVID-19 and maximize the precaution for personal safety equipment until the SARS-CoV-2 is excluded.

CONFLICT OF INTEREST

This publication was fully submitted to increase the knowledge regarding herpes zoster in the COVID-19 without any conflict of interest.

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AUTHORS CONTRIBUTION

All authors contributed in the construction and publication of this article.

ETHICS IN PUBLICATION.

The patient received informed consent related to the permission of patient information and picture for publication.

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