A case of herpes zoster duplex unilateralis in an immunocompetent patient

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Summary

Herpes zoster duplex is a rare condition, which simultaneously affects two different noncontiguous dermatomes. Herpes zoster duplex unilateralis affects two noncontiguous dermatomes and presents on one side of the body, while herpes zoster duplex bilateralis - on both sides of the body. Usually, the presentation of herpes zoster duplex is usually associated with immunodeficiency. In this article, we report a case of herpes zoster duplex unilateralis occured in an immunocompetent man. A 70-year-old man presented with painful erythematous grouped vesicles on his left trunk and left buttock.

Keywords: Herpes zoster duplex, clinical report, immunocompetent.

I. BACKGROUND

Herpes zoster (HZ) duplex is a very rare phenomenon, with an incidence of less than 0.1% of all HZ cases[11]. Risk factor for developing HZ duplex is immunodeficient condition (e.g. HIV individuals or those using immunosuppressive medications)[6, 10]. Primary VZV infection induces VZV-specific antibodies and VZV-specific T cell-mediated immunity[13]. When the immune system weakens, due to aging, HIV/AIDS, radiotherapy or malignancy, the virus reactivation starts and causes herpes zoster[8]. However, it can also occur in immunocompetent hosts. Herein, we present a case of herpes zoster duplex unilateralis in an immunocompetent patient.

II. CASE PRESENTATION

A 70-year-old man presented with a 5-day history of vesicular eruption on erythematous base over left side of the trunk and a similar eruption on left buttock. Earlier that day, he felt dull, persistent pain in the affected area, with no lymphadenopathies, fever or headache. Three days later, disseminated satellite lesions appeared on the face, lesions on the left trunk and buttock evolved into pustules [Figure 1-2]. The patient was treated with antihistamines for 3 days however there was no response, which caused him to seek medical attention. He has a history of hypertension, diabetes type II and dyslipidemia. He had no risk factors for HIV, no prior diagnosis of herpes virus infection, and had not received the VZV-vaccine.

On physical examination, groups of vesicles and pustules, some had crusted, on erythematous base were noted on the left thoracic area T4-T5 and those on left buttock spreading to the inner left thigh [Figure 1]. The patient described his pain as burning intermittent pain, which was estimated 5 on a 1-10 Likert scale. VZV polymerase chain reaction from blood was positive. Examination for immunodeficiency, such as HIV antibody, was negative. Patient's complete blood cell count and serum creatinine level were normal, CRP, AST and ALT were higher than normal: 10.7mg/l, 41.1U/l and 57.5 U/l, respectively.

A course of oral acyclovir 800mg five times a day for seven days, cefixime 200mg twice a day for seven days and other symptomatic management, including pregabalin 300mg twice a day, as well as

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wet dressing with diluted solution of potassium permanganate twice a day to vesicles and pustules, then topical Fucidin to crusts were administered. New solitary vesicles and erosions developed on the penis on the third day of treatment [Figure 2]. After seven days of treatment, all of the lesions became dry and formed discrete crusts, and pain intensity was also reduced to 2 points on a 0-10 Likert scale. Additional follow-up was recommended after discharge.

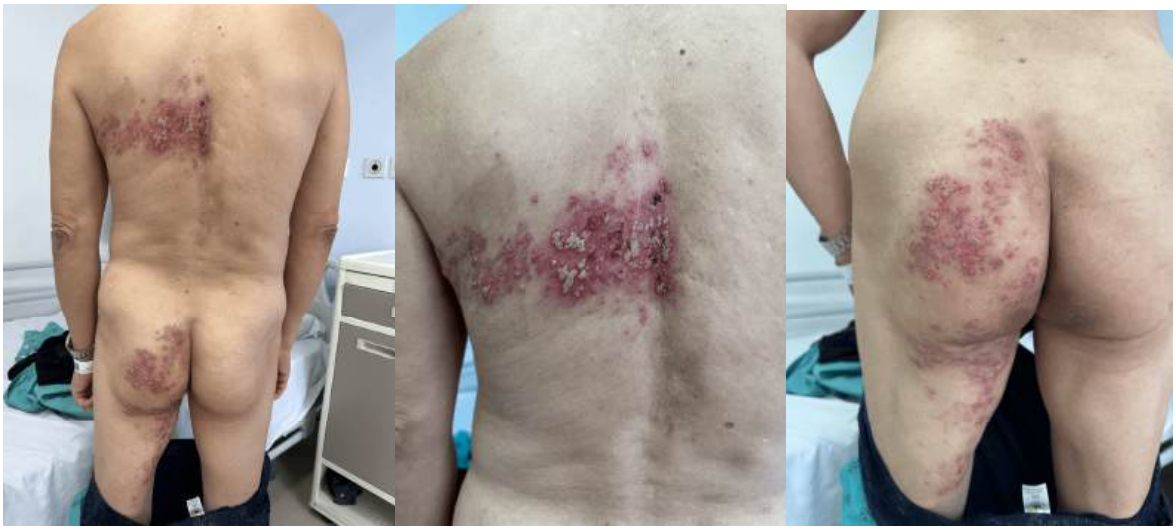

Figure 1. Grouped vesicular and pustular eruption in the left thoracic area T4-T5 and those on the left buttock spreading to the inner left thigh.

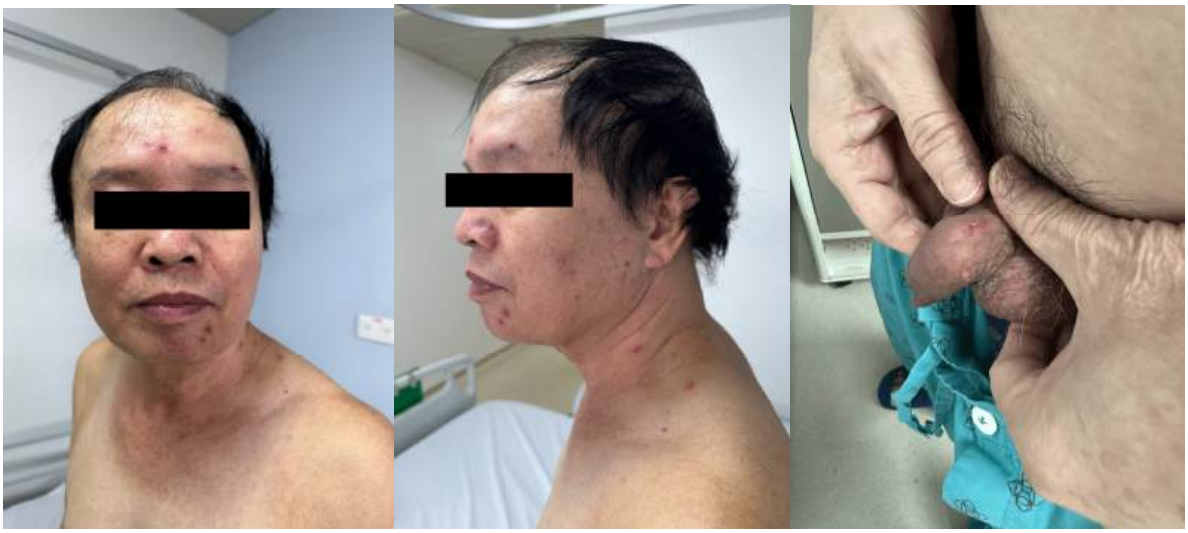

Figure 2. Satellite lesions on the face and penis

III. DISCUSSION

Herpes zoster is caused by reactivation of VZV, usually restricted to one dermatome and presented with unilateral pain and vesicular eruption. The reason why reactivation of VZV only occurs in a single dermatome is probably due to effects of the highest viral genome load on a specific dermatome and prevention of VZV spread by the immune system[9]. As a result, simultaneously reactivation of multiple dermatomes is involved in cases of systemic immunosuppression. The pathogenesis of satellite lesions remains unclear[4]. Hence, multidermatomal HZ occurs in the absence of an

immunodeficient state is considered a rare phenomenon.

In this case report, the diagnosis was supported by clinical pictures and positive results from VZV polymerase chain reaction. Although this patient did not have a severe immunodeficiency condition such as HIV or use of immunosuppressive drugs, there are still risk factors for herpes zoster duplex of this case to occur, which are age and comorbidities. Older age is a major risk factor for both herpes zoster and herpes zoster duplex. Wei Li et al (2017) found that absolute numbers of CD3+ and CD8+ were lower by age, increasing risk of having HZ in the elderly[12]. Our patient is 70-years-old and, as known, the incidence of HZ increases with increasing age; most patients suffering from HZ are > 50 years old[2].

Besides, the male patient had a history of hypertension, diabetes type II and dyslipidemia. We speculate that it could lead to defective cellular immune response, allowing the development of zoster duplex unilateralis[13]. Feng Zhang and Jin Zhou (2015) analyzed 36 cases with herpes zoster duplex, in which 16 cases (44.4%) involve individuals ≥ 50 years of age, and 17 cases (47.2%) - individuals with immunocompromised states[5]. Also according to this study, 24 cases (66.7%) were from Asia[5]. This patient was also an Asian. Almuneef et al (2004) reported that Asian individuals are more susceptible to VZV, while East Asians are more susceptible to other viruses including Epstein-Barr virus and hepatitis B[7]. VZV-IgG was observed lower in sera in healthy Asian individuals than of those residing in other regions[1]. The highest number of HZ duplex patients was observed in Asia, suggesting a genetic susceptibility for developing HZ duplex. It seems that HZ duplex is not a risk factor for poor prognosis and postherpetic neuralgia[3]. The patient got a good response to antiviral agent, pain management, and care of the skin lesions. After 7 days, all of the lesions became dry and formed crusts. He had almost no pain left. Once again, treatment effectiveness confirmed our diagnosis of herpes zoster.

IV. CONCLUSION

In conclusion, herpes zoster duplex uniteralis and bilateralis is a rare phenomenon. This condition is more common in immunocompromised individuals. Certainly, if a patient is presenting with herpes zoster duplex, additional examinations are needed to be done to exclude immunodeficiency. However, herpes zoster duplex can be presented in immunocompetent patients. The sooner the treatment is administered the better the prognosis. The treatment was the same as for the more common form of herpes zoster, which included an antiviral agent, pain management, and care of the skin lesions. The patient's skin lesions and pain subsided without any complications.

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