

Herpes zoster of orofacial region

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Abstract

Herpes zoster (HZ) is a viral disease which is primarily caused by the nerve tissue, but its treatment necessitates a multidisciplinary approach. Varicella zoster virus (VZV) is a DNA virus that causes both primary and recurrent infection. HZ, also known as shingles, is a unique condition induced by VZV reactivation. Neuropathic pain, headache, malaise and sleep disruption are all prodromal symptoms in such cases. HZ generates a pruritic, localized and vesicular rash that is usually unilateral. Individuals who are immunocompromised as a result of disease or receiving any treatment are also at increased risk, regardless of their age. HZ and its sequelae set a major strain on patient's caregivers, health-care system and business. Despite recent advances, prevention and treatment of HZ, consequences remain a therapeutic challenge. This is a case report of HZ infection in a 56-year-old female patient who was managed with comprehensive medical treatment.

Keywords: Herpes, postherpetic neuralgia, Ramsay–Hunt syndrome, trigeminal

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INTRODUCTION

Varicella-zoster is a double-stranded DNA virus belongs to the family *herpes viridae*.^[1] It is a unique virus that produces two distinct clinical entities: Chicken pox (varicella) and shingles (herpes zoster [HZ]).^[2] Primary varicella infection is often a self-limiting pediatric condition that produces a generalized symptomatic maculopapular rash on the skin, malaise, fever and minor lesions throughout the oral cavity.^[3] The rash appears first on the chest, back and face and then spreads over the entire body.^[4] This infection is established when the virus in the respiratory droplets or vesicular fluid from an infected person comes in contact with the mucosa of respiratory tract of an unaffected person.^[5] Since the introduction of varicella immunization in 1995, the number of cases have been declined.^[6] People

who suffered from chickenpox are at a higher risk for shingles later in life, which occurs when the varicella zoster virus (VZV) is reactivated. Garland and Hope-Simpson were the first ones to propose that the reactivation of latent varicella virus resulted in HZ infection.^[7]

HZ, or shingles, is the painful eruption of a rash, usually unilateral, caused by the VZV.^[8] VZV usually persists asymptotically in the dorsal root ganglia of the patient who had chickenpox, reactivating from its dormant state in about 25% of the people which travel along the sensory nerve fibers and cause vesicular lesions in the dermatome supplied by that nerve (most commonly those of dermatomes the third thoracic spine vertebrae-T3 to third lumbar spine vertebrae-L3).^[9] HZ is more common in people with diminished cell-mediated immunity. This

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includes elderly people, patients with lymphoma, HIV or those receiving chemotherapy or steroids.^[10]

A special form of zoster infection of the geniculate ganglion, with the involvement of the external ear and oral mucosa, has been termed Hunt's syndrome first described in 1907 by James Ramsay–Hunt.^[11] It manifests as facial paralysis as well as pain in the external auditory meatus and pinna of the ear. In addition, vesicular eruptions occur in the oral cavity and oropharynx with hoarseness, tinnitus, vertigo and occasional other disturbances.^[12] When the glossopharyngeal ganglion is damaged, lesions are seen on the posterior one third of the tongue, uvula and posterior mouth along with pharyngeal pain. It can also involve the vagus nerve, which is the tenth cranial nerve leading to paralysis of the pharynx, larynx and blisters on the base of the tongue.^[13]

Other rare complications include encephalitis, myelitis, retinitis and hemiparesis all of which are more common in immunocompromised patients.^[12,13]

The diagnosis of HZ often can be made from the clinical presentation of unilateral lesions along the dermatomes of the peripheral nerves which is pathognomonic for the infection.^[14]

When the classical distribution of lesions is not present, as seen with immunocompromised patients, subsequently laboratory techniques may be diagnostically helpful like cytologic smear, culture, direct immunofluorescent antibody and serology.^[15,16]

Here, we present a case report of HZ infection in middle-aged female patient.

CASE REPORT

A 56-year-old female patient reported to the department of oral medicine and radiology with painful and multiple blisters on the right side of the face for 1 week. She experienced weakness for the past 10 days, as well as itching and redness on the right side of the face. The patient also noted intraoral painful fluid filled vesicles since 1 week which ruptured to form ulcers with fluid discharge. She described pain as gradual in onset, continuous, tingling and pricking, which intensified when exposed to wind and sprinkling water on the face. She took over the counter medication but did not get any relief from the symptoms. She gave a history of fever and malaise which occurred 10 days ago for which she took medication (analgesics).

On extraoral examination, unilateral multiple crops of coalescing vesicles, along with few shallow ulcers and tissue tags were present on the middle and lower 3rd of the right

side of face extending anteriorly from the midline to about 1.5 cm in front of tragus and superiorly involving the right eye up to the angle of the mouth ipsilaterally [Figure 1a].

The lesions followed a dermatomal pattern with irregular borders having erythematous erosive areas and fluid discharge. It was tender on palpation with a rough surface texture with purulent discharge on provocation. Intraoral examination revealed unilateral multiple crops of coalescing vesicles and ulcers on the right side of the tongue, alveolar mucosa and palate extending anteriorly from the labial and palatal region [Figure 1b].

On palpation, it was tender and soft in consistency with a rough surface texture. Based upon the history and clinical findings, provisional diagnosis of acute vesiculobullous lesion involving the right side of the face was given, with a differential diagnosis of HZ infection, Ramsay–Hunt syndrome and erythema multiforme were also considered. Exfoliative cytology was done which was sent for cytopathological examination (hematoxylin and eosin stain, ×10), which revealed acantholysis with formation of numerous free floating Tzanck cells, which exhibit nuclear margination of chromatin and occasional multinucleation.

All the hematological investigations were within the normal limits except erythrocyte sedimentation rate which was raised up to 38 mm/h. Based upon the history, clinical examination, and investigations, a final diagnosis of HZ infection of the right side of the face involving the maxillary and mandibular branch of the trigeminal nerve was given. The patient was advised bland diet, and adequate hydration, along with tablet acyclovir (800 mg) five times daily for 5 days, tablet prednisolone (5 mg) three times daily for 5 days, tablet paracetamol (650 mg) three times daily for 5 days and topical application of calamine lotion on facial



Figure 1: (a) Multiple fluid filled vesicles in clusters on the middle and lower third of right-side face. (b) Unilateral multiple crops of coalescing vesicles and ulcers on right side of the tongue, alveolar and buccal mucosa and palate

lesions 4–5 times daily. The patient was recalled after 5 days. On the first follow-up visit, the pain subsided partially and the extraoral and intraoral lesions showed marked healing along with the formation of dry scabs on the extraoral lesions [Figure 2].

The patient was asked to continue the medications for a period of 5 days with a tapering dose.

DISCUSSION

Varicella-zoster virus comes under α -herpes virus which is a DNA virus causing primary infection varicella (chicken pox). The virus becomes latent, in the dorsal root ganglia or ganglia of the cranial nerve causing HZ on reactivation.^[17]

HIV-infected patients show up to 15 times higher incidence of HZ and 25% of Hodgkin's lymphomas patients contract HZ infection in the course of the disease.^[18] An Indian study revealed a higher incidence of HZ in the younger population of 31–40 years (24%) and 21–30 years (19%). However, Goh *et al.* found the mean age of patients with HZ in their study to be 48.8 years with sex ratio of 1:1.^[19] Another study by Brănișteanu *et al.* showed 35% of patients with HZ to be in the age group of 70–80 years and female/male ratio of 1.22:1.^[20]

The most distressing complication of zoster is postherpetic neuralgia, probably caused by fibrosis in and around the sensory nerves and ganglia.^[21]

Other rare complications include encephalitis, myelitis, retinitis and hemiparesis all of which are more common in immunocompromised patients.^[22]

When the classical distribution of lesions is not present, as often occurs in immunocompromised patients, then



Figure 2: (a) Posttreatment photograph showing healing of lesion with formation of dry scab. (b) Posttreatment intraoral radiograph showing complete healing of ulcer on tongue, alveolar and buccal mucosa and palate

the laboratory techniques may be diagnostically helpful such as cytologic smear, culture, direct immunofluorescent antibody, serology – polymerase chain reaction of vesicle fluid may be of assistance.^[15,16]

Recommended therapy for HZ should include (i) patient isolation, (ii) local management of skin lesions, (iii) control and elimination of pain, (iv) limitation of the extent, duration, and severity of the disease with antiviral agents and (v) treatment of post herpetic neuralgia.^[23]

Nowadays, HZ is usually treated with orally administered acyclovir. Other antiviral medications include famciclovir and valacyclovir. The antiviral medications are most effective when started within 72 h after the onset of the rash.^[22,23]

According to a clinical review on HZ, the drugs used were: *Acyclovir* 200 mg five times daily for 7–10 days, *Famciclovir* 750 mg daily or 250 mg three times daily for 7 days, *Valacyclovir* 1 g three times daily for 7 days, *Brivudin* 125 mg daily for 7 days. All of these reduce acute pain and development of postherpetic neuralgia. The addition of oral prednisolone to acyclovir treatment has been shown to reduce pain, increase healing of lesions, and enable a more rapid return to daily activities.^[18] *Tricyclic antidepressants* have been widely used in the management of chronic neuropathic pain conditions. The use in the acute phase of HZ in elderly patients has been evaluated in a randomized placebo-controlled trial of amitriptyline. A reduction in the prevalence of postherpetic neuralgia at 6 months was reported in the amitriptyline treated group.^[23]

CONCLUSION

As the development of HZ is normally suppressed by the immune system, reactivation tends to occur in people whose immunity is weakened, such as older or immunocompromised individuals. The diagnosis of HZ often can be made from the clinical presentation of unilateral lesions along the dermatomes of the peripheral nerves which is pathognomonic for the infection early management with antiviral and analgesics is important and may reduce the incidence of postherpetic neuralgia. Preventing HZ with vaccination is the best way to avoid postherpetic neuralgia and other complications.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient (s) has/have given his/her/their consent for his/her/their images and

other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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