Herpes Zoster: Report of a Treated Case with Review of Literature

K Srikrishna, MPV Prabhat, Praveen Kumar Balmuri, S Sudhakar, D Ramaraju

ABSTRACT

Herpes zoster is a localized, generally painful cutaneous eruption that occurs most frequently among older adults and immunocompromized persons. It is caused by reactivation of latent varicella zoster virus (VZV). Approximately one in three persons will develop zoster during their lifetime. A common complication of zoster is postherpetic neuralgia (PHN), a chronic, often debilitating pain condition that can last months or even years. The risk for PHN in patients with zoster is 10 to 18%. Approximately 3% of patients with zoster are hospitalized. Death attributable to zoster are common among immunocompromized persons. Prompt treatment with the oral antiviral agents, corticosteroids and analgesics decreases the severity and duration of acute pain from zoster. This article reviews herpes zoster and reports one such case, which was treated successfully without any complications.

Keywords: Herpes zoster, Varicella zoster, Shingles, Post herpetic neuralgia, Acyclovir, Corticosteroids.

INTRODUCTION

Herpes zoster (HZ) also known as shingles, is an acute viral infection results from the reactivation of the DNA virus varicella zoster (VZV), which causes chickenpox. It manifests as a painful vesicular rash which runs its course in a matter of 4 to 5 weeks. The pain may persist for months, even years, after the skin heals. This phenomenon is known as postherpetic neuralgia (PHN). Herpes zoster can affect any of the three trigeminal branches, most commonly affecting the ophthalmic branch. The involvement of maxillary and mandibular branches without the involvement of ophthalmic branch is comparatively rare, which accounts for 1.7% of total cases of herpes zoster. The aim of this article is to report one such rare case along with the review of herpes zoster.

CASE REPORT

A 49-year-old male patient reported to the department of oral medicine and radiology complaining of painful blisters over the left side of face since 3 days. The patient gave history of pain which was severe, continuous, radiating in nature and was associated with low-grade fever since 5 days. After 1 or 2 days, patient developed fluid-filled blisters over the left side of face. The blisters were initially small in size and few in number, later they increased in number by almost involving the entire left half of the face. The blisters were associated with watery discharge. Patient was not able to eat food and also not cleaning the mouth since 3 days. No relevant medical, dental and family history was reported by the patient. He had the habit of chewing areca nut in the form of gutkha for the past 20 years with a frequency of 15 packets per day.

On general physical examination, the patient was found to be moderately built and nourished. No abnormality was detected IRT gait, nails, upper and lower limbs. No clinical signs of pallor, icterus, clubbing, cyanosis, edema and lymphadenopathy were present. On assessment of vital signs, temperature was noted to be 100°F and blood pressure 150/90 mm Hg.

On extraoral examination, the patient had mesocephalic head (Fig. 1). No abnormality detected IRT eyes, nose, TMJ, salivary glands, paranasal sinuses. Numerous vesicles were present on the left preauricular, auricular and scalp of the temple region along with scar tissue in some areas (Fig. 2). Clusters of vesicles were also seen in left lower one-third of face, especially in the left perioral region with yellowish discharge (Figs 3 and 4). The skin was appearing swollen, shiny and the involved areas were very tender on palpation.

On intraoral examination, left half of the lower lip was swollen, with few crustated areas. Multiple ulcers were seen on left buccal and lower labial mucosa, left retromolar area, left half of soft palate and on
the left lateral border of tongue extending up to ventral surface (Figs 5 and 6). The ulcers were irregular in shape measuring approximately 10 × 5 mm in size with erythematous margins and sloping edges. The floor of the ulcer showed yellowish white slough. The ulcers were tender on palpation. No induration was noted. Fibrous bands were palpable bilaterally on buccal mucosa. The oral hygiene status of the patient was poor and was having many periodontally compromised teeth.

Based on history, clinical findings, a provisional diagnosis of herpes zoster on left side of face involving 2nd and 3rd branches of trigeminal nerve, chronic generalized periodontitis and oral submucous fibrosis were considered.

Patient was subjected for routine hematological and serological investigations. Complete blood picture was found to be within satisfactory limits except ESR, which was slightly raised to 15 mm/1st hour. Cytological examination was performed after taking smear from the lesions present over left lower 1/3rd of face extraorally and left buccal mucosa intraorally. It revealed acantholytic cells with few exfoliated squamous cells and inflammatory cells (Fig. 7). Upon correlating with the history, clinical findings and cytological examination the final diagnosis of herpes zoster was given.

The patient was then admitted in the hospital under physician’s opinion and was given hydration, supportive and proper management. To start with, the patient was given intravenous ringer lactate and dextrose normal saline (DNS). Antiviral therapy was started with acyclovir 800 mg tablets 5 times per day for 10 days. Corticosteroids are given in the form of prednisolone 20 mg, twice daily. For pain control patient advised to take paracetamol 500 mg tablets thrice daily. Betadine mouth wash was also given to improve oral hygiene. The patient was reviewed regularly.

On examination of the patient after 1 week, there was regression in the number of extraoral and intraoral lesions with formation of scar tissue and hypopigmented areas.

Fig. 2: Vesicles present over the auricular and scalp of the temple region

Fig. 3: Vesicles present over the left lower 1/3rd of face

Fig. 4: Unilateral distribution of lesions

Fig. 5: Lesions present over the left buccal mucosa, left half of the lip
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HZ is characterized by inflammation of dorsal root ganglia or extramedullary cranial nerve ganglia, associated with vesicular eruptions of the skin or mucous membrane in an area supplied by the affected nerve.\(^1\) The most commonly affected dermatomes are the thoracic (45%), cervical (23%) and trigeminal (15%). The nerves most commonly affected in HZ are C3, T5, L1, L2 and the first division of the trigeminal nerve. The incidence of HZ increases with age or immunosuppression. The predisposing factors for reactivation of the virus are trauma, benign or malignant tumor involving the dorsal root ganglia, local X-ray irradiation and immunosuppressive therapy.\(^4,5\)

Patients with HZ may progress through three stages: Prodromal stage, active or acute stage and chronic stage.\(^6,7\) The prodromal stage presents as sensations like burning, tingling, itching, pricking and boring, occurring in cutaneous respectively (Figs 8 and 9). No fresh vesicles were found. The dose of the prednisolone was tapered to 10 mg. The patient was then discharged and recalled after 1 week. The patient was again reviewed after 2 weeks. On examination tremendous improvement was noticed both extraorally and intraorally regarding the herpes zoster lesions. Few pigmented areas were present over the skin corresponding to the previous lesions. Patient was asked to taper the dose of corticosteroids gradually and finally all the medications were stopped. The patient was further reviewed and treated for oral submucous fibrosis by using the combination of corticosteroids and hyaluronic acid intralesionally.

**REVIEW**

Herpes zoster (HZ) is the reactivated form of the varicella zoster virus (VZV). It is commonly known as Shingles, derived from the Latin word *cingulum*, meaning ‘girdle’. This is because a common presentation of herpes zoster involves unilateral rash that can wrap around the waist or chest, like a girdle. Similarly, the name zoster is derived from Greek word referring to a belt-like binding structure used by warriors to secure armor.\(^2\)
distribution of the dermatome and is believed to represent viral degeneration of nerve fibrils. During this period, if branches of the trigeminal nerve are affected, odontalgia may occur. In this condition, the reactivated virus may travel along the length of the nerve, infect the pulp vasculature which leads to infarction and necrosis of pulp.  

The symptoms of the prodromal stage may present up to 1 month or for more duration before the acute mucocutaneous lesions appear, posing diagnostic difficulties to the clinician. This is known as zoster sine herpete or zoster sine eruptione. The active stage is characterized by the emergence of the rash which is usually accompanied by systemic upset. The characteristic skin rash progresses from erythematous and edematous papules to vesicles and finally results in the formation of pustules within 1 to 7 days. Later the lesions may dry to form crusting, which will be exfoliated over 2 to 3 weeks leaving erythematous macules that may form scar. It may take several weeks for the skin to become normal. During the active phase the HZ will be most contagious and could pose a significant cross infection risk. A child without prior contact with VZV can develop chickenpox after contact with an individual with HZ. The chronic stage is seen in approximately 10% of all patients with HZ, and is termed as postherpetic neuralgia (PHN). It is defined as a brief, recurrent, shooting, deep pain remaining for over a month or 3 months after the healing of the mucocutaneous lesions. It may persist for years and is a significant cause of morbidity. Risk of occurrence of postherpetic neuralgia increases significantly after the age of 60 years, which may be due to the decline in cell-mediated immunity. Although postherpetic neuralgia is the most common complication of HZ, other complications like acute retinal necrosis, encephalitis, myelitis, peripheral nerve palsies, contralateral hemiparesis can occur. Immuno-compromised individuals with HZ exhibit a significantly higher rate of complications. Periapical lesions, root resorption, tooth exfoliation and alveolar osteonecrosis have also been reported in association with HZ infection.  

If the geniculate ganglion is involved, it may result in James Ramsay Hunt’s syndrome, which includes facial paralysis, painful vesicular eruptions of external auditory meatus and pinna of the ear. HZ may also occasionally affect motor nerves. HZ of the sacral region may cause paralysis of the bladder. The ophthalmic branch is affected several times more frequently than the second or third divisions. Lesions affecting ophthalmic nerve usually involve lacrimal glands, conjunctiva, upper eyelid, forehead, scalp and root, lower half of the nose. HZ of the first division can lead to blindness secondary to corneal scarring, which is known as herpes zoster ophthalmicus.  

Facial and intraoral lesions are characteristic of HZ involving the second and third divisions of the trigeminal nerve. Lesions affecting maxillary nerve involve mid face, scalp on the anterior part of the temporal region, lower eye lid, upper lip and lateral side of the nose. Lesions affecting the mandibular nerve involve lower face, tongue and lower lip.  

The history and clinical examination largely lead to the diagnosis, however for the confirmation, patients can be subjected for investigations like viral culture, antigen detection test by using modified Tzanck technique, Serological test via ELISA or latex agglutination, Polymerase chain reaction (PCR). PCR is useful to detect VZV DNA in body fluids, even when the patient is not having active infection.  

In majority of the patients herpes zoster is a self-limiting condition and healing is usually complete. However, the active management is indicated as follows:  
• To reduce the acute symptoms of pain and malaise,  
• To limit the spread and duration of the skin lesions and  
• To prevent the development of postherpetic neuralgia and ophthalmological complications in herpes zoster ophthalmicus.  

Early diagnosis and prompt treatment of the disease in the prodromal phase by the use of antiviral agents should be the mainstay of its management.  

To start with, the patient should be isolated to prevent the transmission of the virus to healthy individuals. Keep the cutaneous lesions clean and dry to reduce the risk for bacterial superinfection. The lesions should be protected with sterile, occlusive, nonadherent dressing and patient is instructed to wear loose fitting clothes for their comfort. If patient is not able to take proper diet, then he or she should be kept on intravenous fluids. Antiviral therapy (Table 1) has been shown to be very much beneficial in decreasing the duration of viral shedding, new lesion formation, severity of pain and accelerating the events of cutaneous healing. However, these benefits have only been demonstrated in patients who received antiviral agents within 72 hours after the onset of the rash. For effective pain control short acting narcotic analgesics such as oxycodone can also be given.

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<th>Table 1: Antiviral therapy for herpes zoster</th>
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<td>Medication</td>
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Orally administered corticosteroids are commonly used in the treatment of herpes zoster, even though clinical trials have shown variable results. Corticosteroids thought to decrease the degree of neuritis caused by active infection, resulting in the reduction of the residual damage to affected nerves. Prednisolone used in conjunction with acyclovir has been shown to reduce the pain associated with herpes zoster. Oral corticosteroids can be used as 10 to 14 days tapering course of prednisolone, starting at 60 mg daily.

CONCLUSION

Herpes zoster of the trigeminal nerve is a disease that falls within the diagnostic purview of all dental specialists. A thorough knowledge of this disease will help in early diagnosis and prevents delayed treatment for the patient thus reducing the complications.

REFERENCES


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