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Research Article

Herpes Zoster in Al-Baha Region (Saudi Arabia): Clinical Presentation and Management

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Abstract

Background: Primary infection with Varicella zoster virus (VZV) causes chickenpox. Herpes zoster (HZ), also called shingles, appears from the reactivation of the latent virus infection. The virus can be reactivated after many years and results in HZ in dermatomal distribution. Several factors can contribute to the risk factor such as anxiety, diabetes mellitus, and immunosuppression for reactivation. HZ is characterized by unilateral severe pain and multiple vesicles that is generally followed by the dermatome innervated by the involved ganglion. In immune-compromised individuals, disseminated zoster might develop.

Materials and Methods: The aim of this study is to identify the clinical presentation of HZ and its management. A total of 125 cases of HZ were seen during the study period in the dermatology clinic at King Fahd Hospital from 2014 to 2018. All cases were diagnosed based on the classical morphological presentation. Analysis of the following parameters was applied: age, sex, symptoms, affected dermatome, association, and treatment.

Results: Of the 12600 new cases seen in the dermatology clinic over 4 years, 125 were HZ with an occurrence of 0.99%. Male to female ratio was 1.5:1 and the age ranged from 3 weeks to 98 years. The thoracic dermatomes were the most commonly involved. The most frequent coexisting disease was diabetes mellitus and the most common complication of HZ was Post herpetic neuralgia (PHN).

Conclusion: The occurrence of HZ is 0.99% in patients reporting to the dermatology clinic of the hospital. Males were slightly more affected than females. The thoracic dermatomes followed by lumbosacral are the most frequently involved.

Keywords: *Herpes Zoster; Shingles; Varicella Zoster; Thoracic Dermatomes; Postherpetic Neuralgia*

Introduction

Varicella and herpes zoster are caused by human herpes virus 3 (also called Varicella zoster virus "VZV"). Primary infection with VZV causes chickenpox. Herpes zoster (shingles) develops from reactivation of the latent VZV infection [1]. VZV remains latent in human nerve tissue and reactivates in 15% to 30% of the infected persons during their lifetime leading to herpes zoster [2]. The likelihood of HZ increases in old patients especially after the age of 50 and is more common among immunosuppressed persons and among children with a history of intrauterine varicella or varicella occurring within the first year of life; the latter have increased risk of developing shingles at an earlier age [3].

Clinical Presentation

Herpes zoster might begin in some patients with a prodrome (e.g. pain, itching, or tingling) in the affected area. Patient might complain of headache, malaise, or photophobia. These symptoms might arise days or weeks before the appearance of the characteristic rash. In 75% of patients, pain or abnormal sensation might be the first presentation; Pruritus is the most common feature. The rash mainly occurs unilaterally and affects certain dermatomes (thoracic, cervical, and ophthalmic involvement are the most common). The characteristic rash differs from a maculopapular rash to the former comprising clusters of vesicles which ulcerate and crust over in about 7 - 10 days (Figure 1). When the characteristic unilateral dermatomal rash of herpes zoster appears, the differential diagnosis includes herpes simplex virus, contact dermatitis, insect bites, folliculitis, impetigo, candidiasis, and scabies [4]. Healing mainly occurs among 2 - 4 weeks [4].

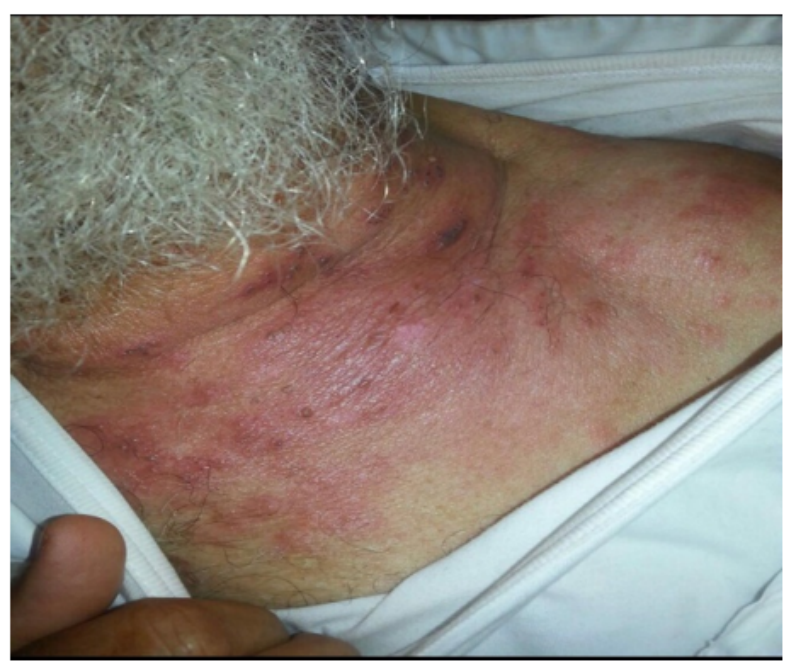

Figure 1: *Disseminated Herpes Zoster in 78 year old patient.*

Diagnosis

Most cases can be diagnosed clinically. For atypical rashes, a biopsy from the base of the lesion after it is unroofed and a direct immunofluorescence assay to detect VZV antigen or a polymerase-chain-reaction (PCR) assay for VZV DNA in cells are performed. In one study, the sensitivity of PCR for detecting VZV DNA was 95% and specificity was 100%, while the values for immunofluorescence testing for VZV antigen were 82% and 76% [5]. VZV might be detected in the saliva of herpes zoster patients [6] but now such testing does not have a demonstrated role in clinical practice. A PCR assay for VZV in the blood or CSF is useful in the diagnosis of zoster sine herpete. A PCR assay of the blood helps in the diagnosis of visceral herpes zoster in immunocompromised patients with hepatitis or pancreatitis without rash [7]. A PCR assay of the cerebrospinal fluid (CSF) is helpful in the diagnosis of central nervous system (CNS) vasculopathy [8].

Complications

Postherpetic neuralgia

It is the most common complication. It increases with age and affects up to 30% of patients with herpes zoster > 80 years of age. It is defined as pain of at least moderate intensity for 3 months or longer. Other definitions and measures of the severity of pain are included in some drug trials [9]. It is characterized by constant, intermittent, or severe burning pain that occurs usually every day.

Ocular involvement

Herpes zoster ophthalmicus occurs in about 10 - 25% of patients. This affects the ophthalmic branch of the trigeminal nerve and results in many complications in the affected eye in a lot of ways. In about two-thirds of patients, keratitis occurs. Moreover, conjunctivitis, uveitis, retinitis, and glaucoma might occur [10].

Ramsay Hunt syndrome and other neurological syndromes

It is a less common manifestation of zoster. It involves the geniculate ganglion of the facial nerve that is manifested as vesicles in the external auditory canal and palate and is associated with loss of taste in the anterior two-thirds of the tongue and facial weakness. Involvement of cerebral arteries might occur, rarely leading to aseptic meningitis, myelitis, peripheral motor neuropathy, cerebellar syndromes, or stroke.

Disseminated zoster

It is defined as twenty lesions or more outside the dermatome which is affected. It occurs only in immunocompromised cases and might be associated with visceral involvement (lungs, liver, gut, and brain).

Bacterial infections

When bacterial superinfection occurs, antibiotics that cover *Staphylococcus aureus* and *Streptococcus pyogenes* should be used as di/flucloxacillin 500 mg every six hours for seven days.

Treatment

Antiviral therapy

It is required in certain non-immunocompromised patients and all immune-compromised patients. The Food and Drug Administration (FDA) approved three guanosine analogues (acyclovir, valacyclovir, and famciclovir) for the treatment of HZ. Varicella zoster virus is less sensitive to acyclovir, valacyclovir, and famciclovir than herpes simplex virus. These antiviral agents help the resolution of lesions, decrease the formation of new lesions, decrease viral shedding, and reduce the acute pain severity [11].

Glucocorticoids

The use of glucocorticoids with antiviral therapy remains controversial for uncomplicated herpes zoster. Glucocorticoid has not been shown to improve the occurrence of postherpetic neuralgia. Because of their immunosuppressive properties, glucocorticoids should not be used for HZ without antiviral therapy. Glucocorticoids are contraindicated in patients with hypertension, diabetes mellitus, peptic ulcer disease, or osteoporosis. It is also used with precautions in the elderly patients as they are at risk for serious adverse events. Prednisone is used for the treatment of certain CNS complications of herpes zoster such as vasculopathy or Bell's palsy in non-immunocompromised patients [12].

Pain management

The treatment of the pain associated with herpes zoster in the acute stage is considered an integral component of management and useful in reducing the incidence and severity of postherpetic neuralgia. This should follow an approach that depends on current Australian guidelines [12].

Pharmacological treatment of postherpetic neuralgia follows a similar approach and might also involve the use of gabapentin or pregabalin and topical capsaicin. Transcutaneous electrical nerve stimulation (TENS) might be important [13].

Prevention

The Advisory Committee on Immunization Practices has recommended the use of a live attenuated HZ vaccine for persons 60 years of age or older to prevent herpes zoster and its complications including postherpetic neuralgia [10,14]. The optimal timing of vaccination after an episode of herpes zoster is uncertain. Because the risk of recurrent herpes zoster after a recent episode of the disease is relatively low [15] and because the cellular immune response to VZV during the first 3 years after vaccination is similar to that after an episode of herpes zoster [16] one might delay vaccination for 3 years in immunocompetent people with a recent history of herpes zoster, given that the diagnosis of herpes zoster has been well documented by a health care practitioner. The vaccine is contraindicated in persons with hematologic cancers, in persons with T-cell immunodeficiency, and in those receiving high-dose immunosuppressive therapies (e.g. ≥ 20 mg of prednisone daily for ≥ 2 weeks or anti-tumor necrosis factor therapy).

Materials and Methods

This is study about clinical symptoms, signs, and complications of 125 shingles patients who were admitted to the dermatology clinic at King Fahd Hospital, KSA, from 2014 to 2018. The diagnosis was made according to the clinical presentation. Clinical criteria include any person with at least one of the following two features: abnormal skin sensations with an acute onset of localized maculopapulovesicular unilateral rash, involving at least one or more dermatome(s) or an acute onset of disseminated maculopapulovesicular rash outside the involvement of solitary dermatome. The following parameters were analyzed: age, sex, symptoms, dermatomal distribution, complications, coexisting diseases, and disease management.

Procedure methodology

After written informed consent was obtained, patients with Herpes Zoster who attended the dermatology clinic of King Fahd Hospital in Al-Baha region between 2014 and 2018 were included in this study.

Statistical analysis

This is a prospective-descriptive study about clinical symptoms, signs, and complications of 125 shingles patients who were admitted to the dermatology clinic at King Fahd Hospital from 2014 to 2018. The diagnosis was made according to the clinical presentation. Clinical criteria include any person with at least one of the following two: abnormal skin sensations with an acute onset of localized maculopapulovesicular unilateral rash, involving at least one or more dermatome(s) or an acute onset of disseminated maculopapulovesicular rash beyond the involvement of one dermatome. The following parameters were analyzed: age, sex, symptoms, dermatomal distribution, complications, coexisting diseases, and disease management.

The collected data were processed using SPSS software (ver. 13).

Results

Of 12600 new cases seen in the dermatology clinic over the 5 years, 125 were with HZ with an occurrence of 0.99%. The male to female ratio was 1.5:1 and the age ranged from 4 months to 90 years. The thoracic dermatomes were the most commonly involved. The most frequent coexisting disease was diabetes mellitus, and the most common complication of HZ was PHN. In 62 (49.6%) patients, skin lesions were preceded by pain for 2 to 12 days with or without burning sensation and/or itching at the affected site. The lesions were vesicles, papules, pustules, on erythematous bases and crusts, or various combinations of the same. The most commonly present lesions were vesicles on erythematous base (92%). The progression from one type of lesion to another (i.e. papule, vesicle, pustule) could not be definitely retrieved. Regarding the distribution of the disease, the right side of the body was involved in 70 (56%) patients, the left side in 50 (40%) patients, 3 (2.4%) patients had bilateral involvement, and 2 (1.6%) patients had disseminated disease. The data of the dermatomal distribution is listed in table 1. The frequencies of affected dermatomes in descending order are as follows: thoracic, 110 (55%); lumbosacral, 41 (20.5%); trigeminal 24 (12%); and cervical 22 (11%). Coexisting diseases, both systemic and cutaneous, were found in 55 (39%) patients.

Dermatome	Patients, n (%)
Thoracic	68 (54.4%)
Lumbosacral	26 (20.8%)
Trigeminal	15 (12%)
Cervical	14 (11.2%)
Disseminated	2 (1.6)

Table 1: *Follow up after 6 weeks.*

Discussion

This study showed an occurrence of 0.99% of HZ among patients reporting to the dermatology clinic of King Fahd Hospital (KFH). Since KFH being the main tertiary referral hospital in the region, the compiled data provides a rough idea about the epidemiology of the disease in Eastern Saudi Arabia. The male to female ratio was 1.5:1 in this study. In our study, more than 95% of patients had positive history of chickenpox. The incidence has been reported to be as high as 50 - 60% among elderly or immunosuppressed patients [17,18].

The dermatomes from T3 to L3 are most commonly involved in HZ [19]. In our study, we found the same result with thoracic, 68 (54.4%); lumbosacral, 26 (20.8%); trigeminal 15 (12%); and cervical 14 (11.2%) cases. Coexisting diseases, both systemic and cutaneous, were found in 28 (22.4%) patients.

Conclusion

The occurrence of HZ is 0.96% in patients reporting to the dermatology clinic of the hospital. Males were slightly more affected than females. The thoracic dermatomes followed by lumbosacral are the most frequently involved. Diabetes mellitus is the most frequent coexisting disease.

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