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Case Report

Simultaneous Occurrence of Herpes Zoster and Chickenpox in a Patient - A Case Report

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Abstract:

Varicella zoster virus (VZV) infection primarily causes varicella or chickenpox. Herpes zoster (HZ) or shingles is the manifestation due to reactivation of same virus. Simultaneous occurrence of HZ and Chickenpox in a patient is an uncommon event. A 14 years old apparently healthy girl came to the medicine outpatient department of Pirojpur District Hospital with the complaints of burning pain in the right side of forehead followed by maculopapular rash and blister lesion with painful right red eye. The lesions were anatomically distributed along the dermatome of right sided ophthalmic division of trigeminal nerve. Simultaneously she developed some small vesicular lesion in her trunk. At that time she had fever, bodyache and malaise. The entire lesion was healed with crusting within seven to ten days. She had no significant past history. With a course of antiviral and symptomatic treatment, she recovered without any complication.

Key words: Varicella zoster, Herpes Zoster, Chickenpox.

Introduction:

The VZV which belongs to the herpes virus family, is highly contagious and has a worldwide distribution[1]. VZV is a dermotropic and neurotropic virus that produces primary infection (Chickenpox or varicella) usually in childhood, which persists in latent form in the dorsal root ganglion of sensory nerves and can reactivate (HZ or shingles) in later life. The incubation period of chicken pox is 11-20 days, after which a vesicular eruption begins, often on mucosal surface first, followed by rapid dissemination in a centripetal distribution. The rash progresses from small pink macules to vesicles and pustules within 24 hours. Secondary bacterial infection is the most common complication, self-limiting cerebellar ataxia and encephalitis are rare complications. Diagnosis is primarily clinical. If necessary this can be confirmed by detection of antigen or DNA of aspirated vesicular fluid. Antivirals are used for uncomplicated chickenpox in adults when patients present within 24-48 hours of onset of vesicles[2]. As reactivation (HZ) of the virus is linked to diminish virus specific immunity, it develops mainly in the elderly and immunocompromised patients[3]. Burning discomfort occurs in the affected dermatome following reactivation and discrete vesicles appear 3-4 days later. Chickenpox may be contracted from a case of shingles but not vice versa. Post herpetic neuralgia causes troublesome persistence of pain for 1-6 months or longer following healing of rash[2]. HZ is treated with antiviral and analgesics. Post herpetic neuralgia requires aggressive analgesia, along with agent such as Tricyclic antidepressants (amitriptyline), gabapentin or pregabalin, and opioids[2,4].

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Case history:

A 14 years old girl hailing from Parerhath, Pirojpur came to the medicine consultant's outpatient department of Pirojpur District Hospital, with the complaints of burning pain in right side of her forehead for 5 days that radiates to right ear and eye. After two days of onset of pain she noticed some blister like lesions surrounded by reddish skin involving right side of her forehead, adjacent scalp, eye lids and upper portion of nose. Right eye was becoming red and more painful.

Fig-1: First visit, Herpes zoster.

Fig-2: Chickenpox in back.

She also noticed some small vesicular lesion surrounded by reddish area in her back, chest and abdomen. During the time of blister appearance she had fever, bodyache, headache and malaise. Subsequently those lesions became darker then crust out within 7-10 days and finally healed with scar. She had no history of contact with chickenpox or HZ patient.

She was non diabetic and no previous history of chickenpox, tuberculosis, prolonged diarrhoea or fever and significant weight loss. She had no history of taking steroid and others offending drugs. No allergic history was present and she was immunised as EPI schedule.

Fig-3: Recovery state of HZ.

On examination, she was not anaemic, temperature was 101^0F, pulse-88b/min, BP 90/60 mm of Hg and no lymphadenopathy was present. There were discrete maculopapular and vesicular lesions with surrounded erythema that was confined along the dermatomal distribution of ophthalmic division of trigeminal nerve of right side. Conjunctiva of right side was congested but there was no impairment of vision. Some isolated vesicular eruption was present in back, chest and abdomen. On follow up examination after 10 days, she was afebrile and there were crust and scale formation in the previous lesions.

On investigation, Haemoglobin 11 gm/dL, White cell count 5400/mm^3, Neutrophil-55%, Lymphocyte-40%, Monocyte-3%, Eosinophil-1%, Basophil-1%. Platelet 280000/mm^3, Random sugar 6.4mmol/L, Serum creatinine 0.8 mg/dl, SGPT 22 IU/L, Urine for routine examination -normal, Chest X-ray-normal.

Patient and her mother were very anxious. Adequate assurance was given. Brief idea of the disease course and management process was explained to them. She was treated at home with acyclovir 800 mg 5 times daily for 7 days and paracetamol and amitriptyline. She was also referred to an ophthalmologist for eye care and that was managed accordingly without any problem. Finally she recovered without significant complication.

Discussion:

Bokay was the first to note the association of VZ and HZ. Since his observation, many such cases have appeared in which varicella had developed in susceptible individuals when exposed to HZ[5].

The mechanism responsible for the simultaneous manifestation of varicella and herpes zoster is not known, however a theory under discussion is that the initial viremia during primary infection may affect the sensory ganglia, with the immediate viral replication inside them, causing cutaneous manifestation and pain in the surrounding dermatomes[6].

Study by Muller BK showed middle aged and old adult with simultaneous occurrence of varicella and HZ[7]. Fleming DM et al[8]. described in chickenpox that maximum affected 0-14 years of age group and there was no gender difference. But in HZ incidence was maximum in 65 years and above and more in female. However our patient experienced co-infection of HZ and VZ at the age of 14 years who was a student of class seven.

Although thoracic dermatomes are most commonly involved, the ophthalmic division of the trigeminal nerve is also frequently affected; vesicle may appear on the cornea and lead to ulceration. This condition leads to blindness and urgent ophthalmopathy review is required[2]. In case of our patient ophthalmic division of trigeminal nerve was involved. There was also vesicle in right eye lid with painful inflammation of cornea and conjunctiva but no vesicle was present in cornea. There was no visual impairment initially and subsequently. She was advised for Ophthalmologist's opinion and that was managed accordingly without any complication.

In chickenpox, vesicular eruption begins often in mucosal surface followed by rapid dissemination in a centripetal distribution, each croup is associated with fever[2]. But no mucosal vesicle was present in our patient. She noticed some vesicles in her chest, abdomen and back associated with fever and bodyache.

A decreased of the specific cell mediated immunity against VZV seems to be the cause of HZ development as a consequence of the VZV reactivation[9]. It could explain the increased risk of suffering HZ in ageing people and specially in people with immunocompromised conditions due to diseases or treatment that alter the immune response (Immunodeficiency disorders and autoimmune disease, HIV, cancer, organ transplantation)[10]. But the girl was apparently healthy. There was no significant medical history and her clinical examination and initial laboratory investigation did not indicate any features of immunosuppression. She recovered very smoothly without any complication with treatment.

The risk for post herpetic neuralgia are older age, female sex, immunocompromised condition, autoimmune diseases, asthma, diabetes, smoker, underweight, obese etc,[11]. Though our patient was a female but she had no complain of post herpetic neuralgia. That may be explained by younger age of patient and absence of any immunocompromised or comorbid condition.

Conclusion:

Simultaneous occurrence of herpes zoster and varicella in a fourteen years old healthy girl is an uncommon event. The girl was recovered very smoothly. Such a coinfection may be difficult to manage. So in case of HZ or chickenpox clinician should examine properly with considering such a possibility. It has been observed that such type of case reports are now raising in medical forum.

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