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General Medicine

SEGMENTAL SPINAL PARESIS - A RARE COMPLICATION OF HERPES ZOSTER INFECTION

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KEYWORDS :

Introduction

Herpes zoster or shingles is acute infectious disease characterized by itching and pain radiating to distribution of cranial or spinal nerve and appearance of vesicular rashes in cutaneous distribution (dermatome) of involved nerve after a few days followed by attenuation of pain and healing of eruption. This process having total course around six to eight weeks and may followed by complication commonly post herpetic neuralgia, scarring and bacterial super infections. Segmental spinal paresis is rare complication characterized by focal, asymmetrical motor weakness involving myotome that corresponds to distribution of dermatomal rash due to spread of infection from dorsal nerve root to anterior horn cell and anterior nerve root.

Case Report

A 50 years old female presented with skin lesion over left upper limb since one and half months and left upper limb weakness since one month. History revealed that she had neck pain radiating to left upper limb one and half months before and she consulted orthopedic doctor, cervical spine x-ray done which revealed only degenerative changes in cervical vertebrae, managed with oral analgesic medications. After four days, she developed red vesicular skin eruption over left arm, forearm and hand and after consulting dermatologist she was diagnosed a case of herpes zoster. She was managed with acyclovir, analgesics, topical steroid and soothing lotion. Approximately one month before she developed left upper limb weakness without involvement of other extremities, slurring of speech or dimness of vision. MRI cervical spine with brain screening revealed Posterior Bulging of C4-5 and C5-6 intervertebral disks and Chronic ischemic changes in bilateral periventricular and fronto-parietal sub cortical white matter.

Due to persistent weakness she approached our hospital. On General Examination, vitals are normal and there were healing herpetic lesions over C5-6 dermatome involving left shoulder, arm, forearm and hand. Neurological examination revealed weakness in left supraspinatous, infraspinatus, deltoid, brachioradialis, biceps and supinator muscles. There was hypotonia, reduced reflexes involving affected muscle and reduced sensation over C5-6 dermatome area. Routine Hematology, Blood sugar, Renal and liver function test with electrolytes, X-ray chest and cervical spine, Hba1c, HIV was normal. Spinal tap revealed sugar 51 mg/dl, Protein 74 mg/dl and total cells 50 cells/µL (100% lymphocytes). Her CD-4 flow-cytometry revealed absolute lymphocytes count 566 cells/µL, absolute CD4 count 175 cells/µL and total percentage of CD4 count was 30.91%. CSF vericella zoster IgM Index was 1.62 (range 0 to 1). So after clinical examination and investigations, she diagnosed as a case of vericella zoster involving C5-6 dermatome complicated by virus induced segmental spinal paralysis.

After establishing diagnosis, injectable acyclovir and dexamethasone given to patient for 5 days, physiotherapy offered in form of assisted active exercise of partially paralyzed muscle and oral Gabapentine with short course of oral acyclovir given to patient on discharge. She started improving and regained considerable power in one month follow-up examination.

Discussion

Herpes zoster is common viral infection having average incidence of 3 to 5 per 1000 population per year with higher rates in elderly. It is characterized clinically by radicular pain, a vesicular cutaneous eruption and less often by sensory and delayed motor loss [1]. After primary infection herpes zoster virus remains latent in dorsal root ganglion for several years. It can get reactivated and migrate along sensory nerve towards skin innervated by involved nerve. This results in rash characterized by vesicular skin eruption along with dysesthesia or hyperaesthesia corresponding to affected dermatome. Pain is usually develops first followed by rash within a week of onset of pain. This disease typically lasts 5-8 weeks [2]. Factors responsible for reactivation of virus include waning of immunity due to aging, immunosuppression by disease or medication, local irradiation and possibly local trauma [1, 3]. Motor neuropathy after zoster infection is uncommon and occurs about 5% cases. However it involves cranial nerves more than spinal nerves. Ocular paralysis reported in 13% and facial paresis reported in 7% of ophthalmic zoster cases [4]. In series involving 1432 cases of herpes zoster only 11(0.8%) cases developed lower motor neuron paralysis [5]. Motor involvement occurs probably due to spread of infection from dorsal root ganglion to anterior horn cells of same spinal segment. Prognosis of this disease is fairly good with 55 % of cases shows complete recovery and 30% with significant improvement in three weeks to six weeks time [6].

Conclusion

Segmental paresis is a rare complication of herpes zoster. The exact pathogenesis is uncertain.

The facial nerve is commonly involved, followed by the upper extremities but Clinical symptomatology may vary greatly. The sensory ganglion, spinal cord, the roots, plexus, and the peripheral nerves may be affected. Diagnosis depends mainly on medical history and clinical findings. This case presented to emphasize though zoster infection may rarely complicated by motor paresis, it should be considered in differential diagnosis of acute painful asymmetrical motor weakness involving extremity to avoid unnecessary interventions as well as early determining treatment and rehabilitative measures to prevent complications like contractures and atrophy.

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