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Herpes zoster oticus, neural invasion of virus: a case report and review of literature

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Introduction

Herpes zoster (HZ) is an acute reactivation of dormant varicella zoster virus. The virus lies dormant in the sensory ganglia from a prior infection of chickenpox caused by the same virus.[1,2] It predominantly effects middle-aged and elderly (sixth and eighth decades of life). Trigeminal nerve (ophthalmic branch) is most frequently affected (18.5%-22% of total cases). Oral manifestations appear when the second or third division is affected. The most significant complication of HZ infection is post herpetic neuralgia. Other complications include motor nerve palsy, optic neuropathy, blindness, encephalitis, and cutaneous calcinosis.[1]

Involvement of geniculate ganglion of sensory branch of facial nerve leads to Herpes zoster oticus & Ramsay Hunt syndrome. In severe cases of herpes zoster oticus, involvement of vestibulocochlear nerve leads to sensorineural hearing loss in 10% and vestibular symptoms in 40% of the patients.[3] Here is a case report of Herpes zoster oticus in a 60 year old male affecting right side of the face.

Case Report

A 60-year old male patient presented with the chief complaint of painful blisters on the right side of the face and ulcers in the mouth since 3 days, along with fever for the past 4 days. The patient also had difficulty in chewing and swallowing food due to the pain. Extra-oral examination revealed multiple vesicles 1-5 mm in size in relation to right temporal region, malar region, upper and lower lip on the right side, and lower part of the right cheek. External auditary canal and tragus showed similar lesions (Fig. 1, 2). On intra-oral examination, few intact vesicles and multiple shallow ulcers were seen on the lower right lateral border of the tongue (Fig. 3, 4), right side of the hard palate and lower right labial mucosa. The lesions were unilateral and they did not cross the midline. Based on the history and the clinical examination, provisional diagnosis of Herpes zoster involving the right maxillary and the mandibular division of the trigeminal nerve, was given. An exfoliative cytology was performed and the reports suggested presence of tzanck cells. Patient was prescribed, acyclovir 800 mg (AVCIVIR) five times a day for 5 days, and calamine lotion for topical applications on the skin lesions and an antiseptic, anaesthetic gel (DOLOGEL) for mucosal ulcerations. On the tenth day, patient reported back with severe sharp pain in relation to right preauricular area and the healed lesions on the skin showed, hyperpigmentation. Patient was advised to take antibiotics and steroids and after a month patient showed symptoms such as vertigo, tinnitus and hearing loss. Patient was diagnosed as Herpes Zoster Oticus, and was referred to ENT department for further investigations and management**.** Patient also underwent audiometry tests in which Tuning fork test showed sensorineural hearing loss but normal pure tone audiogram. Patient and was advised capsule Meconerve once daily for 3 months and the symptoms gradually reduced and there was improvement in the hearing and patient is still under follow up.

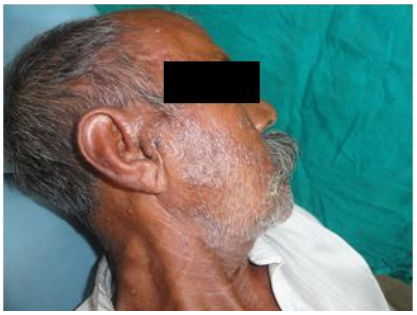

Fig. 1

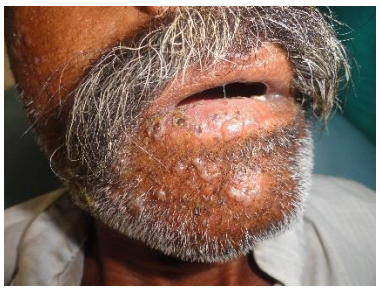

Fig. 2

Fig. 1, 2: Multiple intact vesicles in relation to right side of the face (Extra-Oral examination)

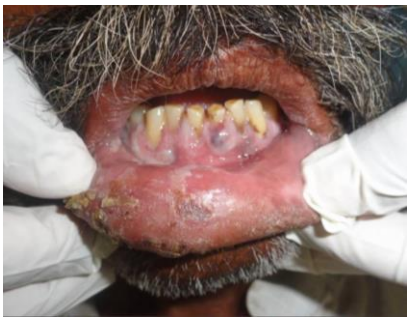

Fig. 3

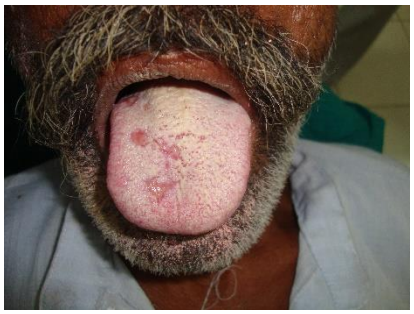

Fig. 4

Fig. 3, 4: Few intact vesicles and multiple shallow ulcers in relation to right side (Intra-Oral examination)

Discussion

HZ infection presents itself with prodromal symptoms such as fever, chills, headache, stomach upset, and general malaise. These symptoms last for approximately 3-5 days. Within 48-72 hours, a unilateral erythematous, maculopapular rash forms which later on develops into vesicular lesions. These lesions start to drying and scabing within 3-5 days after appearing. The total course of the disease is generally between 7-10 days. Patient may also complain of burning or circumscribed pain and paresthesia in relation to the affected side.[2,3,4,5] Diagnosis of HZ infection is based on classic appearance of a unilateral vesicular rash affecting the single dermatome. Laboratory investigations include tzanck test and viral culture. Advanced investigations include Polymerase chain reaction (PCR) technique and direct immunofluorescence assay.[2,5]

Sometimes a sharp, burning, stabbing pain accompanying the rash persists long after the lesions have healed; it is called as Postherpetic neuralgia (PHN) (most common complication). It has been found that half of the individuals infected with HZV infection who are immunocompromised (old age, diabetes etc.) develop postherpetic neuralgia.[2] Ramsay Hunt syndrome (James Ramsay Hunt in 1907) is an acute peripheral facial neuropathy, associated with erythematous vesicular rash of the skin of the ear canal, auricle (also termed herpes zoster oticus), and/or mucous membrane of the oropharynx.[4]

Herpes zoster oticus (HZO) is the inflammation of vestibulocochlear nerve characterized by erythematous vesicular rashes in the external auditory canal and pinna with symptoms like vertigo, hearing loss, and tinnitus. HZO can cause serious and permanent damage to the facial and other cranial nerves. Neurological complications include changes in cerebrospinal fluids, peripheral motor neuropathy, speech disturbance, and swallowing abnormalities. aseptic meningitis, and cranial polyneuropathy.[3,6]

Treatment: The main objective of conventional therapy is to promote healing, drying and antisepsis of the lesions, reduce the accompanying pain, to decrease itching or for crust removal and prevent complications.[2,5]

a. Antiviral Agents: The three most commonly used antiviral agents are, acyclovir, valacyclovir and famciclovir. The course of antivirals is of 7- 14 days. According to literature, antiviral therapy benefit has only been demonstrated in patients who receive treatment within 72 hours after onset of the rash.[2,5,7]

b. Pain management

1. Non- steroidal Anti-inflammatory drugs: Paracetamol
2. Low-potency opioid analgesics e.g. tramadol & codeine
3. High-potency central opioid (e.g. buprenorphine & oral morphine)
4. Corticosteroids: Although the use corticosteroids is not recommended without systemic antiviral therapy but Prednisone is prescribed in cases of PHN, HZ oticus or Ramsay Hunt Syndrome.[2,5]
5. Tricyclic Antidepressants, & Anti-convulsants[2,5]
6. Miscellaneous treatment possibilities include local therapy with capsaicin, local anesthetic blocking of sympathetic nerve, Traditional Chinese Medicine (TCM), Transcutaneous electric nerve stimulation (TENS), and neurosurgery (e.g. thermocoagulation of substantia gelatinosa Rolandi).[5]

c. Natural Treatment Options:[2,5,7]

1. Dietary/Multiple-Nutrients: Minerals like zinc, Lysine
2. Vitamins: Vitamin A, Vitamin C, Vitamin E, Vitamin B12 and Folic acid
3. Enzyme Therapy.

Conclusions

This case was presented for its rarity and classical clinical features. Proper clinical evaluation, investigations and histopathological examination for correct diagnosis is of utmost importance.

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