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Original research article

Management of Ramsay Hunt syndrome among HIV patients: Our experience in a tertiary care hospital of eastern India

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ABSTRACT

Introduction: Ramsay Hunt syndrome (RHS), also known as herpes zoster oticus as well as shingles of the geniculate ganglion, occurs due to reactivation of varicella zoster virus (VZV) within the geniculate ganglion and associated sensory nerves. Immunocompromised individuals like those with HIV infections are prone to RHS. HIV infections with RHS are at increased risk for disseminated infections, postherpetic neuralgia, neurological complications and recurrence of infections. Rapid diagnosis and treatment of this type of neurodermatologic condition is very crucial to avoid permanent complications. HIV patients with RHS have a poor prognosis if not treated early and adequately.

Aim: The aim of this study was to manage RHS patients in HIV positive cases in a tertiary care hospital of eastern India.

Material and methods: In this prospective study, six patients of RHS with HIV infections were reviewed, who presented during the period between 2012 and 2015.

Results and discussion: Out of six patients, four were male and two were female. All were adult patients whose ages were ranging from 25 to 54 years. All patients underwent thorough clinical examination before coming to diagnosis. All of our cases were recovered by our treatment protocol except case 3, who is still on follow-up with facial exercises.

Conclusions: Adequate awareness regarding early detection and management of RHS patients particularly among HIV positive cases is paramount among primary physicians.

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1. Introduction

Ramsay Hunt syndrome (RHS), also known as herpes zoster oticus, is an infection caused by varicella zoster virus associated with vesicles involving the pinna and presenting severe pain in and around the ear. In severe form, patient presents with lower motor neuron facial palsy, vestibular disturbance, sensorineural hearing loss and even viral encephalitis. RHS was first described by James Ramsay Hunt in 1907, which included facial palsy, inner ear dysfunction, ear pain, and vesicular rash.[1] Early diagnosis and prompt treatment of RHS in HIV patients in the prodromal phase by use of anti-viral drugs are probably the mainstay of its management. Several drugs have been described in RHS including corticosteroids, antiviral agents, vasodilators and vitamins. Here we are presenting six cases of RHS associated with HIV infections and with specific emphasis on its management. Even RHS is rare, and it is more commonly associated with immunocompromised conditions. As the incidence of HIV is growing, we may encounter more cases of RHS in future. RHS is often the first clinical manifestation in a HIV patient. It is very important for physicians to suspect, identify and manage RHS among HIV patients. The RHS usually affects elderly individuals and if seen in those of younger age, immunocompromised status such as HIV/AIDS may be suspected. Here, we present six cases of RHS associated with HIV infections.

Fig. 1 – Patient showing right side lower motor neuron facial palsy.

2. Material and methods

We review six patients of RHS with HIV infections who presented during the period between 2012 and 2015, at the Outpatient Department of Otorhinolaryngology. Out of six patients, four were male and two were female. All were adult patients (age ranging from 25–54 years). All patients underwent thorough clinical examination before coming to diagnosis.

3. Results

Each case was discussed individually. Details are given in Table 1.

3.1. *Case 1*

A 53-year-old man, a known case of HIV infection, came to the Outpatient Department of Otorhinolaryngology with complaints of right side earache and right side facial weakness with House-Brackmann (HB) grading III since 3 days. He was unable to close the right eyelids (Fig. 1). The patient had numerous vesicles on the concha of the right side pinna and the external auditory canal wall was swollen (Fig. 2). He had vertigo and tinnitus in the right ear. He did not complain of ear discharge, nasal discharge, headache, weakness of the limbs or seizures. He had history of chicken pox 15 years back. Even he was a known case of HIV, not taking antiretroviral therapy. Tzanck smears from the pinna lesions showed giant cells (Fig. 3). He had moderate sensorineural hearing loss in right ear. His blood investigation showed $CD4^+$ count 232 cells/mm^3.

3.2. *Case 2*

A 25-year-old boy presented to the Outpatient Department of Otorhinolaryngology for vesicular lesions on the left side

Table 1 – Details of diagnosed patients.

Case No.	Age, years	Gender	Facial palsy (HB grading)	Caloric test	Pure tone audiometry	Outcome
1	38	Male	Grade III	Hypofunction	Moderate sensorineural hearing loss	Completely recovered after 2 weeks
2	25	Male	Grade II	Hypofunction	Mild sensorineural hearing loss	Completely recovered after 2 weeks
3	32	Female	Grade IV	Hypofunction	Mild sensorineural hearing loss	Patient on follow-up
4	54	Female	Grade III	Hypofunction	Normal	Completely recovered after 3 months
5	48	Male	Grade II	Normal	Normal	Completely recovered after 2 weeks
6	29	Male	Grade-II	Hypofunction	Mild sensorineural hearing loss	Completely recovered after 2 weeks

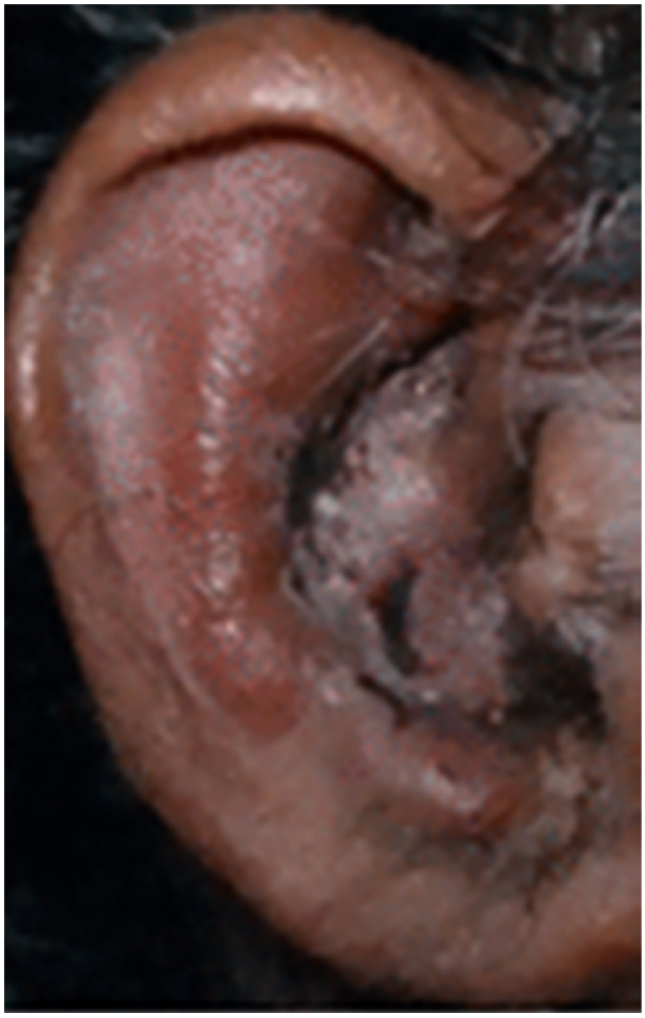

Fig. 2 – Characteristic vesicular eruption in pinna due to varicella zoster virus infection in RHS.

external auditory canal and pinna. He was diagnosed wiht HIV infection by enzyme linked immunosorbent assay (ELISA) and western blot serum antibody tests 3 years back. He had mild sensorineural hearing loss in left ear and disequilibrium at the time of presentation. He had history of chicken pox at the age of 8 years. He had facial palsy with facial asymmetry and HB grading II in the left side. Tzanck smears from vesicular lesions showed giant cells. His blood investigation showed $CD4^+$ count 202 cells/mm^3.

3.3. *Case 3*

A 32-year-old woman presented with painful vesicular lesions over the right side pinna since 5 days. Since the past 2 days, she had complaints of inability to close the right side eyelids, facial asymmetry (Fig. 4), drooling of liquid from right side angle of the mouth and vertigo. She was tested as HIV positive 10 days back when she was evaluated for the above problems. The vesicular ulcer was subjected for Tzanck smear, showing multinucleated giant cells with acantholysis. She had never been on antiretroviral therapy. She had history of childhood chicken pox. On examination, there was loss of nasolabial fold

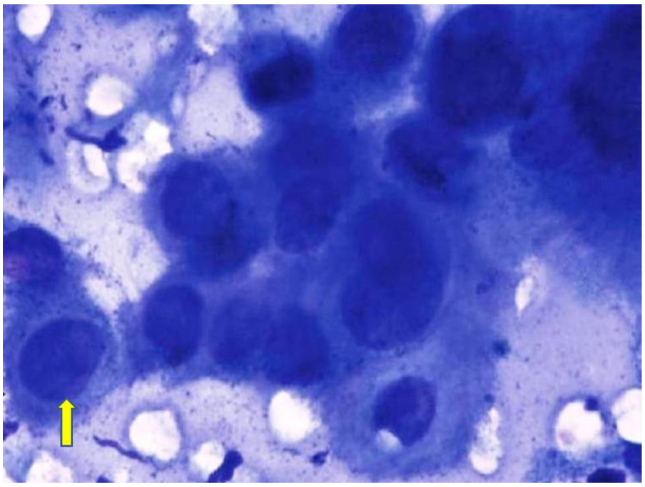

Fig. 3 – Tzanck smear showing giant cells (arrow mark).

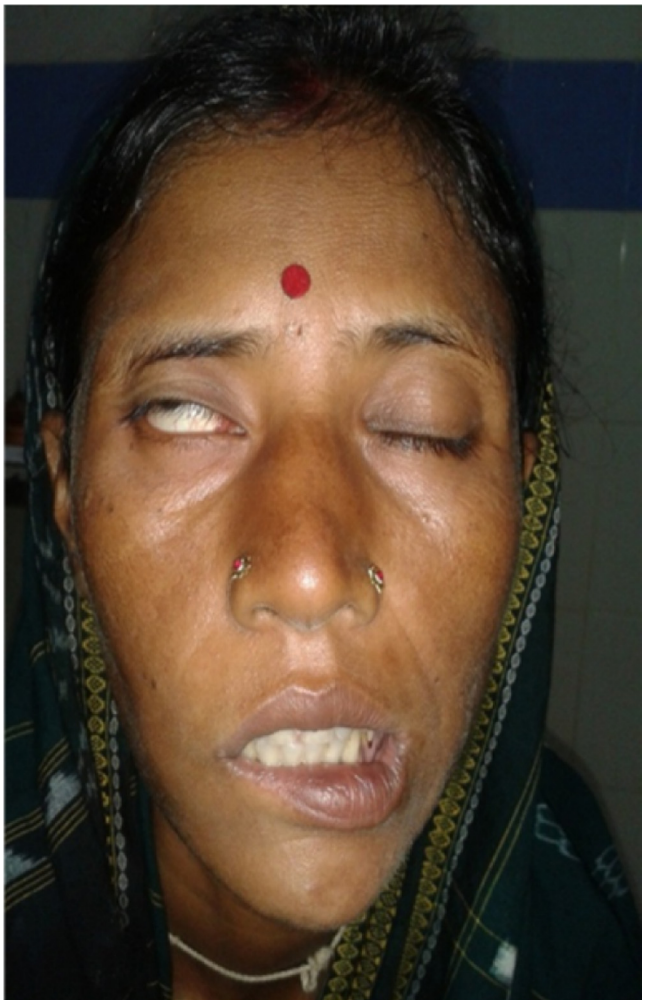

Fig. 4 – Right side lower motor neuron facial palsy in a female patient of RHS.

on the right side. The angle of the mouth was deviated to the left side and had facial asymmetry with HB grading IV of the facial paralysis. Her audiogram showed mild sensorineural hearing loss on the right side. No abnormalities were seen in

CT brain. Her HIV status was confirmed with double ELISA method. Blood investigations were done and showed $CD4^+$ count 210 cells/mm^3, Hb% 12 g/dL, ESR 10 mm/h, blood sugar 124 mg/dL, and blood serum creatinine 1.0 mg/dL.

3.4. *Case 4*

A female patient aged 54 years, with HIV infection, came to the Outpatient Department of Otorhinolaryngology, presenting painful blisters over the left side pinna and external auditory canal since 8 days. She had facial paralysis on the left side (HB grading III) with deviation of mouth to the right side, absence of wrinkles on the left side of the face and epiphora. She had tinnitus and vertigo. Tzanck smear from the vesicular eruptions showed multinucleated giant cells. She had normal hearing and did not have similar attacks in the past. She had past history of chicken pox when she was around the age of 15 years. She had never been on antiretroviral therapy but was diagnosed as HIV positive patient a year back. Her audiogram showed moderate degree of sensorineural hearing loss. Her blood investigations showed $CD4^+$ count 220 cells/mm^3.

3.5. *Case 5*

A 48-year-old male patient was admitted at the Otorhinolaryngology Department for headache, severe otalgia and vesicular eruptions on the right side pinna since a week. HIV infection was diagnosed by ELISA and western blot HIV serum antibody tests a year back. His present $CD4^+$ lymphocyte count was 398 cells/μL. He had lower motor facial palsy at the right side (HB grading II). He had history of chicken pox during childhood. He had no hearing loss and vertigo.

3.6. *Case 6*

A 29-year-old male patient was presented at the Outpatient Department of Otorhinolaryngology for severe otalgia and vesicular eruptions on the left side pinna since 10 days. HIV infection was diagnosed by ELISA and western blot HIV serum antibody tests a month back. His present $CD4^+$ lymphocyte count was 352 cells/μL. He had lower motor facial palsy at the left side (HBn grading II). He had history of chicken pox during childhood. He had no hearing loss and occasional vertigo.

3.7. *Treatment*

After the diagnosis of RHS, treatment was started on tablet acyclovir 800 mg six times a day for 10 days, tapering dose of tablet deflazacort, labyrinthine sedatives, eye care and physiotherapy for facial nerve palsy. Our patients were treated with Tablet zidovudine 300 mg twice daily, tablet lamivudine 150 mg twice daily, and tablet nevirapine 200 mg in an escalating dose. All were reviewed after 2 weeks. The vesicles over the pinna in all patients were completely resolved with improvement in facial nerve functions. Patients were advised to continue physiotherapy of facial muscles and vestibular rehabilitation exercises. Facial nerve rehabilitations like facial massage, facial nerve exercises like smiling, grimacing, whistling, etc. and biofeedback training with a mirror were done. All of our cases were recovered by the above treatment except case 3, who is still on follow-up with facial exercises.

4. Discussion

RHS is an infectious dermoneuropathy caused by varicella zoster virus characterized by facial nerve paralysis with herpetic eruptions over the pinna and external auditory canal and is often complicated by vestibulo-cochlear dysfunction. Its incidence is 5 in 100 000 cases.[2] In comparison to Bell's palsy, the prognosis of the facial palsy in RHS is worse with poor outcome. Again, along the HIV infection, the situation is crucial and needs early intervention, which will help to decrease long term sequelae of RHS. The incidence and severity of RHS increases in the elderly and in immunocompromised cases as in HIV infections, lymphoproliferative disorders, disseminated carcinomatosis, diabetes and during prolonged steroid therapy or during radiotherapy or chemotherapy.[3] The clinical manifestations of RHS are similar in HIV infected and non-HIV infected patients whereas HIV patients are at higher risk of disseminated infection, postherpetic neuralgia and more chance of recurrence of the infection.[4] Absolute $CD4^+$ cell count does not have correlation with risk of RHS as a result of reactivation of varicella zoster virus; however, patients with low $CD4^+$ cell count (<200 cells/mm^3) have higher risk of zoster complications.[4]

The pathophysiology behind the facial palsy is the swelling of the facial nerve most probably due to inflammatory reaction against virus, leading to the entrapment of the facial nerve in the narrow and confined facial canal along with viral demyelization. So in effect, steroids are given to decrease the facial nerve swelling in combination with an antiviral to combat the etiological microorganism.

The diagnosis of RHS is based on history, clinical examination and Tzanck smear which demonstrates the presence of the virus.[5] There are investigations like increasing antibody titers in complement fixation tests, and polymerase chain reaction (PCR) for detecting varicella zoster virus in vesicle fluid saliva and tears that are useful for diagnosis of RHS. The objectives for treatment of RHS are treatment of acute viral infection, to give immediate relief to acute pain, prevent further complications like exposure keratitis and to stop late complications like postherpetic neuralgia. Early treatment is associated with less chance of postherpetic neuralgia. As immunocompromised patients are at higher risk of development of postherpetic neuralgia, early and aggressive treatment of these patients is mandatory. Clinical study shows that the treatment of RHS should be done within the first 72 h so that it will be beneficial for the patients. Several studies showed that high dose of oral acyclovir causes speedy recovery of the patients. The standard treatment of RHS is antiviral therapy and high dose corticosteroids. Steroids reduce pain, vertigo and post-therapeutic neuralgia and speeds up healing of skin lesions. It also decreases the inflammation and edema of the facial nerve.[6] Antiviral agents prevent further proliferation or spread of varicella zoster virus in facial nerve.[7] Antivirals which can be used are acyclovir, valacyclovir and famciclovir. These antivirals cause the shortening of the duration of viral sheddings as well as decrease the course of the acute dermatological manifestations of RHS.[8]

Antivirals also prevent the development of postherpetic neuralgia. The severity and duration of RHS in severely immunocompromised patients are thought to be decreased by these antivirals. The treatment of RHS is done by the oral acyclovir which is a DNA nucleoside analog that interferes with herpes virus DNA polymerase and inhibits DNA replication, halting the cell cycle. So acyclovir is effective against viruses that replicate. Acyclovir provides optimal efficacy if it is given within 48 h of the onset of rash. Valacyclovir is superior to acyclovir as it can be delayed up to 72 h after the onset of the rash.[9] Valacyclovir is more convenient and slightly superior to acyclovir whereas famciclovir is more convenient and comparable to acyclovir. The choice of drugs is based on the convenience, availability and the cost.[10]

Opioid analgesics are very useful for relieving the severe acute somatic pain in RHS.[11] These are less effective to decrease the neuralgic pain which is often associated with RHS. Studies suggest that anticonvulsants like gabapentin and pregabalins may prevent the development of postherpetic-neuralgia.[12] Treatment with gabapentin and pregabalin should begin as early as possible in the course of the disease. They may be used concurrently with opioid analgesics, steroids and other adjuvant analgesics including antidepressant compounds.[13] Carbamazepine is useful in patients with severe neuritic pain who have failed response to the nerve blocks and gabapentin or pregabalin.[14] In this case, hematological parameters should be monitored as carbamazepine may be associated with idiopathic aplastic anemia. Phenytoin may be used in case of intractable neuritic pain in RHS but should be avoided in patients with lymphoma as it may induce a pseudolymphoma-like situation which cause difficulties to differentiate from primary lymphoma itself.[15] Stellate ganglion blocking with local anesthesia and steroids in combination with antivirals relieves the symptoms in RHS and also decreases the incidence of postherpetic neuralgia.[16] Blocking the stellate ganglion of sympathetic chain on the affected side is thought to prevent the neural ischemia that occurs secondary to decreased blood flow of intraneural capillary bed as a result of sympathetic stimulation by acute viral infection of nerve and geniculate ganglion.

The rehabilitation for the facial palsy is by facial massage, electrical nerve stimulation, facial neuromuscular exercises, co-ordination exercises and emotional exercises. All the above techniques are undertaken in our patients and showed good response.

5. Conclusions

Patients with RHS have poor prognosis than simple Bell's palsy. In HIV patients, again the prognosis is poorer and the complications are more severe if not treated promptly. HRS causes severe clinical manifestations in HIV patients. It should be controlled early and adequately with combination drugs. Interestingly, many primary physicians are not aware of this syndrome, so many times the manifestations may be missed or diagnosed lately. Adequate awareness regarding early detection and management, particularly among immunocompromised patients like HIV, is paramount among primary physicians.

Conflict of interest

None declared.

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