

Peripheral facial palsy as a rare complication of primary varicella infection in a child: A case report

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Abstract

Varicella, caused by the primary infection with varicella-zoster virus (VZV), is a common childhood illness that is usually self-limiting. However, rare complications such as neurological involvement can occur. Acute peripheral facial palsy is an uncommon manifestation during primary VZV infection. We present the case of a 12-year-old boy who developed left-sided peripheral facial nerve palsy during the course of varicella. The patient was treated with acyclovir, corticosteroids, and supportive care, and showed complete recovery within one month. This case highlights the importance of clinical vigilance for neurological complications during common viral infections and reinforces the value of timely antiviral treatment and vaccination in prevention.

Keywords: Varicella; Facial palsy; Varicella- zoster virus; Neurological complication; Pediatric infection

1. Introduction

Varicella-zoster virus (VZV), also known as human herpesvirus 3, is one of nine known herpesviruses that infect humans and is distributed worldwide. The virus is highly contagious and is primarily transmitted through airborne droplets. VZV infection leads to two distinct clinical entities: varicella (chickenpox) and herpes zoster (shingles).[1] Primary infection with VZV results in varicella, a highly contagious, acute, febrile, and exanthematous illness that commonly affects children and young adults. After the primary infection, the virus remains latent for life in the dorsal root and cranial nerve ganglia. Herpes zoster, a separate clinical entity, results from reactivation of latent VZV.[2] In immunocompetent individuals, varicella is typically a benign and self-limiting disease. However, it can be severe and even life-threatening in high-risk groups, such as infants, adolescents, adults, pregnant women, and immunocompromised individuals.[3] Serious complications are uncommon in healthy individuals but may include secondary bacterial infections of the skin and soft tissues—most often caused by Group A streptococcus—as well as pneumonia. Neurological complications occur in approximately 0.03% of cases and may include encephalitis, acute cerebellar ataxia, aseptic meningitis, and myelitis. Less common complications include Guillain-Barré syndrome, Reye's syndrome, and facial palsy.[4][5] Peripheral facial palsy is a rare neurological complication of varicella that can occur from five days before to sixteen days after the appearance of the exanthem.[6][7] Here, we report a case of peripheral facial palsy following varicella and discuss the association between these clinical entities and their management.

2. Case Report

A 12-year-old boy was admitted to the Department of Pediatric Infectious Diseases with a two-day history of facial palsy, without other neurological symptoms. One week prior to admission, he developed fever followed by a generalized exanthematous rash consistent with varicella. He had been treated symptomatically with antipyretics and antihistamines; no antiviral therapy had been initiated. On the fifth day of the illness, facial asymmetry was noted. The

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patient's personal and family medical history were unremarkable. On admission, he was afebrile, with vital signs within normal limits. Physical examination revealed multiple crusted lesions over the face, trunk, back, and extremities. Otoloscopic examination was normal, with no signs of otalgia, auricular vesicles, otitis media, or mastoiditis. Neurologically, the patient was unable to close his left eye, and there was loss of the nasolabial fold and forehead wrinkling on the left side. Deviation of the mouth angle toward the right side was also observed (Figure 1).



Figure 1 Peripheral left side facial palsy and crusted skin lesions over the face

The remainder of the neurological examination was normal. Magnetic resonance imaging (MRI) of the brain revealed no abnormalities. Routine laboratory tests—including complete blood count, biochemical profile, electrolyte panel, and urinalysis—were all within normal limits. Given the presence of the pathognomonic varicella rash, no further serological testing was performed. A diagnosis of varicella-associated left-sided peripheral facial nerve palsy was made.

The patient was treated with oral acyclovir (800 mg, five times daily for five days), prednisolone (60 mg/day in a tapering regimen over four weeks), artificial tears, and physical rehabilitation. Complete recovery was observed after one month.

3. Discussion

There are two clinically distinct forms of disease caused by varicella-zoster virus (VZV) infection: varicella and herpes zoster. Varicella results from primary infection with VZV and is a common childhood illness, particularly in regions without routine varicella vaccination programs. The World Health Organization estimates an annual global burden of approximately 140 million cases of varicella, with 4.2 million severe complications requiring hospitalization and around 4,200 deaths each year.[8]

Although varicella is typically a self-limiting disease, neurological complications can rarely occur, with an estimated incidence of up to 0.03%. The most frequently reported neurological manifestations are encephalitis and acute cerebellar ataxia.[9] Less common complications include transverse myelitis, optic neuritis, Reye's syndrome, Guillain-Barré syndrome, and facial nerve palsy.

Isolated acute peripheral facial palsy is a rare complication of primary varicella infection. It can occur before, during, or after the appearance of the exanthem, and may be unilateral or, in very rare cases, bilateral.[10] The onset typically ranges from five days before to sixteen days after the rash appears. Proposed mechanisms for this condition include direct viral damage to the facial nerve, immune-mediated inflammation, and virus-induced vasculopathy.

Other common causes of isolated facial palsy include Ramsay Hunt syndrome and Bell's palsy. Ramsay Hunt syndrome is caused by reactivation of latent VZV and is characterized by a triad of ipsilateral facial paralysis, ear pain, and vesicular eruptions on the face, ear, or within the auditory canal.[11]

The diagnosis of varicella-associated peripheral facial palsy is primarily clinical, based on the presence of characteristic skin lesions and neurological signs. There are no established guidelines for the management of this condition; treatment should be individualized. Antiviral therapy and corticosteroids are believed to accelerate recovery.[12]

The prognosis is generally favorable, with approximately 80% of cases recovering fully even without specific treatment. In our case, the patient was treated with acyclovir and corticosteroids and showed complete recovery after one month. It is worth noting that the absence of antiviral treatment during the early phase of the infection may have contributed to the development of this complication.

4. Conclusion

Peripheral facial palsy is a rare neurological complication of varicella, particularly in the pediatric population. Early use of antiviral therapy may help reduce symptom duration and prevent severe complications associated with varicella-zoster virus infection. The most effective way to prevent varicella and its complications is through vaccination. The Centers for Disease Control and Prevention (CDC) recommends two doses of varicella vaccine for both children and adults. Children are routinely scheduled to receive the first dose between 12 and 15 months of age, and the second dose between 4 and 6 years of age.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

Statement of ethical approval

'The present research work does not contain any studies performed on humans subjects by any of the authors'.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

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