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Case Report

A rare case of facial nerve palsy after primary varicella infection

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Abstract

The varicella-zoster virus is the major cause of chickenpox, an exanthematous condition that is highly frequent in children. Typically in immunocompromised individuals, the varicella zoster virus (VZV) can reactivate years later to cause shingles (zoster), which can lead to neurological impairments, most notably Ramsay Hunt syndrome (inflammation of the geniculate ganglion of the 7th cranial nerve). We present a case of a 21-year-old male patient who experienced classical facial nerve palsy following a primary varicella-zoster virus (VZV) infection.

Keywords: VZV, facial nerve palsy, zoster, Ramsay Hunt syndrome.

INTRODUCTION

Varicella, commonly known as chickenpox, is a contagious exanthematous disease primarily affecting children. It is caused by the varicella-zoster virus (VZV) and is characterized by a distinctive rash and fever. While chickenpox is generally considered a self-limiting and benign infection, it can occasionally give rise to severe complications, some of which involve the nervous system [1-2]. This case report delves into a particularly rare and intriguing complication of primary varicella infection – facial nerve palsy. Although facial nerve palsy is typically associated with various other viral infections, its occurrence following chickenpox is an unusual phenomenon [3]. In this report, we present the case of a 21-year-old male who experienced facial nerve palsy shortly after recovering from a primary VZV infection, offering insights into this rarely observed neurological complication.

We will explore the patient's clinical presentation, diagnostic procedures, treatment approach, and recovery. Additionally, we will discuss the possible mechanisms by which VZV may lead to facial nerve palsy, shedding light on the pathophysiology of

this complication. Furthermore, we will consider the clinical implications and the role of vaccination in preventing such occurrences, emphasizing the importance of early recognition and management of neurological complications following common viral infections. This case underscores the significance of recognizing and addressing rare neurological complications associated with seemingly routine childhood diseases**.** Neurological complications can arise in as little as 0.03% of cases, as reported in studies [4-6]. These complications can manifest as meningitis, encephalitis, myelitis, and acute cerebellar ataxia. In rare instances, chickenpox can cause facial nerve palsy, which can occur anywhere from five to sixteen days before the eruption of the rash.

It also highlights the potential benefits of vaccination in reducing the incidence of primary varicella infection and, by extension, its associated complications. By examining this case in detail, we aim to contribute to the growing body of knowledge surrounding the complexities of viral infections and their impact on the nervous system. Typically, chickenpox is a mild, temporary illness with a positive outlook, although it is possible for severe consequences to develop.

CASE REPORT

A 21 year old male with no known comorbidities presented to the neurology opd with complaints of deviation of angle of mouth to left, inability to close the right eye fully, for past 2 days .He also gave history of headache and right ear pain.

Two weeks prior, he had developed a fever and an exanthematic rash consistent with chickenpox. The rash primarily occurred on his face and both upper limbs, and he did not receive any treatment for it. He did not experience any other symptoms, such as nausea, vomiting, visual disturbances, or signs of central nervous system involvement.

Patient was afebrile at present and his vitals were within normal range .There were multiple crusted lesions scattered all over body, predominantly involving the face. Neurological examination showed deviation of mouth to left side on asking to smile, asymmetries in eyelid closure and difficulty in raising the right eyebrow and lack of wrinkles on the right half of the face.

The observed findings were suggestive of right facial nerve palsy and having presented within 2 weeks of primary varicella infection is suggestive of the rare complication of the VZV.

He was treated with Acyclovir (20 mg/kg/dose, 4 times/day for 5 days) and also was given tapering dose of steroids. During follow up, complete recovery of initial deficits and restoration of normal functions were registered.

DISCUSSION

Chickenpox is a highly contagious illness that typically affects children under the age of 12. It is characterized by fever, a rash, and skin lesions. The diagnosis of chickenpox is primarily based on clinical observation, rather than laboratory tests. While neurological complications are rare, occurring in only 1-3 out of every 10,000 cases,

they can include facial palsy, a condition in which the muscles of the face are weakened or paralyzed. This may be caused by direct viral toxicity or nerve damage resulting from an immune response. The use of vaccines has been shown to significantly reduce the incidence of chickenpox, with studies indicating that the inclusion of the varicella virus vaccine in vaccination programs has led to a decline in the number of cases.

CONCLUSION

This case report highlights the rare but significant possibility of facial nerve palsy as a neurological complication following primary varicella infection. Early recognition and appropriate antiviral treatment, in combination with steroids, can lead to a complete recovery of symptoms.

The case underscores the importance of considering varicella as a potential trigger for neurological complications and reinforces the value of vaccination in preventing varicella infections. Healthcare providers should remain vigilant and informed about the potential complications of common childhood diseases, as early intervention can greatly impact the patient's prognosis and quality of life.

Patient consent:

Informed consent was obtained from the subject involved in the study.

Conflict of interest:

The authors declare no conflicts of interest.

Author's contributions:

Conceptualization, D.S. , S.K. and P.K.; methodology, D.S.; software, D.S. and K.G.; validation, D.S., A.S. and S.K.; formal analysis, D.S.; investigation, D.S., S.K.; resources, D.S..; data curation, D.S..; writing—original draft preparation, D.S.,P.K..; writing—review and editing, D.S.,K.G.; abstract - S.K.; visualization, D.S., A.S.; supervision, P.K.; project administration, D.S. All authors have read and agreed to the published version of the manuscript.

FIGURES

Fig 1. Dew drops spots on the right cheek indicating primary varicella infection

Fig 2. Deviation of angle of mouth to left indicating right facial nerve palsy

Fig 3. Inability of the patient to lift right eyebrow, indicating right lower motor neuron facial palsy.

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