

Guillain Barre Syndrome after Varicella Infection- A Case Report

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Received: August 01, 2018; Published: October 29, 2018

Abstract

Varicella Zoster Virus (VZV) is a neurotropic human herpesvirus. Neurological complications following primary chicken pox infection are extremely rare (0.01 - 0.03%), although some neurological complications are known and GBS is one such rare complications. A 22 year old female patient presented with difficulty in deglutination for solids and liquids and closure of both eyelids since 10 days. It was followed by weakness of both upper limbs which progressed over two days to both the lower limbs along with paraesthesias. She was diagnosed to have chicken pox approximately 1 month prior to the onset of these symptoms. Nerve Conduction Velocity (NCV) study was suggestive of AMAN variant, as well as CSF examination showed cyto-albumino dissociation, which confirmed our diagnosis of GBS. Although VZV is a rare antecedent for GBS but this patient had all the significant clinical features found in GBS.

Keywords: Guillain Barre Syndrome; Acute Motor Axonal Neuropathy (AMAN); Varicella

Abbreviations

GBS: Guillain Barre Syndrome; AMAN: Acute Motor Axonal Neuropathy; CSF: Cerebrospinal Fluid; NCS: Nerve Conduction; VZV: Varicella Zoster Virus; PCR: Polymerase Chain Reaction; SBC: Single Breath Count; IVIg: Intravenous Immunoglobulin; MRC: Medical Research Council

Introduction

VZV is a neurotropic human herpesvirus. Neurological complications following primary chicken pox infection are extremely rare (0.01 - 0.03%), although some neurological complications are known [1]. Guillain-Barre syndrome GBS is among the least common (1:15000) complications of varicella complication of chicken pox [2]. The cause of GBS has been postulated as either direct viral invasion [3] or through an immune-mediated allergic mechanism. Fewer than 50 such cases have been reported in the literature and, when it does occur, it is almost always in the context of reactivation disease from latent VZV, following herpes zoster ('shingles') [4].

A large body of clinical and experimental evidence supports the notion that, in GBS, triggers- such as infection or possibly vaccination- generate an aberrant immune response directed to the components of the myelin sheaths and axons of peripheral nerve fibers [5].

We here present a case report of a 22 year old female suffering from GBS post varicella infection.

Case Report

A 22 year old female patient presented with difficulty in deglutination for solids and liquids and inability to close both eyelids since 10 days. It was followed by weakness of both upper limbs, which progressed over two days to both the lower limbs up to an extent that she had to use two person support to walk.

Patient also had pain and tingling sensations in both hands and feet. She was diagnosed to have chicken pox approximately 1 month prior to the onset of these symptoms. On examination, patient was well oriented to time, place and person, co-operative, a-febrile, normotensive with normal respiratory pattern (Pulse rate- 82/min, BP- 110/ 70 mm of Hg, SpO₂-92% on room air with respiratory rate-24/min). Single breath count (SBC) was 6 and chest expansion was 1.5 cm. On general physical examination healing lesions over her trunk were found which were suggestive of recent chicken pox infection. On neurological examination there was bilateral lower motor neuron facial palsy, bulbar weakness with absent gag reflex, along with respiratory involvement. On motor system examination there was normal bulk with hypotonia in all four limbs, having power 4/5 MRC (medical research council) grading in both upper and lower limbs. Deep tendon reflexes were absent and sensory examination was normal. The cerebellar and extrapyramidal system examination was unremarkable, and so was the bladder and bowel status. A provisional diagnoses of GBS was made. Nerve conduction study (NCS) study was done which was suggestive of acute motor axonal neuropathy (AMAN) variant, and the cerebrospinal fluid examination showed albumino-cytological dissociation, which confirmed our diagnosis of GBS. Patient was started on intravenous immunoglobulin (IVIg) and supportive treatment and the patient's condition improved in due course of time.

Discussion

This patient has all the significant clinical features found in GBS i.e. weakness, paresthesias, and diminished or absent deep tendon reflexes [6]. The VZV, is a rare antecedent for GBS and various cases with various pathogenic mechanisms have been reported since antiquity.

Many case studies were carried out following this study. In a study carried out by Jacobs., *et al.* it was found that only one case out of 154 could be attributed to VZV [7]. In 302 cases of GBS studied by Samantray., *et al.* only one (0.3%) was related to chickenpox [7].

GBS following herpes zoster typically has a latent period of two weeks to two months. Shorter latent periods, as in this case, are associated with more severe illness [8].

Conclusion

Varicella zoster is associated with rare but dreaded neurological complications. Varicella is easy to diagnose with typical rash and pain and it should be treated with antiviral immediately so as to prevent or reduce such complications. Furthermore the immune compromised or at high risk patients may be immunized.

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Volume 14 Issue 11 November 2018

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