



Case Report

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Herpes Zoster Ophthalmicus and Encephalitis Following Botulinum Toxin Type A Injection for Blepharospasm: A Case Report


 Ghasem Farahmand¹, Hanna Magrouni¹, Vahid Zolfaghari², Sina Gharehjah¹, Sakineh Ranji-Burachaloo^{*2}

1. Department of Neurology, Imam Khomeini Hospital Complex, Tehran University of Medical Sciences, Tehran, Iran.

2. Iranian Center of Neurological Research, Neuroscience Institute, Tehran University of Medical Sciences, Tehran, Iran.



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ABSTRACT

A 68-year-old male was admitted to ER of Referral Imam Khomeini hospital with abrupt commencement of fever accompanied with debilitating non-radiating headache, photophobia, ataxia and cluster of confluent vesicles on right side of forehead with swelling of right eyelid. All his symptoms started after receiving Botulinum injection on the same week before admission and he had never had similar manifestations beforehand.

His medical history was remarkable for hyperlipidemia, hypertension and right side Blepharospasm for which he received Botulinum injection every 6 months. He was on medication for the rest of his medical problems. He was not on any immunosuppressive medication and did not suffer from any disease weakening the immune system. His family history was unremarkable for any similar problems.

In medical exam, he was ill but not toxic, his vital signs were blood pressure of 135/80 mmHg, heart rate of 76, respiratory rate of 17 and oral temperature of 38.5°C. He had vesicles on his right forehead. Heart sounds were regular without murmur. Lungs were clear. Abdominal examinations were inconspicuous.

In neurological examinations, he was confused and disoriented to time and place. Cranial nerves were without any pathological findings except for positive Marcus Gunn of affected side and blurring of right optic disk margin. No muscle atrophy was seen. Muscle force showed no weakness. He was ataxic. Sensory examination was normal. Reflexes were checked and were within normal limits and symmetric.

Computer tomography (CT) scan of head was unremarkable and his MRI scan did not reveal any information compatible with his symptoms.

Due to the sudden onset of fever with headache and confusion, encephalitis was suspected and empirical therapy with antibiotics was started and LP was performed which indicated pleocytosis in CSF. According to the vesicles on the skin and with suspicion of Varicella encephalitis, PCR was sent for diagnosis of VZV. Subsequently, his condition got dramatically better and symptoms diminished after acyclovir was started.

*** Corresponding Author:**
Sakineh Ranji-Burachaloo
Address: Iranian Center of Neurological Research, Neuroscience Institute, Tehran University of Medical Sciences, Tehran, Iran.

E-mail: sranji@sina.tums.ac.ir


Case presentation

A 68- year – old male was admitted to emergency department (ED) of referral Imam Khomeini hospital with abrupt commence of fever accompanied with debilitating non-radiating headache, photophobia, ataxia and cluster of confluent vesicles on right side of forehead with swelling of right eyelid. All his symptoms started after receiving Botulinum injection on the same week before admission and he had never had similar manifestations beforehand.

His medical history was remarkable for hyperlipidemia, hypertension and right side Blepharospasm for which he received Botulinum injection every 6 months. He was taking medicine for the rest of his medical problems. He was not on any immunosuppressive medication and did not suffer from any disease weakening the immune system. His family history was unremarkable for any similar problems.

In the medical checkup, he was ill but not toxic. His vital signs showed the blood pressure of 135/80 mmHg, heart rate of 76, respiratory rate of 17 and oral temperature of 38.5°C. He had vesicles on his right forehead. Heart sounds were regular without murmur. Lungs were clear. In addition, abdominal examinations were inconspicuous.

In neurological examinations, he was confused about time and place. Cranial nerves were without any pathological findings except for positive Marcus Gunn of affected side and blurring of right optic disk margin. No muscle atrophy was observed. Muscle force showed no weakness. He was ataxic. Sensory examination was normal. Reflexes were checked and were within normal limits and symmetric.

Moreover, Computer Tomography (CT) scan of head was unremarkable and his MRI scan did not reveal any information compatible with his symptoms.

Due to the sudden onset of fever with headache and confusion, encephalitis was suspected. Therefore, empirical therapy with antibiotics was started and LP was performed which indicated pleocytosis in CSF. According to the vesicles on the skin and with suspicion of Varicella encephalitis, PCR was sent for diagnosis of VZV. Subsequently, his condition got dramatically better and symptoms diminished after acyclovir was started.

Discussion

Varicella-zoster virus (VZV) is a ubiquitous, exclusively human α -herpesvirus[1]. It presents as painful vesicular eruption localized to a specific dermatome with possible involvement of the central nervous system [2].

Encephalitis is an uncommon complication of varicella zoster virus (VZV) infection in immunocompetent population. The most prominent symptoms of VZV encephalitis include confusion, headache, nausea and gait disturbance [3-5]. However, immunocompromised patients, individuals with autoimmune diseases and patients on immunosuppression have increased vulnerability to VZV dissemination. Thus, the morbidity and mortality increase in these patients [6, 7].

Although clinical features may be atypical and skin lesions may be frequently being absent masking the varicella diagnosis in immunocompromised patients [8, 9], incidence of varicella zoster and its complications as encephalitis are extremely rare [10].

Blepharospasm is a focal dystonia characterized by involuntary closure of the eyelids [10]. In 1989, Blepharospasm (in patients older than 12 years old) was the first indication approved by the United States Food and Drug Administration (FDA) for the use of Botulinum toxin type A (BoNT-A)[11]. In one study which focused on side effects of injection, complications occurred in 22.6% of patients treatments. In most cases, these were local and transient. Symptomatic dry eye was the most common side effect, followed by ptosis, photophobia and diplopia [12].

Some studies have reported the association between localized trauma and reactivation of herpes zoster, especially in the ophthalmic division of trigeminal nerve. Reported underlying trauma include UV light, Botulinum toxin type A injection, pulsed-dye laser, dental extraction and maxillary sinus lift operation [13–19].

Scarce evidence exists of flare up of VZV after injection of botulinum. There has been two studies that showed involvement of VZV after injection of botulinum, one being for cosmetic use and the other one for treatment of migraine [18–19].

To our knowledge, there are no previous reports regarding concurrence of VZV encephalitis and ophthalmic zoster after botulinum injection or other local traumas.

Conclusion

This report suggests that local trauma, regardless of the competency of immune system, can trigger VZV reactivation. In addition, accompanied neurological symptoms can be a potential complication of botulinum injection. Therefore, physicians in practice must be aware and prepared for this complication.

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