

MULTIPLE SCLEROSIS IN A PATIENT WITH BELL'S PALSY: A CASE REPORTMaryam Jalali¹, Navid Kalani², Farshid Javdani³ and Naser Hatami^{4*}¹Department of Neurology, Jahrom University of Medical Sciences, Jahrom, Iran.²Research center for social Determinants of Health, Jahrom University of Medical Sciences, Jahrom, Iran.^{3,4}Student Research Committee, Jahrom University of Medical Sciences, Jahrom, Iran.

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Sciences, Jahrom, Iran.**ABSTRACT**

Bell's palsy is a facial paralysis due to the demyelination of peripheral nerves of the face and it affects the person's face. In some cases, Bell's palsy is associated with multiple sclerosis, which despite the Bell's palsy is a central nervous demyelination disease. This suggests the need to consider demyelinating autoimmune diseases, including MS, in identifying the cause of Bell's palsy.

KEYWORDS: Multiple sclerosis, Bell's palsy, patient.**INTRODUCTION**

Bell's palsy is the most common cause of peripheral facial paralysis. This disease suddenly causes facial asymmetry and the inability to close the eyes and open the lips, and the inability to whistle and bend the lips sideways while talking or laughing, which this sudden change makes the patient very uncomfortable.^[1] Bell's paralysis is caused due to nerve inflammation in the geniculate ganglion, which results in compression, ischemia, and demyelination of the nerves.^[2] The term "Bell's palsy" is used when the seventh nerve paralysis is not due to the following specific causes, such as stroke, meningitis, syphilis, sarcoidosis, Lyme.^[3,4] Diagnosis of this condition is due to the history and clinical symptoms that are due to the weakness of the unilateral psoas muscles. If necessary, laboratory tests or brain imaging techniques are used to reject other possible diagnoses of peripheral paralysis.^[5] Multiple sclerosis is one of the diseases that may be diagnosed with Bell's palsy.^[6] Although this condition is rare,^[7] considering MS and getting MRI imaging can be effective in identifying the cause of Bell's palsy. In this study, we will also provide a case of Bell's palsy and MS co-occurrence and its possible pathophysiology.

CASE REPORT

A single 18-year-old woman, referring to an outpatient neurology clinic two days ago, with a tenderness of the face in one side and a lack of closure of the eyelid on the same side. The patient did not mention diplopia, paresthesia, dizziness, paresis, or signs of another neurological defect. The patient did not mention a particular background, there was no history of hospitalization. There was no history of using a particular drug. The patient's vital signs were normal and

stable. The general and neurological examination was normal and only Rt had side-peripheral facial palsy. The ESR was within normal range. In Brain and Cervical MRI, multiple plaques in the brain and cervical cord were seen. With MS diagnosis, the patient received two prednisolone doses, after which her peripheral facial palsy was treated, and after that, due to a large number of plaques in Brain and Cervical Cord, treatment with rituximab began.

DISCUSSION

Bell's palsy often occurs idiopathically but can be caused by viral infection,^[8] polyneuropathy,^[9] pregnancy,^[10] ischemia,^[11] and vasculitis,^[12] Some researchers have investigated the relationship between Bell's palsy disease and autoimmune diseases. One of the underlying assumptions is that the herpes virus has similarities to myelin of the neuronal cells, which occurs after the autoimmune process due to viruses re-attack and the demyelination occurs.^[13]

Guillain-Barre syndrome is also an autoimmune disease in which immune cells attack to myelin antigens in the peripheral nerves that may display Bell's palsy symptoms.^[14] It was shown in a study the lymphocytes of Bell's palsy patients in the laboratory are stimulated against the antigens isolated from the myelin of the human peripheral myelin,^[15] In Sjogren's Syndrome, which is autoimmune, it may also be seen with Bell's palsy manifestations that have been more severe in people who have had anti-SS-A (Ro) autoantibodies.^[16] It was also shown in a study that the number of suppressor T lymphocytes in Bell's palsy patients were significantly reduced. These lymphocytes prevent the

over the function of the immune system and autoimmune disease.^[17]

Treatment with prednisolone starts at the first week of the disease and can restore the function of the paralyzed face.^[18]

Prednisolone is useful in the treatment of autoimmune conditions. These cases indicate the role of the immune system in Bell's palsy disease. But Bell's palsy is a kind of demyelination of the peripheral nerves,^[13] and MS demyelinate the central nervous system. However, there are many cases of patients with autoimmune demyelination that affects both the central and peripheral nervous system (CNS and PNS). This can be due to the homogeneity of the antigens in the central and peripheral nerve myelin.^[19] The assumption that Bell's palsy in our MS patient is the cause of autoimmunity seems to be justified. In terms of age, the association of peripheral neuropathy and MS is more common in young people. There is a study also found that isolated facial palsy occurs in approximately 5% of MS patients in Iran.^[20]

CONCLUSION

Bell's palsy can be the first symptom of MS disease. Although in the MS, autoimmunity is present in the CNS, but, the peripheral nervous system can also be involved. In this regard in young patients with Bell's palsy, it is important to consider central and peripheral demyelinating diseases, including MS.

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Authors Contributions

All the authors met the criteria of authorship based on the recommendations of the international Committee of Medical Journal Editors.

Conflict of interest

There are no conflicts of interest in this study.

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