Diplopia Associated with Interferon-β1a Treatment: Report of a Case

İnterferon-β1a Tedavisine Bağlı Diplopi Gelişen Bir Olgu

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ÖZET

Relapsing-remitting multipl skleroz (RRMS) tanısı ile takip edilen 25 yaşındaki erkek hasta almış olduğu son üç interferon (IFN)-β1a tedavisi sonrası gelişen geçici horizontal diplopi atakları nedeniyle kliniğimize başvurdu. Diplopi ataklarının IFN-β1a tedavisinden bir gün sonra başladığı ve toplam olarak üç gün sürdüğü öğrenildi. Hastanın hikayesinden IFN-β1a tedavisini bir yıldır almakta olduğu ve önceki tedavilerinden sonra diplopi şikayetinin olmadığı öğrenildi. Diplopi ataklarının IFN-β1a enjeksiyonu sonrası gelişmesi ve geçici yapıda olması nedeniyle IFN-β1a tedavisine bağlı olduğu düşünüldü. Bilgilerime göre bu olgu RRMS tedavisinde IFN-β1a'ya bağlı gelişen diplopi ile rapor edilen ilk olgudur.

Anahtar Kelimeler: Diplopi, multipl skleroz, interferon-beta.

ABSTRACT

Diplopia Associated with Interferon-β1a Treatment: Report of a Case

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A 25-year-old male with relapsing-remitting multiple sclerosis (RRMS) presented with three transient episodes of horizontal diplopia after the last three administrations of interferon (IFN)-β1a. The episodes of diplopia occurred one day after the administration of IFN-β1a and all lasted for three days. The patient had been taking IFN-β1a treatment weekly for one year, and denied any diplopia previously. Its development after IFN-β1a injection and transient nature suggest the diplopia was an adverse effect of IFN-β1a. To the author's knowledge, this is the first case to be reported with diplopia associated with IFN-β1a treatment in RRMS.

Key Words: Diplopia, multiple sclerosis, interferon-beta.

INTRODUCTION

Interferon (IFN) β-1a has been used widely over the past 15 years in the treatment of relapsing-remitting multiple sclerosis (RRMS). The use of IFN-β1a in MS is primarily based on its ability to decrease the clinical and pathologic signs of inflammation in an animal model of experimental autoimmune encephalomyelitis resembling human MS (1). It has been demonstrated by numerous clinical studies that IFN-β1a reduces the symptoms of MS, delays significantly the progression of functional disability, improves cognitive function, and decreases the number of lesions on brain MRI in the RR form of MS (2-4). Although the mechanisms of action of IFN-β1a have not been completely understood, recent evidence suggests that it down-modulates the T-cell activation by altering the expression of proteins involved in antigen presentation, and enhances the differentiation of activated T-cells towards a T-helper-type 2 (Th2) anti-inflammatory response (5).

Headache, flu-like symptoms, asthenia, myalgia, depression, insomnia, and fever are the most common side effects reported with IFN-β1a treatment (6). The only reported ocular side effect was retinopathy characterized by the presence of cotton-wool spots (7). In this report, a patient with RRMS who developed recurrent transient episodes of horizontal diplopia while being treated with IFN-β1a (Avonex, Biogen Idec, USA) is presented.

CASE

A 25-year-old male presented with a complaint of transient episodes of diplopia after the last three injections of IFN-β1a for the treatment of RRMS. He had been diagnosed as RRMS one year ago, and had since been on IFN-β1a weekly. For the last three weeks after one day of administration of IFN-β1a, he experienced horizontal diplopia lasting for three days. He denied any diplopia or any associated side effects with the previous injections. When he presented to our clinic, he was free of symptoms. His medical history was remarkable for two episodes of MS attacks, in which he had paresthesias in his extremities that were treated with pulse-steroid therapy.

The neuro-ophthalmologic examination revealed 20/20 vision in both eyes. The color vision was normal in both eyes. Pupils were equal, round and reactive to light with no evidence of relative afferent pupillary defect. Biomicroscopic examination revealed normal anterior segment for both eyes. The eye movements were normal in all positions of gaze. The fundus examination was normal in each eye. The neurological examination was not remarkable.

His cranial and cervical magnetic resonance imaging (MRI) scan showed multiple inactivated MS plaques localized to supratentorial cortical and periventricular white matter, corpus callosum and cervical spinal cord.

DISCUSSION

A case with RRMS who developed diplopia that was presumed to result from treatment with IFN-β1a is presented in this report. Its development after IFN-β1a injection and transient nature suggest the diplopia was an adverse effect of the drug. The presumed mechanisms for the occurrence of the diplopia might be transient ocular motor nerve palsies or pseudo-myasthenic reaction, as both were previously reported with IFN-α treatment (8,9).

To the author's knowledge, this is the first reported case of transient episodes of diplopia with IFN-β1a treatment in RRMS. The association of diplopia with IFN-β1a will certainly remain controversial until further evidence of a cause-and-effect relationship emerges in a greater number of patients. However, patients and physicians should bear in mind that IFN-β1a carries a potential for inducing diplopia during treatment of RRMS.

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