



Rheumatoid Arthritis in a Patient with Multiple Sclerosis Who Received INF β 1- α : A Case Report

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Abstract

Introduction: Multiple sclerosis (MS) is an autoimmune of CNS that could be present with other autoimmune disorders. On the other hand, biologic drugs make this association even more complicated because these drugs, themselves, can cause autoimmune disease. Like other diseases, there are reports of other autoimmune diseases developed by these drugs in patients with MS.

Case Presentation: The patient was a 55-year-old woman with right-sided hemiparesthesia appearing about 4 years ago that resolved spontaneously. Two years later, she developed paresis of the right hand. With a diagnosis of MS, the patient received steroid pulse therapy with methylprednisolone 1 gr for 5 days followed by weekly intramuscular interferon β 1- α . About 1.5 years after interferon therapy, the patient developed pain in the limbs, especially in hands. On examination, the wrist and metacarpophalangeal joints were tender and swollen. preclinical evaluation revealed elevated erythrocyte sedimentation rate (ESR), a very high level of anti-cyclic citrullinated peptide (anti-CCP), and a high level of RF. Rheumatoid arthritis (RA) was diagnosed for the patient.

Conclusions: MS, like any other autoimmune disease, can be associated with other autoimmune diseases. On the other hand, biologic drugs used to control MS can potentially cause autoimmune diseases.

Keywords: Multiple Sclerosis, Rheumatoid Arthritis, Interferon, Intramuscular Interferon β 1- α

1. Introduction

Multiple sclerosis (MS) is a disease of the immune system that involves the central nervous system, and causes a wide range of symptoms. Although its pathogenesis is yet unknown, the immune system appears to play a major role in the development of MS. Various factors in this system, such as B and T cells, are involved in the development of MS, which associates it with other autoimmune diseases, including lupus, Behcet's, and ulcerative colitis (1, 2).

It is well-established that several autoimmune diseases can be present in one patient and MS, as an autoimmune disease, is no exception (1). On the other hand, biologic medications used in autoimmune diseases complicate this association even more because they themselves can cause autoimmune diseases (3). Biologic medications are now used for a wide range of autoimmune diseases such as MS. Like other diseases, there are reports of other autoimmune diseases may develop by these medications in patients with MS. The present study reports a case of MS who was being treated with interferon β 1- α and developed rheumatoid arthritis.

2. Case Presentation

The patient was a 55-year-old woman with right-sided hemiparesthesia appearing about 4 years ago that resolved spontaneously. Two years later, she developed paresis of the right hand. Magnetic resonance imaging (MRI) revealed periventricular plaques. The plaques were also evident on cervical MRI. She reported no complaints regarding skin or joint involvement, dry mouth (xerostomia), or dry eye, and vasculitis lab tests including anti-cardiolipin antibody (ACLA), anti-phospholipid antibody (APLA), anti-nuclear antibody (ANA), and rheumatoid factor (RF) were negative. The patient's past medical history and family history were also unremarkable and negative for systemic and autoimmune diseases. Diagnosed with MS, the patient received steroid pulse therapy with methylprednisolone 1 gr for 5 days followed by weekly intramuscular interferon β 1- α . The patient expressed no complaints at this stage and the symptoms resolved. About 1.5 years after interferon therapy, the patient developed pain in the limbs, especially in hands. On examination, the wrist and metacarpophalangeal joints were tender and swollen. Para clinical investigations revealed elevated erythrocyte sedimentation rate

(ESR), a very high level of anti-cyclic citrullinated peptide (anti-CCP), and a high level of RF. The patient was referred to a rheumatologist who made a diagnosis of rheumatoid arthritis (RA). Diagnosis of RA was made based on clinical manifestations and laboratory tests, but the synovial fluid sample was not taken.

She received methotrexate 2.5 mg three times per week and prednisolone 5 mg per day. Since interferon could have caused RA in this patient, it was discontinued. Her symptoms resolved following discontinuation of interferon and administration of the medications prescribed by the rheumatologist. Since the patient had well controlled disease and the medications prescribed by the rheumatologists could control MS as well, no other medication was prescribed for the patient; she was only monitored. Now, after 6 months of cytotoxic treatment, the patient is in good condition and both MS and RA are well-controlled.

3. Discussion

Association between MS and other autoimmune diseases is well known; for instance, one study reported that the prevalence of other autoimmune diseases was 0.014% (2). The association between MS and RA has also been recognized for a long time (4). This association can be due to the autoimmune nature of both diseases. In general, the association of MS with other illnesses is not uncommon, and a growing number of reports are being published in this area. This association can have several reasons. The autoimmune nature of these diseases creates a kind of common etiology among them. This is perhaps the most important reason for the association between two autoimmune diseases in a patient. This association may be coincidental or random. Autoimmune diseases can be induced via biological medications; in fact, there are numerous reports of autoimmune diseases developed as side effects of biological medications, which are increasingly used in a wide range of diseases. This finding is well-established for medications used for MS as there are reports of induction of diseases like sarcoidosis, lupus, and immune thrombocytopenic purpura (ITP) in the literature (5-8).

Although it is difficult to prove this issue, it can be taken into consideration if the symptoms disappear following discontinuation of the medication.

Although no statement can be made about the patient in this study with certainty, the possibility of RA induction by interferon should be noticed. Therefore, changing the medication or using cytotoxic medication with simultaneous effects on MS and other autoimmune diseases appears to be effective and rational.

3.1. Conclusions

MS, like any other autoimmune disease, can be associated with other autoimmune diseases. On the other hand, biologic medications used to control MS can potentially cause autoimmune diseases. The above points should be considered when treating patients with autoimmune diseases.

Footnotes

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