OLGU SUNUMU CASE REPORT

DOI: 10.5336/caserep.2017-55147

Concomitance Ankylosing Spondylitis and Multiple Sclerosis: Case Report

Ankilozan Spondilit ve Multipl Skleroz Birlikteliği

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Geliş Tarihi/*Received:* 10.02.2017
Kabul Tarihi/*Accepted:* 17.05.2017

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This work was presented as a poster at XVII.TPOG National Pediatric Cancer Congress, 1-5 May 2012, Antalya.

ABSTRACT Ankylosing spondylitis (AS) is a chronic inflammatory disease characterized by involvement of the sacroiliac joints, spine, and peripheral joints. Patients with AS rarely develop neurological complications such as multiple sclerosis (MS) or MS-like symptoms. Although some authors report an association between AS and MS, the relationship is unclear. Most of reported cases, AS precedes MS. AS and MS rarely coexist. Different from the most of the cases we present a case in which MS precedes AS .

Keywords: Spondylitis, ankylosing; multiple sclerosis

ÖZET Ankilozan spondilit (AS) sakroiliak eklem, omurga ve periferik eklemlerin tutulumu ile karakterize, kronik inflamatuar bir hastalıktır. AS'li hastalarda nadiren multipl skleroz (MS) veya MS benzeri semptomlar gibi nörolojik komplikasyonlar gelişebilir. Bazı yazarlar tarafından AS ve MS arasında bir ilişki olduğu bildirilse de bu ilişki net değildir. Bildirilen vakaların çoğunda, AS MS'den önce meydana gelmektedir. AS, MS birlikteliği nadir görülür. Olguların çoğundan farklı olarak, MS'in AS'den önce ortaya çıktığı bir vakayı sunuyoruz.

Anahtar Kelimeler: Spondilit, ankilozan; multipl skleroz

Ankylosing spondylitis (AS) is a chronic inflammatory disease characterized by involvement of the sacroiliac joints, spine, and peripheral joints.[1] Patients with AS exhibit several associated extra-articular manifestations, including anterior uveitis (25-30%), psoriasis (10-25%), inflammatory bowel disease (5-10%) and cardiovascular manifestations.[2] Neurological complications are accompanied by cauda equina syndrome, atlanto-axial joint subluxation, spinal fractures, spinal stenosis and multiple sclerosis (MS) or MS-like symptoms.[3] Some authors have proposed an association between AS and MS. In most of the reported cases AS precedes MS. We report a case wherein MS preceded AS; this is different from other cases and suggests a possible association between the two pathologies.

CASE REPORT

A 34 year-old woman suffering from low back pain was referred to our department by the department of neurology. Her back pain had begun two

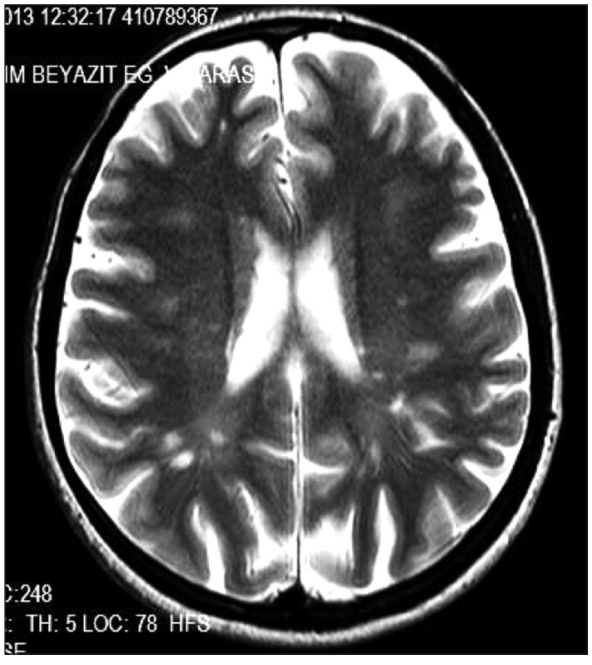

FIGURE 1: Cranial MRI axial T2- weigted image shows multiple hyperintense lesions in the bilateral parietooccipital area.

years ago and had progressed over the last months. She also had night pain and morning stiffness lasting for about an hour. In 2001, she was examined in our neurology department due to a complaint of double vision. A cranial magnetic resonance imaging (MRI) T2-weighted axial section study showed cortical demyelinating plaques in both parietooccipital region (Figure 1). She was diagnosed as relapsing-remitting MS and treated with 30 mcg interferon 1-beta/week. She had no history of uveitis, diarrhea, rash, oral thrush, heel pain, or peripheral arthritis. On physical examination, the cervical range of rotation bilateral was limited nearly 60 degree; in addition, lumbar lateral flexion was limited at 7 cm. Intermalleolar distance was 90 cm, tragus to wall distance was 13 cm. Chest expansion was 8 cm and the modified Schober's test was 5 cm. There was a tenderness on her left sacroiliac joint, and Mennel and Gaenslen tests were positive on the left side. Neurological examination yielded no pathology. The erythrocyte sedimentation rate, C-reactive protein, complete blood count, and results of biochemical tests were normal. She tested positive for HLA-B27. Her lower back pain measured 7 according to the visual analogue scale (VAS, 0–10 cm). Both sacroiliac joints showed narrowing and sclerosis on a pelvic anteroposterior radiograph (Figure 2). In an MRI of the sacroiliac joint, the T1-weighted image showed hypointensity and the T2-weighted image showed bone marrow edema (hyperintensity) in the left sacroiliac joint (Figures 3 a, b). On the basis of the inflammatory low back pain, bone edema in the sacroiliac MRI, and positive HLA-B27, she was diagnosed as AS. Indomethacin 3 x 50 mg/day was given; additionally, posture, breathing, and stretching exercises were suggested. After one month of treatment, she experienced significant relief in her complaints and her VAS score decreased to 1. This well-being was seen in her six-month examination as well.

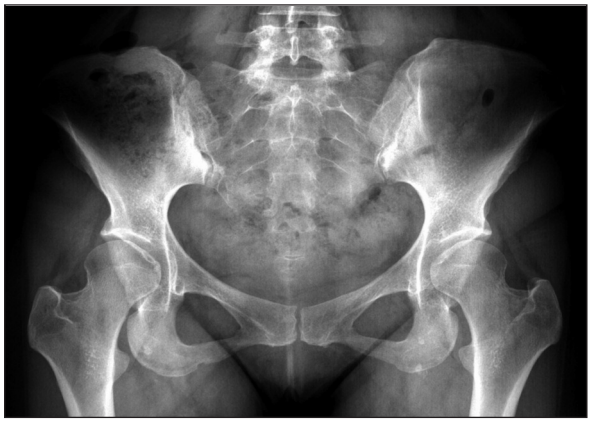

FIGURE 2: A pelvic radiograph showing bilateral grade 3 sacroiliitis.

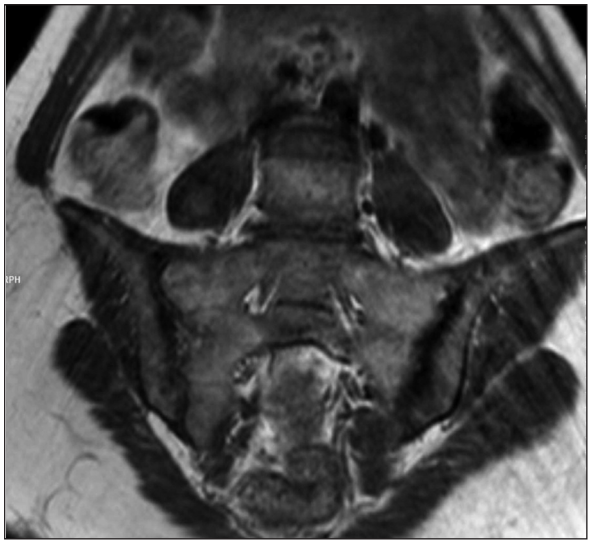

FIGURE 3: a) T1-weighted image shows hypointensity of the left sacroiliac joint

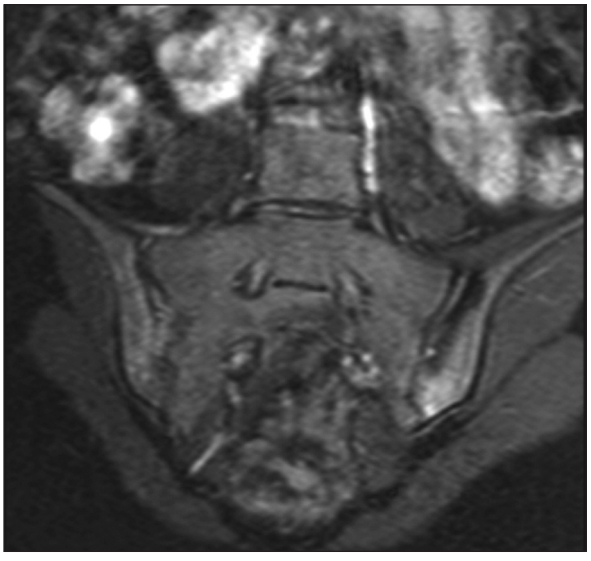

FIGURE 3: b) T2-weighted image shows bone marrow edema (hyperintensity) of the left sacroiliac joint.

DISCUSSION

The association between AS and MS has been described in the literature.[4-6] To the best of our knowledge most of litterateur AS precedes MS. In our case, MS preceded AS, which makes it different from other cases. Our patient fulfilled the diagnostic criteria for AS, and possessed the gene for HLA-B27. She was diagnosed as MS and AS according to McDonald's criteria and The Assessment of Spondyloarthritis (ASAS) criteria for the classification of axial spondyloarthritis, respectively.[7,8]

The possible association between AS and MS is not clear. Both conditions share an unclear etiopathogenesis that includes immunogenetic and environmental factors.[9,10] Some authors have suggested cross reactivity of HLA-B27 with HLA-B7.[11] However, an HLA-B27-negative AS patient was recently reported with MS.[9] Both disease processes are explained through molecular mimicry and cross-recognition by T-cells.[12] Molecular mimicry is an immune response to structural determinants such as lipid, protein, or sugar moieties. Larger epidemiological studies are therefore required to better understand the connection between both diseases.

Recently, some studies have reported the occurrence of MS in patients with AS, suggesting a possible association. Some drugs like indomethacin may cause demyelinization of the peripheral and central nervous system. Recently, some cases reported MS symptoms occurring after anti-tumor necrosis factor alpha treatment.[13] Our patient had no such drug history; therefore, there was no possibility that she would have developed such complications. Lourbopoulos et al indicate that patient treated with IFN-β might be a major participant in HLA-B27 related immunopathology.[14] Our patient was positive for HLA B27 and was taking IFN-β therapy. Immunopathology related AS may have been triggered by IFN-β treatment in this patient MS developed before AS. While choosing treatment for both diseases we must be careful and inform patients for possible complications.

In conclusion, the two autoimmune diseases may share some pathogenic factors. The prevalence of coexisting AS and MS is higher than individual prevalence for either condition. Our patient presents a new picture of concomitance AS and MS, suggesting a possible association between the two diseases. Both conditions are frequently concomitance; however, in patients with either AS or MS, weakness, fatigue, and pain are common and shared symptoms; therefore in patients with AS and MS a detailed examination of the neurological and musculoskeletal systems prevents a delay in diagnosis and subsequent complications.

Conflict of Interest

Authors declared no conflict of interest or financial support.

Authorship Contributions

Concept: *Özlem Bizpınar;* ***Supervision:*** *Aytül Çakçı;* ***Data Collection:*** *Nihal Tezel, Özgür Karaahmet;* ***Literature Search:*** *Nihal Tezel,* ***Writing Manuscript:*** *Nihal Tezel, Ajda Bal.*

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