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Coexistence of Ankylosing Spondylitis, Metabolic Syndrome and Gout Disease

Ankilozan Spondilit, Metabolik Sendrom ve Gut Hastalığı Birlikteliği

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ABSTRACT

Ankylosing spondylitis (AS) and gout are inflammatory diseases causing arthritis. Metabolic syndrome (MetS) is characterized by insulin resistance accompanied by systemic disorders, such as abdominal obesity, glucose intolerance or diabetes mellitus, dyslipidemia, hypertension, and coronary artery disease. Although a few studies have reported the co-existence of AS and gout as well as AS and MetS, there is no case report in the literature regarding the co-existence of AS, acute gout arthritis, and MetS. Here, we present a case who had all these disorders in together. In conclusion, this report aimed to call attention of involved physicians' about metabolic abnormalities, including gout and MetS, which might be accompany to AS. It would be useful for the prevention and treatment of such potential deleterious conditions in the clinical course or management of AS.

Keywords: Ankylosing spondylitis, metabolic syndrome, gout, arthritis, obesity

ÖZ

Ankilozan spondilit (AS) ve gut, artrite sebep olan inflamatuvar hastalıklardır. Metabolik sendrom (MetS), abdominal obezite, glukoz intoleransı veya diabetes mellitus, dislipidemi, hipertansiyon ve koroner arter hastalığı gibi sistemik rahatsızlıklar eşliğinde, insülin direnci ile karakterize bir sendromdur. AS ve gut birlikteliği gibi AS ve MetS birlikteliğine yönelik birkaç çalışma yayınlanmasına rağmen, literatürde AS, akut gut artriti ve MetS'un birarada olduğu bir olgu raporu bulunmamaktadır. Burada her üç bozukluğun birarada bulunduğu bir olgu sunulmaktadır. Sonuç olarak bu sunumda, AS'ye eşlik edebilen gut ve MetS gibi metabolik anormalliklerin varlığına yönelik olarak hekimlerin dikkatinin çekilmesi amaçlanmıştır. Bu durum, AS yönetimi sırasında bu gibi potansiyel zararlı durumların önlenmesinde ve tedavisinde yararlı olacaktır.

Anahtar Sözcükler: Ankilozan spondilit, metabolik sendrom, gut, artrit, obezite

INTRODUCTION

Ankylosing spondylitis (AS) and gout are two diseases that can cause inflammatory arthropathy. Although the association has been reported rarely, a recent case-control study reported that gout was more common in patients with AS than in the control group (1.94%, 0.56, odds ratio (OR): 3.53, respectively) (1). AS and gout have some common features, such as; being more common in males, genetic predisposition, joint and enthesis involvement, and good response to non-steroidal anti-inflammatory drugs (NSAIDs) (2,3). Metabolic syndrome (MetS) is an endocrinopathy that starts with insulin resistance and is accompanied by systemic disorders, such as abdominal obesity, glucose intolerance or diabetes mellitus, dyslipidemia, hypertension, and coronary artery disease (4). Studies have reported the prevalence of MetS in patients with AS to be 45.8 % and the prevalence of MetS in gout to be between 5% and 37% (5,6). There is no case report in the literature reporting the co-existence of AS, gout, and MetS in together. Here, we present a case of AS who developed MetS and gout arthritis during the disease course.

CASE REPORT

A 37-year-old male patient who had been followed up with the diagnosis of AS for about 17 years, applied to our clinic with complaints of pain, swelling, temperature increase, and redness in

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the right ankle and big toe that had started a few days earlier. The patient had no previous history of peripheral joint involvement or trauma. He had a history of methotrexate use for 2 years, infliximab for 2 years, adalimumab for 1.5 years, golimumab for 9 months, and secukinumab for 27 months previously given in different centers for the medical treatment of AS. Lastly, due to inadequate response to other medications, he was prescribed etanercept 50 mg/week. On the physical examination; patient was mobilized independently and unaided with antalgic gait on the right lower extremity. There was no neurological deficit. The right ankle and 1st metatarsophalangeal (MTP) joints were tender and swollen upon palpation. Joint range of motion was limited in the lumbar and cervical regions. Fabere-Fadir tests were positive bilaterally. Other findings were; fingertip-to-floor distance: 22 cm, chest expansion: 3 cm, Schober's test: 13 cm, waist circumference measurement: 103 cm (Figure 1), body mass index: 31.3, and arterial blood pressure: 140/95 mm/Hg. In the laboratory analysis consisting of the complete blood count and erythrocyte sedimentation rate were normal. In addition, other laboratory test results were; fasting blood glucose: 163 mg/dL (74-106 mg/dL), HbA1c: 6.0, uric acid: 11.9 mg/dL (4.8-8.7 mg/dL), alanine aminotransferase: 76 U/L (10-40 U/L), triglyceride: 321 mg/dL(<150 mg/dL), high-density lipoprotein (HDL) cholesterol: 32 mg/dL (<40 mg/dL), and C-reactive protein: 8.90 mg/L (0-7 mg/L) were measured, and HLA-B27 was positive. Conventional X-rays of the feet demonstrated non-specific findings for gout arthritis, including the secondary degenerative joint changes of 1st MTP joint (Figure 2).

The patient fulfilled harmonized MetS criteria described by Alberti et al. (7) with the current clinical and laboratory findings. It was accepted as gouty arthritis because of arthritis in the right ankle and 1st MTP joints (Figure 3) with high serum urate levels. An intramuscular single-dose corticosteroid injection (1 mL betamethasone dipropionate and betamethasone sodium phosphate) followed by oral indomethacin 100 mg/d for three days were given to the patient for acute gouty arthritis attack. After the attack subsided, he was treated with etanercept, allopurinol, and atorvastatin, besides dietary recommendations were advised and the patient was followed. No new gout attack was observed during follow-up visits. Informed consent was obtained from the patient.

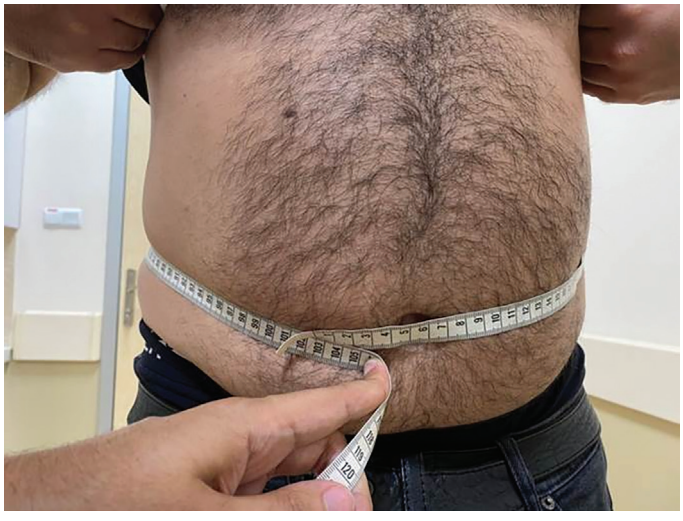

Figure 1. Waist circumference measurement of the patient

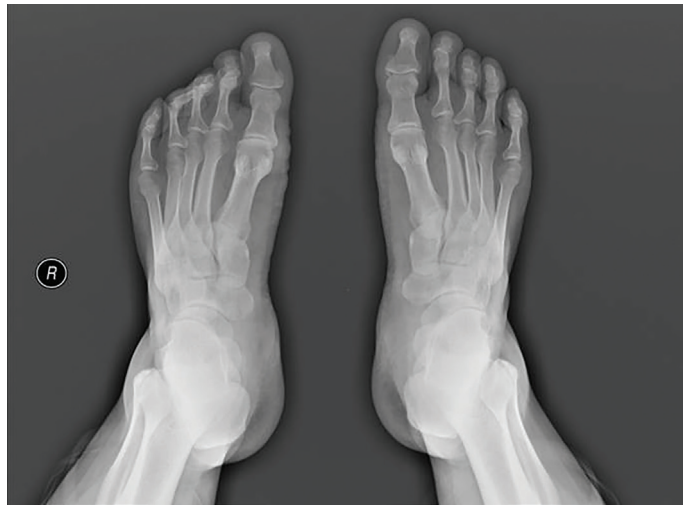

Figure 2. Degenerative changes in both 1st metatarsophalangeal joints and soft tissue swelling of the right ankle

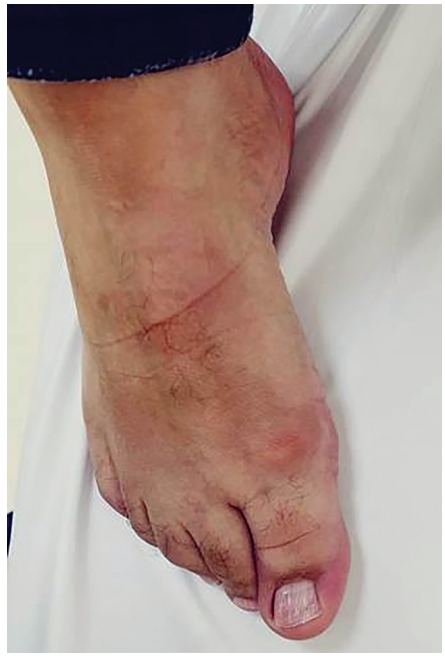

Figure 3. Acute arthritis of the right ankle and 1st metatarsophalangeal joints

DISCUSSION

AS is a chronic inflammatory rheumatic disease that mainly affects the axial skeleton, including the spine and sacroiliac joints, as well as the enthesis sites and peripheral joints (2). Gout is an autoinflammatory disease caused by the deposition of monosodium urate crystals in synovial joints. Gout has traditionally been associated with other comorbidities such as obesity, arterial hypertension, and abnormal lipid and glucose balance which are the components of MetS (8). Only a few previous studies rhave been found in the literature reporting the co-existence of gout and AS, and most of them reported an uncommon association. Recently, Ho et al. (9) analyzed 65 patients coexisting AS and gout and reported that

lower extremity joint involvement increased in patients with AS and gout, and that 61.5% of the subjects had first MTP joint involvement. Authors concluded that gouty arthritis should be kept in mind in the differential diagnosis of acute peripheral arthritis in patients with AS. In another study, it was reported that patients with AS had more gout than the control group (1.94%, 0.56, OR: 3.53, respectively). It is suggested that the use of NSAIDs in these patients might mask gout symptoms, which may be underestimation of the true prevalence of the coexistence of AS and gout (1). MetS is an endocrinopathy that starts with insulin resistance and is accompanied by systemic disorders, such as abdominal obesity, glucose intolerance or diabetes mellitus, dyslipidemia, hypertension, and coronary artery disease (4). Several diagnostic criteria for MetS have been described in the literature. Our patient met harmonized MetS criteria which consisted of increased waist circumference (≥80 cm in women, ≥94 cm in men), increased triglyceride level (≥150 mg/dL), low HDL level (<50 mg/dL in women, <40mg/dL in men), high blood pressure (SBP≥130 mmHg, DBP≥85 mmHg), and increased fasting blood glucose (≥100 mg/dL) (7). One potential mechanism underlying the association between AS and gout is MetS, which includes metabolic and cardiovascular risk factors such as obesity, visceral adiposity, hypertension, dyslipidemia, and insulin resistance. It is known that MetS is more common in patients with AS than in controls (5). MetS is also reported as common entity in hyperuricaemic and gouty patients (10). Nevertheless, gout might be overlooked or misdiagnosed in clinical practice as peripheral arthritic involvement might be associated with AS.

CONCLUSION

In conclusion, physicians should be aware of the development of metabolic diseases such as MetS and gout, which may cause increased cardiovascular risk and mortality in the management of patients with AS. Prophylactic and therapeutic options should be taken into consideration which will contribute to patients' quality of life.

Ethics

Informed Consent: It was obtained.

Footnotes

Authorship Contributions

Concept: E.K., Design: E.K., M.A., Data Collection or Processing: E.K., M.A., Analysis or Interpretation: E.K., M.A., Literature Search: M.A., Writing: E.K., M.A.

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