

Onset of Psoriatic Arthritis at the Atlantoaxial Joint: Case Report

Atlantoaksiyel Eklem Başlangıçlı Psöriatik Artrit

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ABSTRACT Psoriasis is an inflammatory skin condition that presents with red scaly rash often in extensor surfaces but may also affect the scalp and flexural areas as well as palms and soles. Psoriatic arthritis presents clinically as distal joint disease, polyarthritis, arthritis mutilans, oligoarthritis or axial disease. Atlantoaxial involvement is seen very rare in psoriatic arthritis. A typical case of psoriatic arthritis with atlantoaxial involvement and anterior atlantoaxial subluxation is discussed in the article. Anterior atlantoaxial subluxation were demonstrated by cervical x-rays, but we had a doubt about odontoid lytic erosions. Magnetic resonance imaging of the cervical spine revealed marked small fluid collection in the atlantoaxial joint and erosions in the odontoid process with contrasted T1 enhanced series. This report highlights that atlantoaxial involvement may be an early feature of psoriatic arthritis. Furthermore this can be the earliest joint impaction.

Key Words: Arthritis, psoriatic; atlanto-axial joint; inflammation

ÖZET Psöriazis, sıklıkla ekstensör yüzeylerde kırmızı pullu raş ile prezente olan inflamatuvar bir cilt hastalığıdır. Aynı zamanda saçlı deriyi, avuç içi ve ayak tabanlarını da etkileyebilir. Psöriatik artrit klinik olarak distal eklem hastalığı, poliartrit, artrit mutilans, oligoartrit veya aksiyel hastalık şeklinde prezente olabilir. Atlantoaksiyel eklem tutulumu ise psöriatik artritte çok nadiren görülür. Sunduğumuz vakanın, psöriatik artriti olup aynı zamanda atlantoaksiyel eklem tutulumu ile birlikte anterior atlantoaksiyel subluksasyonu mevcuttur. Servikal x ray görüntülemeleri anterior atlantoaksiyel subluksasyonu göstermiş fakat odontoid litik erozyonlar konusunda net bilgi vermemiştir. Bunun üzerine yapılan servikal bölgenin magnetik rezonans görüntülemesinde kontrastlı T1 ağırlıklı kesitlerde atlantoaksiyel eklemden az miktarda sıvı birikimi ile odontoid proste erozyona rastlanmıştır. Bu vakadan elde edilecek en önemli bilgi atlantoaksiyel tutulumun psöriatik artritin erken bir özelliği olabileceğidir. Hatta ilk eklem tutulumu olabileceği de akılda tutulmalıdır.

Anahtar Kelimeler: Artrit, psöriatik; atlanto-aksiyel eklem; inflamasyon

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Psoriasis is a chronic inflammatory skin disease characterized clinically by red scaly patches developing in any part of the body with a relapse-remitting course. Up to one third of patients with psoriasis may develop inflammatory arthritis presenting with pain and stiffness in the affected joints.¹ Psoriatic arthritis (PsA) presents clinically as distal joint disease, polyarthritis, arthritis mutilans, oligoarthritis or axial disease. Inflammatory cervical spine changes are not commonly seen in radiographs of patients with PsA and occurrence of it is usually delayed. In several stu-

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dies inflammatory involvement and cervical spine radiologic changes have been reported in 41%, 42%, 70%, and 75% of patients with PsA.²⁻⁴ Bobek et al reported a case series of 41 patients with PsA and confirmed the incidence of 68% (29 patients) with symptomatic cervical spine disease and 29% (12 patients) with radiological evidence of inflammatory involvement. The most frequent radiological findings were apophyseal joint changes. Ligamentous calcification and syndesmophytes were rarely found. Only one patient had subaxial subluxation.⁵ Atlantoaxial involvement is seen very rare in PsA. Similarly, data regarding atlantoaxial involvement is also scarce and diverse in the literature. Laiho and Kauppi declared atlantoaxial involvement in 8% of patients.⁶ Periodontoid pannus formation plays an important role in compromising the anteroposterior diameter of the spinal canal and in causing neurologic deficits. We present a case of PsA with atlantoaxial involvement and anterior atlantoaxial subluxation. Written informed consent was obtained from the patient for publication of this case report and accompanying images.

CASE REPORT

A 26 years old man with 10 years history of psoriasis became aware of neck pain approximately 1 year ago. With neck pain he had had multiple arthralgia for last 6 months. His cervical pain became more severe, radiating upward over the occiput. His spinal symptoms were most severe in the morning and improved with movement and nonsteroid anti-inflammatory drugs (NSAIDs) relieved the symptoms. When he was referred to outpatients clinic, physical examination showed no swelling in bilateral proximal interphalangeal joints, wrists, ankles and metatarsophalangeal joints. But he mentioned about swelling of both knees and his pain resolved with using NSAIDs. Right knee effusion was persistent for 3 months and was not resolved by oral steroids and NSAIDs. No significant skin lesions were detected but he had hyperkeratosis and discoloration in fingernails. There was no finding about sacroiliac, lumbar and dorsal spinal examination. Modified Schober test was 7 cm. His cervical pain was aggravated by any movement of the

neck, especially rotation, which was markedly restricted in the range. In neurological examination, no muscle weakness was observed in the upper and lower limbs. Additionally, there was no pathological reflex finding of upper and lower extremity. Proprioception was intact. He had no clonus, Babinski or Hoffman sign. He had a steady gait with no sway on Romberg testing.

Laboratory tests demonstrated an increase of inflammatory markers, such as C-reactive protein (CRP) (67,3 mg/L, normal <5mg/L), erythrocyte sedimentation rate (54 mm/hour, normal <20 mm/hour), but no positive results in autoantibodies, including rheumatoid factor, anti-cyclic citrullinated peptide and anti-nuclear antibodies.

Cervical x-rays were detected in hyperflexion and hyperextension in lateral position and open mouth odontoid graphy (Figure 1-4). The results demonstrated anterior atlantoaxial subluxation but we were suspicious about odontoid lytic erosions.

Magnetic resonance imaging (MRI) of the cervical spine revealed marked small fluid collection in the atlantoaxial joint and erosions in the odontoid process with contrasted T1 enhanced series (Figure 5). Sagittal T2-weighted MRI of the cervical spine demonstrated narrowing of the atlanto-dental interval and anterior subarachnoid space without spinal cord signal changes (Figure 6). In



FIGURE 1: Cervical lateral graphy neutral position.



FIGURE 2: Cervical lateral graphy in flexion view.



FIGURE 3: Cervical lateral graphy in extension view.



FIGURE 4: Open-mouth odontoid view.

addition, atlantoaxial joint distance was abnormal and there was definite evidence of atlantoaxial subluxation (Figure 7).

DISCUSSION

PsA is an inflammatory arthropathy associated with psoriasis. It involves peripheral and axial joints, dactylitis, as well as enthesitis. It has been reported that arthritis has preceded psoriasis in approximately 19% of PsA patients.⁷ Although this disorder varies considerably in its clinical manife-

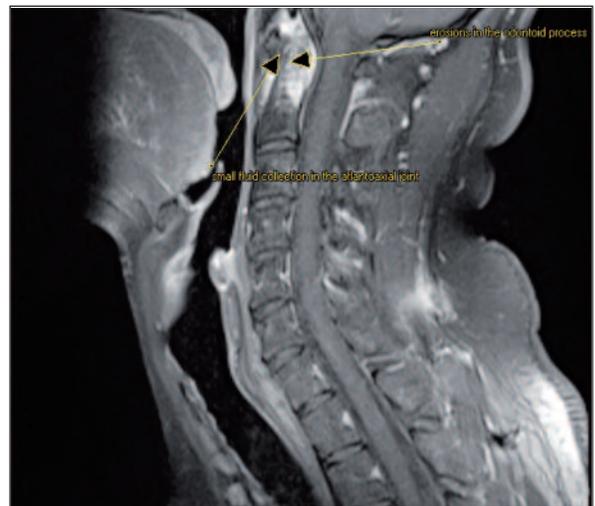


FIGURE 5: MRI views with contrasted T1 enhanced series (marked small fluid collection in the atlantoaxial joint and erosions in the odontoid process).



FIGURE 6: MRI views with sagittal T2-weighted (narrowing of the atlanto-dental interval and anterior subarachnoid space without spinal cord signal changes).

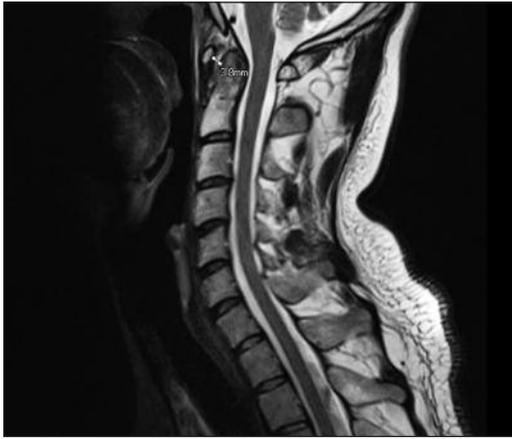


FIGURE 7: Enhanced atlantoaxial joint distance (definite evidence of atlantoaxial subluxation).

stations, some cases can be debilitating and destructive, causing erosive joint damage, functional impairment, and premature death.⁸ Cervical spine involvement in PsA is not uncommon and can often occur like ankylosing spondylitis. Typically it presents apophysial joint ankylosis and ligament calcifications. However, in some specific conditions periodontal pannus formation results in atlantoaxial instability or fusion.⁹

Clinically, arthritis of the atlantoaxial joints is likely to present as pain and stiffness in the upper cervical region, with painful restriction of rotation of the cervical spine. The pain may be referred to the occipital and auricular areas and sometimes to the orbit.

If there is neurologic deficit in clinical examination, x-rays in flexion and extension positions should be taken with a full conscious, cooperative patient. Dynamic views represent an important method for diagnosing anterior and posterior atlantoaxial instability resulting from lesions of the transverse ligament of the atlas or alar ligaments. Values between 3 mm and 5 mm indicate a lesion of the transverse ligament of the atlas and values between 5-8 mm suggest the presence of an additional lesion of the alar ligaments.

Lateral subluxation of the atlantoaxial joint only becomes evident when an x-ray in AP position is taken through the open mouth. In present

case there was no inflammatory involvement of the transvers or alar ligaments. Because of it can display an early sign of atlantoaxial involvement.

Atlantoaxial involvement and the formation of a synovial periodontoid pannus are generally associated with rheumatoid arthritis. Atlantoaxial involvement is seen very rare in PsA. There are some cases about this subject in the literature.¹⁰⁻¹² Atlantoaxial subluxation and spondylitic changes can lead to multiple cervical cord compressions in PsA patients. Lee and Lui reported a high cervical myelopathy with atlantoaxial subluxation in psoriatic spondylitis. Conversely, atlantoaxial subluxation without high cervical myelopathy has been reported in 45% of psoriatic spondylitis cases.¹³ Spadaro et al reported multiple cervical cord compressions in PsA.¹² These cases had no periodontoid synovial pannus. Furthermore the formation of a periodontoid synovial pannus and signs of myelopathy are more scarce associated with PsA.

Larsson et al. showed that compression of medulla and upper spinal cord is not caused only by atlantoaxial subluxation but frequently by periodontoid pannus formation.¹⁴ In the case we present there is a pannus tissue occupying of the atlantodental interval and anterior subarachnoid space without myelopathy.

This report describes that atlantoaxial involvement with subluxation may be an early feature of PsA, even this can be first clinical sign of joint involvement. It is important that rheumatologists should recognize this clinical manifestation early to prevent serious neurological morbidity due to spinal cord injury. Cervical spine X-rays and MRI examination are essential. MRI may show proliferation of the synovium (pannus formation), myelomalacia, and cervical canal stenosis. Symptoms and signs of cervical myelopathy, increased atlantodental interval ≥ 6 mm, evidence of myelomalacia, persistent active inflammation despite medical therapy are considered indications of surgical intervention. Finally, another important point must be addressed that whether TNF therapy is capable of regression of the pannus mass and symptomatic relief.

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