

## Case Report

# Temporomandibular Joint Involvement in Psoriatic Arthritis

Alime Okkesim, Mehmet Zahit Adisen, Melda Misirlioglu

Department of Oral and Maxillofacial Radiology, Faculty of Dentistry, Kirikkale University, Turkey

### ABSTRACT

Psoriasis is a chronic, papulosquamous, and an inflammatory skin disease. It has been found that between 5% and 24% of patients develop psoriatic arthritis (PA) at the same time after or even prior to skin findings. The involvement of temporomandibular joint (TMJ) is a rare condition. In this report, a 46-year-old male patient was referred to our clinic with the complaint of pain in the bilateral TMJs, and a limited jaw movement. Medical anamnesis revealed he had psoriasis for the last 21 years, and developed a seronegative polyarthritis with destructive changes for 8 years. On extra-oral examination, crepitation at TMJs and limitation of jaw movements was detected. The radiographic examination with cone-beam CT revealed the bilaterally decreased joint spaces, erosion, and the loss of cortical edge of the joint on the condylar heads. The definitive diagnosis of PA was made with the help of patient's history and radiological findings. The uses of non-steroidal anti-inflammatory drugs and occlusal splint have been suggested for conservative treatment.

**KEYWORDS:** Arthritis, cone-beam CT, occlusal splint, psoriasis, temporomandibular joint (TMJ)

**Date of Acceptance:**  
21-Jul-2016

## INTRODUCTION

Psoriasis is a chronic, papulosquamous, and an inflammatory skin disease, affecting 1-3% of world population and both sexes equally.<sup>[1]</sup> It can begin at any age, but mostly between ages 30 and 50.<sup>[2]</sup> However, rare cases of patients under 8 years have also been reported.<sup>[3]</sup> In Italy, the prevalence of psoriasis showed a big difference between regions such as: lowest in Sardinia with 0.5% and higher in northern regions with 4.5%.<sup>[4]</sup> In Europe, the prevalence ranges from 0.6% to 6.5%.<sup>[5]</sup>

Psoriatic arthritis (PA) is an inflammatory state that commonly involves the distal interphalangeal joints of the fingers. The other affected joints include knees, elbows, shoulders, ankles, spine, and toes. The involvement of temporomandibular joint (TMJ) is a rare condition.<sup>[6]</sup> The first case of psoriasis and arthritis occurring together in the same patient was recognized as early as in the first half of the 19th century.<sup>[7]</sup>

The etiology of PA is unclear but genetic influences, environmental, and immunologic factors may contribute in the development of the disease.<sup>[8]</sup> The inflammatory nature of the skin and joint lesions in PA is demonstrated

by synovial-lining, cell hyperplasia, and mononuclear infiltration that indicates the presence of autoimmunity, perhaps mediated by complement activation.<sup>[9]</sup>

This paper aims to describe different epidemiological, clinical, and radiological characteristics of PA, with a significance on the involvement of TMJs in the general manifestation of the disease as exemplified by the clinical case of a 46-year-old male patient.

## CASE REPORT

A 46-year-old male patient was referred to our clinic with the complaint of pain in bilateral TMJs and a limited jaw movement. He had mild symptoms for one year in TMJs, but the pain was aggravated in the last two weeks with a gradual reduction in mouth opening. The medical anamnesis revealed that the patient had psoriasis [Figure 1] for 21 years and developed a seronegative polyarthritis with

**Address for correspondence:** Dr. Alime Okkesim, Department of Oral and Maxillofacial Radiology, Faculty of Dentistry, Kirikkale University, Turkey. E-mail: dt.alimeeraslan@gmail.com

### Access this article online

#### Quick Response Code:



**Website:** [www.njcponline.com](http://www.njcponline.com)

**DOI:** 10.4103/1119-3077.222300

This is an open access article distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 3.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as the author is credited and the new creations are licensed under the identical terms.

**For reprints contact:** [reprints@medknow.com](mailto:reprints@medknow.com)

**How to cite this article:** Okkesim A, Adisen MZ, Misirlioglu M. Temporomandibular joint involvement in psoriatic arthritis. Niger J Clin Pract 2017;20:1501-4.

destructive changes, involving his ankles and knees, for 8 years. On extra-oral examination, crepitation at TMJs and limitation of jaw movements, with the maximal inter-incisal distance of 13 mm without deviation, was detected. He had pain and tenderness in both TMJs. The panoramic radiograph revealed bilaterally decreased joint spaces [Figure 2]. Cone-beam CT (CBCT) images were obtained for advanced imaging of TMJs. The tomographic images detected erosion, and the loss of cortical edge of the functional surface of the joint on the condylar heads. In addition, erosive and osteoporotic changes on the subchondral bone and surface of

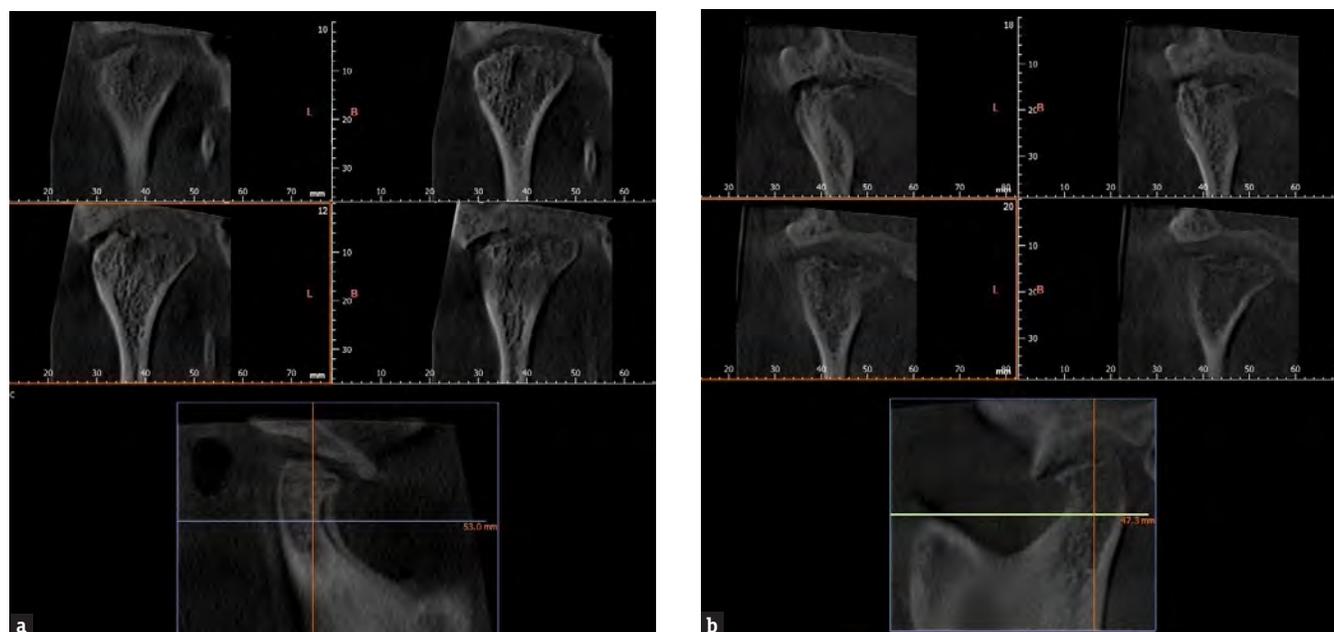
the temporal bone were observed [Figure 3]. The definitive diagnosis of PA was made with the help of patient's history and radiological findings. For the conservative treatment of PA, 50 mg of diclofenac sodium 3 times daily was prescribed to patient, and used for one month at the same time with occlusal splint therapy. Occlusal splint was used continually and the patient was followed up. The improvements to the patient's condition, increasing movements of mandible, and reduction of pain were observed in the one month after the conservative treatment. The patient is still being followed up.



**Figure 1:** Showing psoriatic lesions on hand and face



**Figure 2:** Panoramic radiograph revealed bilaterally decreased joint spaces, erosion and the loss of cortical edge on condylar heads



**Figure 3:** A) Cross-sectional images on right condylar heads showing osteoporotic changes. B) Cross-sectional images on left condylar heads showing osteoporotic changes

## DISCUSSION

The manifestations of psoriasis may involve the oral cavity in a variety of locations including buccal mucosa, lip, palate, and gingiva. While buccal mucosa is the most commonly affected area, the palate and gingiva are unusual sites for psoriatic lesions.<sup>[10]</sup> Younai and Phelan, in their review of literature, reported that among 57 patients with intraoral psoriasis, 44% of cases presented with white “plaque-like” intraoral lesions, 24% with erythematous lesions, and 13% with a mixed appearance. The remaining lesions presented as ulcerative, vesicular, pustular or indurated.<sup>[11]</sup> A higher prevalence of benign migratory glossitis, and fissured tongue in psoriatic patients compared to the general population has also been cited in many studies.<sup>[12]</sup> The primary lesions in oral cavity may be asymptomatic and collaboration with a dermatologist is necessary along with clinical examination and biopsy of the intraoral lesion.<sup>[13]</sup>

PA is an inflammatory seronegative arthritis that affects 5-8% of patients with psoriasis.<sup>[3]</sup> PA in axial and peripheral joints is an indicator of mean previous or recent psoriasis. Almost 15% of psoriatic patients never show skin indication after joint involvement. Generally, PA progresses slowly with mild symptoms, however, it can also develop quickly with severe symptoms. The etiology is multifactorial and results in an autoimmune mechanism with inflammatory and destructive features. The joint involvements are typically asymmetrical and commonly involve the distal interphalangeal joints of the fingers. The other affected joints include: knees, elbows, shoulders, ankles, spine, and toes. The common symptoms are

stiffness and pain in the joints. Five PA subgroups have been recognized: symmetric polyarthritis, asymmetric oligo-arthritis, arthritis of the distal interphalangeal joints, spondylitis, and destructive arthritis.<sup>[14]</sup>

The involvement of the TMJ correlates with the severity and duration of the systemic disease. The psoriatic lesions of the TMJ were defined as mainly erosive type. The orofacial symptomatology of psoriatic arthritis includes: noises in the TMJs, limited mandibular movements, stiffness of the jaws, pain in the jaws or face, fatigue, ear pain, and symptoms concerned to masticatory muscles. Arthralgia of TMJ itself, is a clinical sign of arthritis related to generalized PA. As the disease progresses, an increased tendency towards fibrosis can occur. Crepitus is associated with structural changes in the joint. Ankylosis, an uncommon late finding is bilateral.<sup>[15]</sup> Boyle and Buchanan gave the following three requirements before a diagnosis of PA of the TMJ could be made: (i) psoriasis, (ii) erosive polyarthritis, and (iii) negative serologic test for rheumatoid factor.<sup>[16]</sup>

The radiographic findings in PA of TMJ were first described by Lundberg and Ericson.<sup>[17]</sup> The radiographic features of the disease include: erosion of the condylar head (resulting from subchondral osteolysis) with osteoporotic lesions (healing after inflammation), formation of osteophytes, narrowing of the joint space, flattening of the condylar head, and subchondral sclerosis in later chronic disease.<sup>[18]</sup> MRI shows an unchallenged higher sensitivity than other radiological examinations. Additionally, ultrasound can be used to show effusion.

In PA patients with pain, MRI displayed effusion and disc disorders in 54% of the cases.<sup>[19]</sup>

While Könönen<sup>[20]</sup> believed that a generalized type of PA creates symptoms in the masticatory system after only seven years, Farronato *et al.*<sup>[21]</sup> presented the case of a patient whose first symptoms of PA appeared on the right TMJ. Dervis<sup>[6]</sup> found the prevalence of TMJ symptoms in 60% PA patients on clinical examination. Similarly, Salonen *et al.*<sup>[22]</sup> also found that 35% of patients reported TMJ symptoms.

The first aim of treatment is to relieve pain, initially using counselling and reassurance, as stress may exacerbate the disease within the joint. Therefore, eliminating any factor that cause stress, forms an important part of the treatment plan. Rest and the use of non-steroidal anti-inflammatory drugs have been encouraged. The use of steroids, analgesia, physiotherapy, and various types of splints have also been used in the treatment of psoriatic arthritis of the TMJs.

## CONCLUSION

The involvement of TMJ in the general clinical picture of psoriasis is rare and atypical condition. The TMJ symptoms include: pain, psychological discomfort, physical disability, and the limitation of mandibular movements can become chronic in time, affecting the quality of life negatively. Hence, collaboration between the dentist and rheumatologist is very important for early diagnosis of PA to avoid severe complications in TMJs. We suggest a conservative approach with non-steroidal anti-inflammatory drugs, and occlusal splint therapy for dental health care professionals for the initial treatment of such cases before any surgical intervention.

## Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

## Financial support and sponsorship

Nil.

## Conflicts of interest

There are no conflicts of interest.

## REFERENCES

1. Crincoli V, Di Comite M, Di Bisceglie MB, Fatone L, Favia G. Temporomandibular Disorders in Psoriasis Patients with and without Psoriatic Arthritis: An Observational Study. *International Journal of Medical Sciences* 2015;12:341-8.
2. Wang ZH, Zhao YP, Ma XC. Ankylosis of temporomandibular joint caused by psoriatic arthritis: A report of four cases with literature review. *The Chinese Journal of Dental Research* 2013;17:49-55.
3. Sidebottom AJ, Salha R. Management of the temporomandibular joint in rheumatoid disorders. *The British Journal of Oral and Maxillofacial Surgery* 2013;51:191-8.
4. Kokelj F, Miertusova Tothova S, Patamia M, Trevisan G. Our experience with etanercept in the treatment of psoriasis. *Acta Dermatovenerologica Croatica* 2006;14:241-5.
5. Chandran V, Raychaudhuri SP. Geoeidemiology and environmental factors of psoriasis and psoriatic arthritis. *Journal of Autoimmunity* 2010;34:314-21.
6. Dervis E. The prevalence of temporomandibular disorders in patients with psoriasis with or without psoriatic arthritis. *Journal of Oral Rehabilitation* 2005;32:786-93.
7. Moll JM, Wright V. Psoriatic arthritis. *Seminars in Arthritis and Rheumatism* 1973;3:55-78.
8. Fiocco U, Cozzi L, Chieco-Bianchi F, Rigon C, Vezzu M, Favero E. *et al.* Vascular changes in psoriatic knee joint synovitis. *The Journal of Rheumatology* 2001;28:2480-6.
9. Choy E. T cells in psoriatic arthritis. *Current Rheumatology Reports* 2007;9:437-41.
10. Brice DM, Danesh-Meyer MJ. Oral lesions in patients with psoriasis: Clinical presentation and management. *Journal of Periodontology* 2000;71:1896-903.
11. Younai SF, Phelan JA. Oral mucositis with features of psoriasis: Report of a case and review of the literature. *Oral Surgery, Oral Medicine, Oral Pathology, oral Radiology, and Endodontics* 1997;84:61-7.
12. Fatahzadeh M, Schwartz RA. Oral Psoriasis: An Overlooked Enigma. *Dermatology* 2016;232.
13. Khan S, Zaheer S, Gupta ND. Oral psoriasis: A diagnostic dilemma. *European Journal of General Dentistry* 2013;2:67-71.
14. Popat R, Matthews N, Connor S. Psoriatic arthritis of the temporomandibular joint—a surgical alternative to treating a medical problem. *Oral Surgery* 2010;3:47-50.
15. Kobayashi R, Utsunomiya T, Yamamoto H, Nagura H. Ankylosis of the temporomandibular joint caused by rheumatoid arthritis: A pathological study and review. *Journal of Oral Science* 2001;43:97-101.
16. Boyle JA, Buchanan WW. *Clinical rheumatology*. Blackwell Scientific 1971.
17. Lundberg M, Ericson S. Changes in the temporomandibular joint in psoriasis arthropathica. *Acta dermatovenerologica* 1966;47:354-8.
18. Koorbusch GF, Zeitler DL, Fotos PG, Doss JB. Psoriatic arthritis of the temporomandibular joints with ankylosis. Literature review and case reports. *Oral Surgery, Oral Medicine, Oral radiology, Oral Pathology, and Endodontics* 1991;71:267-74.
19. Badel T, Savić Pavićin I, Krapac L, Zadravec D, Rosić D. Psoriatic arthritis and temporomandibular joint involvement - literature review with a reported case. *Acta Dermatovenerologica Croatica* 2014;22:114-21.
20. Könönen M, Kilpinen E. Comparison of three radiographic methods in screening of temporomandibular joint involvement in patients with psoriatic arthritis. *Acta Odontologica Scandinavica* 1990;48:271-7.
21. Farronato G, Garagiola U, Carletti V, Cressoni P, Bellintani C. Psoriatic arthritis: Temporomandibular joint involvement as the first articular phenomenon. *Quintessence International* 2010;41:395-8.
22. Mease PJ, Kivitz AJ, Burch FX, Siegel EL, Cohen SB, Ory P. *et al.* Etanercept treatment of psoriatic arthritis: Safety, efficacy, and effect on disease progression. *Arthritis and Rheumatism* 2004;50:2264-72.