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CASE REPORT PEER REVIEWED | OPEN ACCESS

Association of psoriatic arthritis and temporomandibular joint ankylosis

Pradeep Devadoss, Aastha Moza, S Rajaram

ABSTRACT

Introduction: Psoriasis is a chronic autoinflammatory skin disease affecting 2–3% of global population, of whom 30% are known to have psoriatic arthritis. Psoriatic arthritis is a systemic disease involving the dermatosis along with inflammatory joint involvement. The association of psoriatic arthritis (PsA) and its clinical and radiological manifestations with the temporomandibular joint have been limited.

Case Report: This case report aims to showcase the involvement of the temporomandibular joint with a long standing systemic psoriatic arthritis. Impaired quality of life is the primary concern which this case report attempts to highlight by enumerating the association of psoriatic arthritis with accurate diagnosis of temporomandibular joint ankylosis.

Conclusion: The ambiguity in the nature of presentation of PsA can account for its lack of recognition when affecting the temporomandibular joint. A consistent preoperative evaluation and diagnostic approach toward the affected joint shall improve the patient's quality of life.

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INTRODUCTION

The relationship between arthritis and psoriasis was first observed by Alibert in 1818 and identified as a clinical entity by Bazin in 1860. It was in the early 19th century that psoriatic arthritis as a distinct disease entity was defined under the concept of seronegative spondylarthritis [1]. Psoriasis is an inflammatory relapsing dermatological disease with a multifactorial etiopathogenesis and 30% of affected population are known to present with psoriatic arthritis (PsA) which in the orofacial stomatognathic system affects the temporomandibular joint (TMJ) [2]. In the 1960s, the first case of PsA involving the TMJ joint was successfully reported. Psoriatic arthritis can occur at any age but the peak incidence is known to be between the 3rd and 5th decades of life with no gender predilection [2]. The variability of psoriatic arthritis in psoriasis is partially due to underdiagnosis and a meta-analysis showed the prevalence of undiagnosed psoriatic arthritis might be as high as 15.5% [3, 4]. The impaired quality of life is the major concern which entails the need to diagnose the TMJ ankylosis and its direct association to psoriatic arthritis.

CASE REPORT

A 48-year-old man reported to the outpatient clinic of the Department of Oral and Maxillofacial Surgery, Meenakshi Ammal Dental College, Chennai complaining of limitation in mouth opening for a year. He had a history of psoriasis for last 10 years and a history of being diagnosed with psoriatic arthritis five years ago with involvement of his ankles, knees, fingers, and toes (Figure 1). During the past year, he had a gradual decrease in the amount of mouth opening which eventually became almost nil.

The general physical examination revealed the presence of erythematous desquamative lesions on the patient's feet, knees, and shin with spondylitis. There was involvement of multiple joints including distal interphalangeal, proximal interphalangeal, metacarpophalangeal, and the wrist. Local examination demonstrated that the maximum interincisal distance was 1 mm, with complete loss of lateral and protrusive mandibular movement and without tenderness on palpation in the TMJ region and masticatory muscles. Computed tomography (CT) with contrast of the TMJ showed the presence of sclerosis with the expansion of the condylar process of the mandible with bilateral bony ankylosis (Figure 2). In end stages when conservative management with medical management is no longer effective, surgery is considered the ideal treatment plan constituting aggressive resection of the ankylotic mass, and reconstruction of the defect with alloplastic TMJ. There are reports of successful long-term results using alloplastic TMJ in the reconstruction of defects created, post-removal of ankylotic mass. In regard to the biocompatibility and high tensile strength, ultrahigh molecular weight polyethylene is the commonly chosen biomaterial for fabrication of the prosthesis.

Figure 1: Photograph of a 48-year-old male with longstanding psoriatic arthritis with involvement of temporomandibular joint.

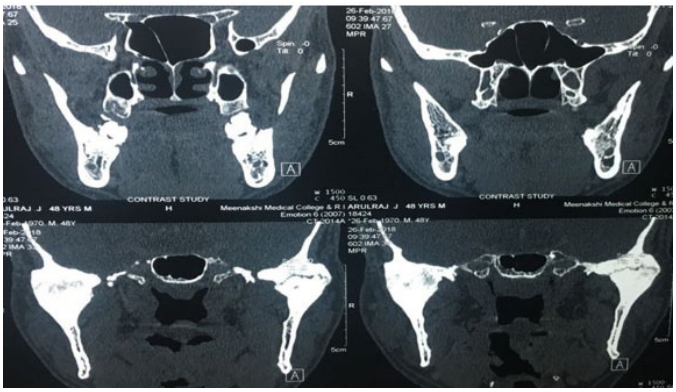

Figure 2: CT scan of mandible showing resorption of condyle with reduced joint space and presence of osteophytes in coronal view.

Figure 3: Photograph of the patient's hands, showing advanced dactylitis and various joint deformities.

Figure 4: Photograph of the patient's feet showing toe deformity, notably the left one, onycholysis is also seen.

DISCUSSION

Temporomandibular joint disorders are a significant public health problem affecting about 12% of population. They are the second most common musculoskeletal condition, resulting in pain and disability ultimately being an impairment in the patient's quality of life [5]. Psoriatic arthritis (PsA) is a chronic inflammatory arthritis presenting with clinical features with other

Figure 5: Photograph of the patient's leg showing manifestation of psoriasis on the knee and leg.

spondyloarthropathies and rheumatoid arthritis (RA). The clinical signs of an ankylosed TMJ affected by PsA are represented by the limited functionality, muscular pain, and altered opening derangement. It is usually seronegative, but a small percentage of patients may be positive for rheumatoid factor (RF) and anti-cyclic citrullinated peptide antibodies (anti-CCP). As per the diagnostic criteria for temporomandibular disorders recommendation, arthritis related to a systemic disease and categorized as "systemic arthritides" includes RA, systemic lupus erythematosus, gout, pseudo-gout, ankylosing spondylitis, and PsA [6]. The most accepted classification criteria for PsA is by the classification criteria for Psoriatic Arthritis (CASPAR) group having a specificity of 98.7% and sensitivity of 91.4% [3, 7].

The etiopathogenesis of PsA is multifactorial ranging from genetic and environmental factors involving the joints and skin dermatome primarily. Phenotypic heterogeneity and its variation are responsible for the clinical depiction of the disease and multiple cohort studies to understand the basis have been carried over time. The hypothesis accepted traditionally suggest that PsA may be classically driven as an autoimmune disease owning to the susceptibility to develop PsA with class 1 major histocompatibility complex genes [8]. Current disease paradigm places the root of pathogenic scheme to be the CD8 T^{+} cell. Although there exists a strong heritability factor, PsA is genetically not simply a subset of psoriasis rather additional HLA and probably other genes contribute to disease expression. Both RA and PsA result in the inflammation inside the lining of the joints with the involvement of the immune system. However, several key differences help to distinguish between the two. Unique to PsA is dactylitis, or the so-called "sausage digit," (Figure 3) where an individual finger or toe will swell along the full digit without prior physical trauma. Unlike PsA, RA has symmetric joint involvement, typically giving blood markers called RF and anti-CCP antibody that test positive on lab finding [6, 7].

While proving a key to the association and assessment of PsA and TMJ ankylosis as the orofacial involvement, skin manifestations are known to develop long before the musculoskeletal manifestations can be clinically appreciated. Pain, stiffness of joints, spine, tendons, and entheses are common symptoms whereas many may experience articular, articular/periarticular, and extra-articular symptoms. Oligoarticular arthritis, polyarticular arthritis, and spondyloarthritis are some of the articular manifestations. Peripheral arthritis, either oligoarticular or polyarticular arthritis, periarticular diseases, such as enthesitis, dactylitis, tenosynovitis, and cutaneous psoriasis, nail disease such as pitting, onycholysis are examples of extra-articular presentations [5, 9] (Figures 4 and 5).

CONCLUSION

Psoriatic arthritis is known to involve the TMJ which is a complex ginglymoarthrodial joint thereby altering the orofacial symptomatology. The ambiguous nature of the symptoms associated with PsA requests a thorough case history, clinical examination, laboratory, and radiographic studies for a definitive diagnosis. Psoriatic arthritis (PsA) affecting TMJ may often go underrecognized. Delayed diagnosis must be prevented since it will lead to extensive destruction of the TMJ structures causing chronic pain and impairing the quality of the life. Hence, a consistent diagnostic approach must be implemented for cutaneous psoriasis associated with TMJ arthritis and appropriate treatment must be initiated at the earliest to improve patients' quality of life.

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Author Contributions

Pradeep Devadoss – Conception of the work, Design of the work, Acquisition of data, Analysis of data, Interpretation of data, Drafting the work, Revising the work critically for important intellectual content, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

Aastha Moza – Conception of the work, Design of the work, Acquisition of data, Analysis of data, Interpretation of data, Drafting the work, Revising the work critically for important intellectual content, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

S Rajaram – Conception of the work, Design of the work, Acquisition of data, Analysis of data, Interpretation of data, Drafting the work, Revising the work critically for important intellectual content, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

Guarantor of Submission

The corresponding author is the guarantor of submission.

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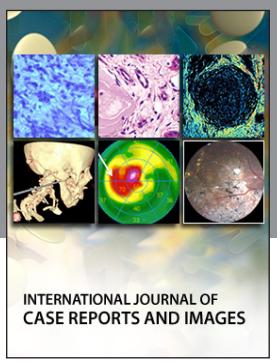
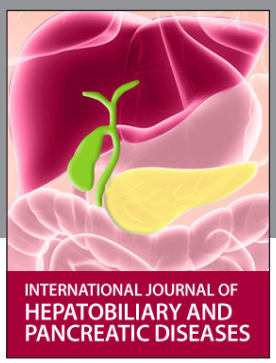
Conflict of Interest

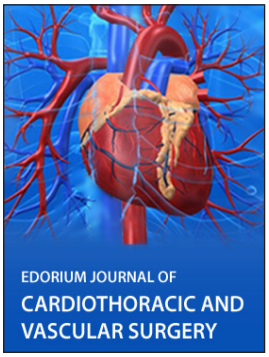
Authors declare no conflict of interest.

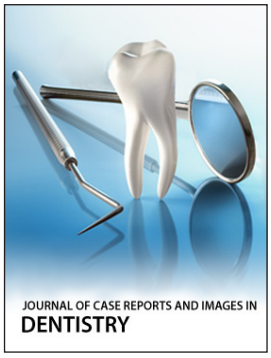
Data Availability

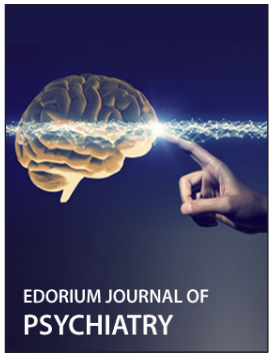
All relevant data are within the paper and its Supporting Information files.

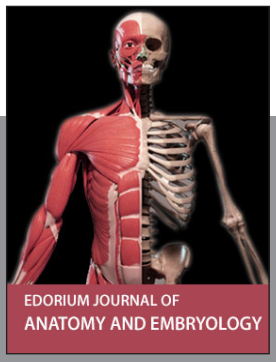


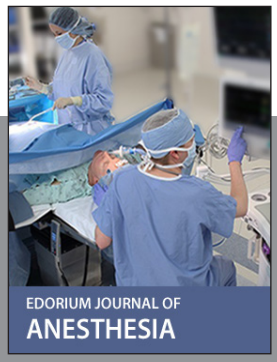












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