



Evaluation of radiological changes of symphysis pubis in patients with psoriatic arthritis

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ARTICLE INFO

Keywords:

Psoriatic arthritis
Spondyloarthropathy
Symphysis pubis

Received: Mar 04, 2023

Accepted: May 05, 2023

Available Online: 26.05.2023

DOI:

[10.5455/annalsmedres.2023.03.064](https://doi.org/10.5455/annalsmedres.2023.03.064)

Abstract

Aim: Psoriatic arthritis (PsA) is a member of the spondyloarthropathy (SpA) group of diseases; it can lead to joint damage by causing bone erosions and/or new bone formation in the axial or peripheral musculoskeletal system. Symphysis pubis is an important joint area that can be frequently involved in rheumatologic diseases. Pubic radiological changes have been evaluated in some rheumatologic disease except PsA. In our study, we aimed to investigate the symphysis pubis joint changes in PsA and wanted to draw attention to pubic joint involvement, which is often overlooked and causes hip and inguinal pain.

Materials and Methods: Pelvic and sacroiliac joint radiographs of 61 PsA patients were retrospectively analyzed. All patients were older than 18 years of age, met the criteria for the Classification Criteria for Psoriatic Arthritis (CASPAR), had no history of pubic trauma, had a disease duration of at least 5 years. Articular involvement patterns of the patients (asymmetric oligoarticular, symmetrical polyarticular, distal interphalangeal joint and axial involvement), dactylitis, scalp and nail involvement were also examined, and the relationship of these clinical conditions with changes in the symphysis pubis was investigated.

Results: In the study, the data of 61 patients, 41 (67.2%) female and 20 (32.8%) male, diagnosed with PsA according to the CASPAR criteria were evaluated. There was pubic involvement in 15 (26.2%) patients. Sacroiliac involvement, scalp involvement of psoriasis and presence of dactylitis were found to be higher in patients with pubic involvement. Axially involved PsA (60%) was the most common in those with pubic involvement.

Conclusion: We showed that there are pubic changes in patients and that pubic involvement is more common in the presence of scalp involvement and dactylitis.



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Introduction

Psoriatic arthritis (PsA) is a chronic progressive inflammatory arthritis associated with psoriasis. Findings similar to spondyloarthropathies (SpA) such as dactylitis, enthesitis, uveitis, peripheral and axial joint involvement are seen.

Symphysis pubis is a non-synovial fibrocartilagenous joint composed of opposing pubic bones and a fibrocartilagenous disc between them [1]. Conditions that can be detected in imaging methods such as enlargement, erosion and destruction of the symphysis pubis may be developed due to inflammatory, infectious, neoplastic, traumatic and metabolic diseases. It has been shown that there are structural changes in this joint in inflammatory rheumatologic diseases [2].

SpA is a group of inflammatory rheumatological diseases that share many clinical features on the basis of common

genetic predisposition factors. Its characteristic findings are peripheral arthritis, enthesitis and axial skeletal inflammation such as spondylitis and sacroiliitis. Changes in the symphysis pubis were observed in patients with ankylosing spondylitis (AS), which is an important member of SpA group diseases, and an increase in changes was observed with long disease duration [3].

Psoriasis is an autoimmune dermatological disease that can cause skin, scalp and nail involvement as a result of excessive proliferation of keratinocytes and can be triggered due to etiological reasons such as genetic, environmental and infectious [4]. PsA is a chronic inflammatory disease in which bone erosions and/or new bone formation can be observed in the axial or peripheral musculoskeletal system and is a member of SpA group diseases. PsA affects 0.1-1% of the general population and approximately 30% of patients with psoriasis. Moll and Wright divided PsA into five clinical patterns as distal interphalangeal joint arthritis, asymmetric oligoarthritis, symmetrical polyarthritis,

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axial spondylitis and arthritis mutilans according to the type of involvement [5]. However, no radiologic evaluation of symphysis pubis in patients with PsA has yet been reported in the literature. Herein, this study aimed to evaluate the symphysis pubis radiological changes in cases with PsA.

Materials and Methods

Pelvic and sacroiliac joint radiographs of 61 PsA patients followed in Giresun University Faculty of Medicine Physical Medicine and Rehabilitation outpatient clinic were retrospectively analyzed. All patients were older than 18 years of age, met the criteria for the Classification Criteria for Psoriatic Arthritis (CASPAR), had no history of pubic trauma, had a disease duration of at least 5 years. 20 male, 41 female patients were evaluated. The present study was approved by the Research and Ethics Committee of Clinical Studies linked to Giresun Training and Research Hospital, under the 13.02.2023/14 approval number.

The radiographs were scored independently by 2 different clinicians. Sacroiliac joint changes according to 1984 modified New York criteria [6] 0: normal, 1: suspicious changes, 2: mild irregularity and sclerosis, 3: significant erosion without ankylosis, 4: complete ankylosis, symphysis pubis scoring was performed similar to the radiographic staging of the sacroiliac joint [7] 0: normal, 1: mild irregularity and/ or subchondral sclerosis, 2: erosion, 3: partial ankylosis, 4: total ankylosis. Right and left sacroiliac joints were evaluated separately. Articular involvement patterns of the patients (asymmetric oligoarticular, symmetrical polyarticular, distal interphalangeal joint and axial involvement), dactylitis, scalp and nail involvement were also examined, and the relationship of these clinical conditions with changes in the symphysis pubis was investigated.

Results

In the study, the data of 61 patients, 41 (67.2%) female and 20 (32.8%) male, diagnosed with PsA according to the CASPAR criteria were evaluated. The mean age of the patients was 51.80±12.47. There was pubic involvement in 15 (26.2%) patients. Six of the patients were stage 1, 9 were stage 2. Demographic data and disease findings of PsA patients with and without pubic involvement are shown in Table 1. There was no difference between the 2 groups in terms of age, gender, presence of axial involvement and

Table 1. Comparison of demographic and disease characteristics of psoriatic arthritis patients according to presence of pubic involvement.

	With pubic involvement (n=15)	Without pubic involvement (n=46)	P value
Age, year	50.37±12.24	56.20±12.54	0.117
Gender			1.00*
Female	10 (66.7)	31 (67.4)	
Male	5 (33.3)	15 (32.6)	
Sacroiliac Involvement			0.024*
Yes	9 (60.0)	11 (23.9)	
No	6 (40.0)	35 (76.1)	
Sacroiliac Involvement (n=20)			0.070*
Unilateral	1 (11.1)	6 (54.5)	
Bilateral	8 (88.9)	5 (45.5)	
SpA Type			0.085**
Axial	9 (60.0)	16 (34.8)	
Non-axial	6 (40.0)	30 (65.2)	
Scalp Involvement			0.010*
Yes	6 (40.0)	4 (8.7)	
No	9 (60.0)	42 (91.3)	
Nail Involvement			0.393*
Yes	3 (20.0)	5 (10.9)	
No	12 (80.0)	41 (89.1)	
Dactylitis			0.017*
Yes	5 (33.3)	3 (6.5)	
No	10 (66.7)	43 (93.5)	

*Fisher's Exact Test, ** Pearson Chi-Square test Footnote: Age is presented as mean±standart deviation, other parameters are presented as n, %.

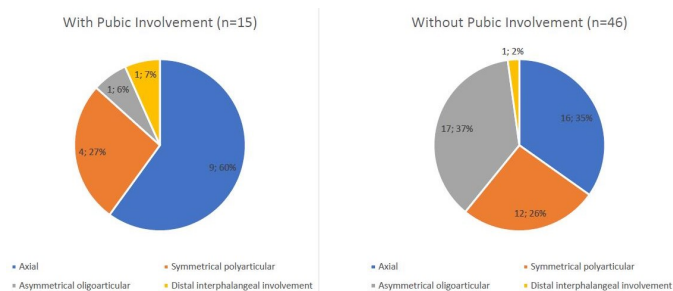


Figure 1. Types of psoriatic arthritis according to the presence of pubic involvement.

nail involvement. Sacroiliac involvement, scalp involvement of psoriasis and presence of dactylitis were found to be higher in patients with pubic involvement (p=0.024, p=0.010, p=0.017, respectively). When only patients with sacroiliac involvement were evaluated; although it did not reach the level of statistical significance, the rate of bilateral sacroiliac involvement in patients with pubic involvement (88.9%) was higher than those without pubic involvement (45.5%) (p=0.070).

PsA types according to the presence of pubic involvement are shown in Figure 1. Accordingly, axially involved PsA (60%) was the most common in those with pubic involvement, while symmetrical polyarticular type PsA (26.7%) was the second most common. In those without pubic involvement, asymmetrical oligoarticular type PsA was most common (37%), while PsA with axial involvement (34.8%) was the second most common.

Discussion

In this study, in which we aimed to evaluate the pubic changes in PsA and the relationship of these changes with the clinical features of the disease, we showed that there

are pubic changes in patients and that pubic involvement is more common in the presence of scalp involvement and dactylitis. These findings suggest that pubic involvement may also be effective in hip pain that can be seen in PsA. Studies evaluating symphyseal changes in PsA are lacking in the literature. Therefore we performed a study to take attention symphyseal changes and the relationship between these changes and clinical findings. Although axial involvement is less common than peripheral involvement in PsA, axial involvement may occur without peripheral involvement. Axial PsA has similar radiographic changes in the sacroiliac, discovertebral, apophyseal, costovertebral joints like in AS. Studies have shown that there are changes in the symphysis pubis in patients with AS, and it has been observed that changes are more common in patients with a long disease duration [3,7]. It has been found that axial spine damage and symphysis pubis changes show similar progression in AS patients [7]. This result may suggest that symphyseal changes may be an indicator of axial damage. In our study, symphyseal changes were found in patients with PsA with a disease duration longer than 5 years, and these changes were found to be more common in PsA patients with axial involvement than in other clinical types. moreover, it has been shown that sacroiliac joint involvement is more common in patients with pubic changes. It has been shown that nail dystrophy, increased number of involved joints, periostitis and increased erythrocyte sedimentation rate increase the risk of axial disease in PsA [8]. In our study, no significant relationship was found between nail involvement and pubic changes consistent with axial progression, but we found that pubic changes were higher in scalp involvement, which increases the risk of transition from psoriasis to psoriatic arthritis [9]. Dactylitis, defined as full-thickness inflammation of the finger, is quite common in PsA patients [10] and has been shown in studies to be associated with radiographic joint damage [11].

In our study, it was observed that radiographic changes in the symphysis pubis were more common in patients with dactylitis. There are some limitations of our study. Radiological changes in the axial spine were not evaluated in our study, and imaging modalities such as magnetic resonance imaging (MRI), where active inflammation can be demonstrated quite effectively, were not used. The relationship with HLA-B27, which is considered an important gene allele for SpA group diseases, was not investigated. In addition, childbirth is an important cause of pubic trauma, a limitation is that this situation was not taken into account in the female patients included in the study. The absence of patients with stage 3 and stage 4 pubic involvement is an also limitation of our study.

In our study, we established that symphysis pubis involvement is present in 26.2% of PsA patients and that pubic involvement is more common in scalp involvement, which is an important risk factor in the transition from psoriasis to PsA, and dactylitis, which is associated with radiographic joint damage. Further studies using genetic factors and different imaging modalities such as MRI are needed to evaluate these findings in more detail.

Ethical approval

The present study was approved by the Research and Ethics Committee of Clinical Studies linked to Giresun Training and Research Hospital, under the 13.02.2023/14 approval number.

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