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Midterm analysis of the relationship between psoriasis skin severity and joint involvement .

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Abstract

Background:

Psoriasis is a common skin disease. Up to 30% of patients with psoriasis develop psoriatic arthritis resulting, by far, the most prevalent coexisting condition. Aim :The purpose of this study is to evaluate the prevalence of psoriatic arthritis amongst patients with psoriasis,to describe the clinical patterns of arthritis in psoriasis and to evaluate the relationship between skin severity and joint activity.

Methods :

This study is noninvasive , cross sectional study, carried out at Anil Neerukonda hospital, NRI institute of medical sciences between January 2020 and January 2022 i.e for 2 years, in which 400 patients presenting with psoriasis to the hospital were screened for psoriatic arthritis according to CASPAR criteria,nail involvement were assessed by the Psoriasis Area Severity Index (PASI). The Joint disease activity was measured by clinical diagnosis activity index (CDAI).

Result :

In our study mean patient age was mean - 38.17 years, 216 patients (54%) were female and 184 male (46%) , 40 (10%) patients had Psoriatic arthritis out of which 16 (40%) had Family History of psoriasis .The mean PASI of the patients with psoriatic arthritis was 3.105+3.04 and 8 out of 40 psoriatic arthritis patients (20%) had Nail changes. The clinical characteristics of Psoriasis arthritis were most common pattern being Asymmetrical oligoarthritis 24 cases(60%), followed by Symmetrical polyarthritis 10 (25%), followed by Spondyloarthropathy 5 (12.5%) and predominant Distal interphalangeal joint arthritis 3 (7.5 %) .The mean CDAI was 5.71+3.94 . There was no significant correlation of clinical diagnosis activity index (CDAI) with PASI.

Conclusion:

There is a relatively low prevalence of joint manifestations among patients with psoriasis presenting to our hospital. There was no significant correlation between the severity of skin involvement(PASI) and joint manifestation or arthritis(CDAI).

Keywords :

Psoriasis arthritis, Psoriasis area severity index (PASI),Clinical diagnosis activity index (CDAI) .

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Introduction

Psoriatic arthritis is a type of seronegative spondyloarthropathy that occurs in association with psoriasis..About 7 to 42% of people with psoriasis develop psoriatic arthritis [1].Psoriasis is a common inflammatory skin disorder typically presenting as a papulosquamous disease with variable distribution,severity, and course[2]. Although this disease was once thought to be a rare and mild form of arthritis, recent studies have shown that affected patients
may develop significant disability [3,4] . The family history is usually supportive in making a diagnosis [4].The mean age of disease onset is between 30 to 55 years and is with equal gender distribution [5,6.]
There is no specific biological marker for diagnosing psoriatic arthritis,upto 20% of patients have high serum uric acid and elevated acute phase reactants like CRP,which correlate with disease activity[7.8.]
Patients with psoriasis usually develop joint symptoms after 5 to 10 years, but may present at the same time or even precede the skin manifestations.Some studies suggest that psoriatic arthritis occurs more commonly among patients with severe psoriasis [9,10.]

The course of psoriatic arthritis is variable, ranging from mild non destructive or mono articular disease to debilitating erosive arthritis or arthritis mutilans. The purpose of this study is to evaluate the prevalence of psoriatic arthritis amongst patients with psoriasis,to describe the clinical patterns of arthritis in psoriasis and to evaluate the relationship between skin severity and joint activity.

Methodology :

This study is noninvasive , cross sectional study, carried out at Anil Neerukonda hospital, NRI institute of medical sciences between January 2020 and January 2022 i.e for 2 years.Psoriasis was diagnosed clinically based on the presence of characteristic
skin lesions.An informed consent was taken from all the patients included in the study.
400 patients presenting with psoriasis to the hospital were screened for psoriatic arthritis according to CASPAR criteria,Which is a patient must have established inflammatory articular disease (joint, spine, or entheseal) and a score of at least 3 based on the following categories: current psoriasis (assigned a score of 2; all other features
assigned a score of 1), a history of psoriasis (unless current psoriasis was present), a family history of psoriasis (unless current psoriasis was present or there was a history of psoriasis), dactylitis, radiographic evidence of juxta-articular new bone formation, a negative test for RF, and typical nail dystrophy[11].
Skin and nail involvement were assessed by the Psoriasis Area Severity Index (PASI score ranges from 0 to 72, mild 0-3,moderate 3-10, and severe >10)[12]
40 patients were thus diagnosed to have psoriatic arthritis as per CASPAR criteria and their joint involvement was noted. The Joint disease activity was measured by clinical diagnosis activity index (CDAI).The CDAI comprised four assessments: Swollen (28) joint count,

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tender (28) joint count, Patient Global disease Activity and physician Global disease Activity, where CDAI ≤ 10 was low and CDAI > 10 was considered moderate-high.[13]
We have used the Chi square test with $p < .05$ as significance level for our statistical analysis.

Results :

40 patients were diagnosed to have psoriatic arthritis out of 400 patients presenting to the hospital with psoriasis.Patient's clinical characteristics are shown below (Table 1)
The age of the study population varied between 22 years to 54 years (mean - 38.17±11.62 years).216 patients (54%) were female and 184 male (46%) , 40 (10%) patients had Psoriatic arthritis as per CASPAR criteria, out of which 16 (40%) had Family History of psoriasis .Duration of Psoriasis arthritis (PsA) range from (1 - 6 years). The duration of patients with psoriatic arthritis having skin lesions was ranging from 1 - 10 years.The mean PASI of the patients with psoriatic arthritis was 3.105±3.04 and the mean CDAI was 5.71±3.94 .Positive family history was seen in 16 out of 40 psoriatic arthritis patients (40%) and nail changes were seen in 8 patients (20%).Our study did not have any patients with isolated dactylitis or enthesitis. Rheumatoid factor assay was negative in all our patients and inflammatory markers(ESR, CRP) were raised in 6 cases(15%).The clinical characteristics of Psoriasis arthritis are shown below (Table 2),most common pattern being Asymmetrical oligoarthritis 24 cases(60%), followed by Symmetrical polyarthritis 10 (25%), followed by Spondyloarthropathy 5 (12.5%) and predominant Distal interphalangeal joint arthritis 3 (7.5 %) .The relationship between joint disease activity and skin disease severity are shown below (Table 3).Patients with PASI=0 were 3,low PASI were 26 and High PASI were 11.
Clinical disease severity index (joint involvement)-Low CDAI were 35 and Moderate/High CDAI were 5 . We found no significant correlation of clinical diagnosis activity index (CDAI) with PASI .In our study p value was .514444 (The result is not significant at $p < .05$) and
the severity of skin manifestations had no significant relation with joint disease.

Table 1: Clinical characteristics of patients in Psoriatic arthritis

age	22 years to 54 years (mean±SD - 38.17±11.62 years)
sex	216 patients (54%) - female 184 (46%) - male
Duration of psoriatic arthritis	1 - 6 years
Duration of psoriasis (skin lesions) in patients with psoriatic arthritis	1 - 10 years
PASI (Psoriasis Area Severity Index)	Mean =3.105±3.04
Family History of psoriasis	16 (40%)

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Nail change	8(20%)
Clinical Diagnosis Activity Index CDAI	M=5.71±3.94

Table 2: Patterns of psoriatic arthritis.

Asymmetrical oligoarthritis	24 cases(60%)
Symmetrical polyarthritis	10 (25%)
Spondyloarthropathy	5 (12.5%)
Distal interphalangeal involvement	3 (7.5 %)

Table 3 :Relationship between joint disease activity (CDAI) and skin disease Activity (PASI).

PASI	PASI = 0	Low PASI = (> 0-3)	Mod/High PASI > 3	
Low CDAI	2	23	10	
Mod/High CADI	1	3	1	
Chi square	The p-value is .514444. The result is not significant at p < .05.			

The chi-square statistic is 1.3293. The p-value is .514444. The result is not significant at p < .05.

Discussion :

Psoriatic arthritis is a chronic, seronegative,inflammatory spondyloarthropathy effecting 6.25% to 48%[14,15] among psoriasis patients in Europe, North America, and South Africa, but low prevalence has been observed in Asian countries ranging from 1% to 9% among psoriasis patients [16-21].We found the prevalence of psoriatic arthritis to be 10% in our study of over a period of 2 years.

The mean age at onset of PsA was 39.2 years (fourth decade) in Chinese population [18].Another Indian study[21] has reported a peak incidence (69%) of PsA in the fourth and fifth decades of life [22].In our study the mean age was 38 years (38.17±11.62).

Wright [23]and Jajic and el-Assadi [24] and some Indian studies[25] have reported male predominance in psoriatic arthritis ,while Nigam et al. [27] have reported a female predominance.Our study had female predominance with 54% being them.

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The most frequent presentations are polyarthritis, followed by oligoarthritis. Distal involvement alone occurs in less than 20% of cases and may be associated with spondyloarthritis [28,29]. Our study found variation with the most common pattern being Asymmetrical oligoarthritis, followed by Symmetrical polyarthritis, followed by Spondyloarthropathy and Distal interphalangeal joint.

There is a controversy about the relationship between severity of skin lesions and Psoriatic arthritis. Some studies suggested that patients with PsA have more severe psoriasis,[18,30] , while others reported that there is no direct association between the severity of psoriasis and joint manifestations.[31,32] The mean PASI of our study group was Mean =3.105$\pm$3.04. We did not observe significantly higher PASI in our patients with Psoriatic arthritis.

The limitation of our study was that this was a cross-sectional study with a relatively small sample size. Longitudinal follow-up of large number of patients will provide us more information regarding the changing pattern of PsA and the relationship between the site and type of skin involvement with joint disease.

Conclusion :

There is relatively low prevalence of psoriatic arthritis in the patients visiting our hospital and there is no significant relationship between the severity of skin symptoms and joint disease.

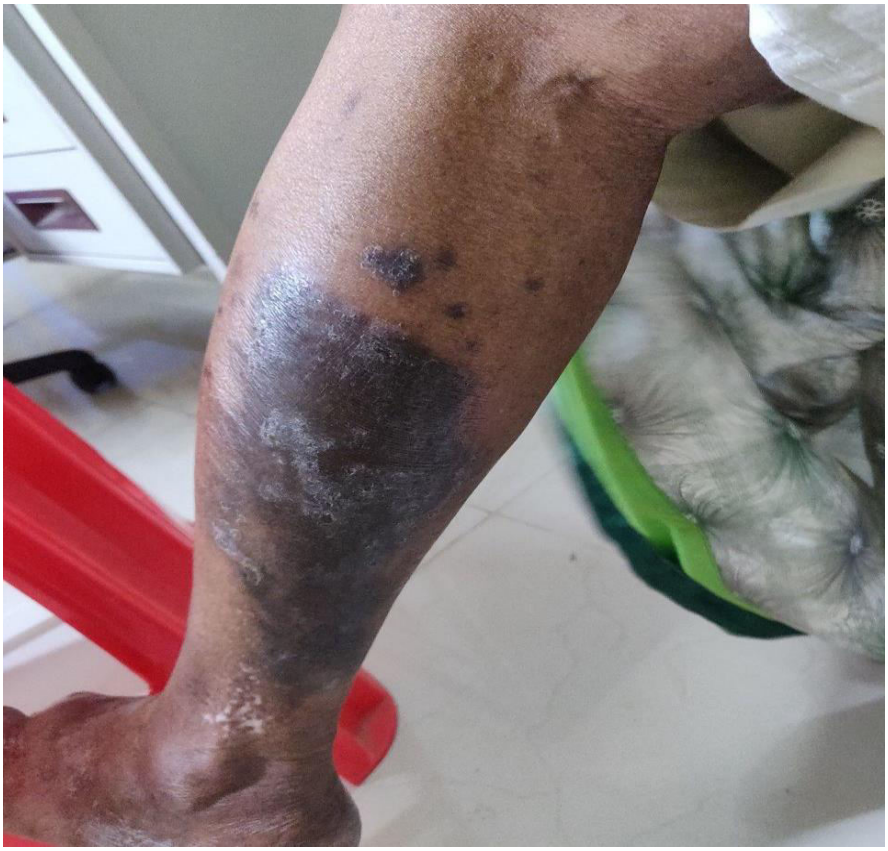

Image 1 : Psoriatic lesion (plaque type) on the posterior aspect of calf.

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Image 2 :

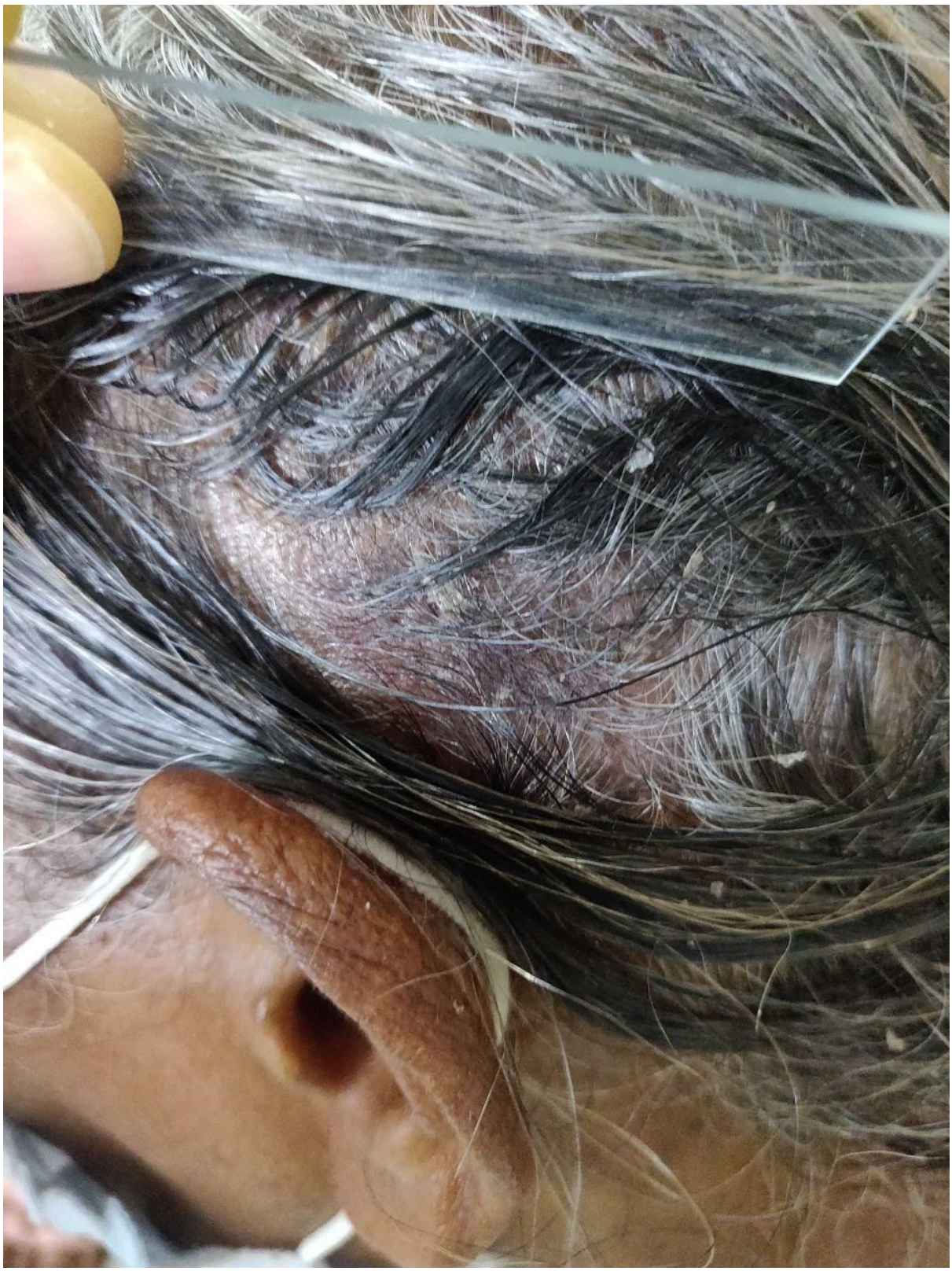

Image 2 : Typical hidden psoriasis lesion of scalp.

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Image 3 :

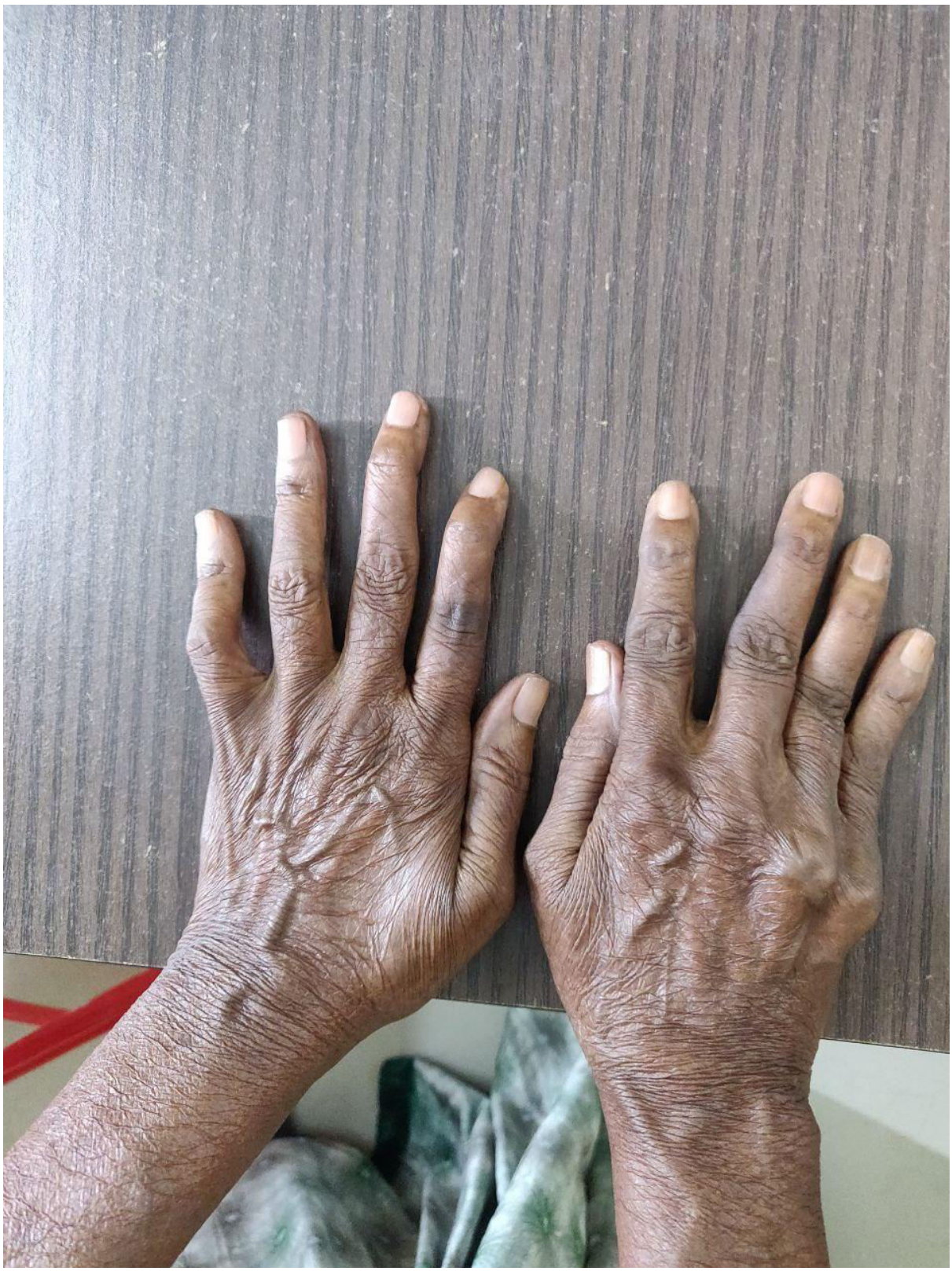

Image 3 :Psoriatic arthritis affecting both hands (MCP,PIP,DIP) .

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Image 4 :

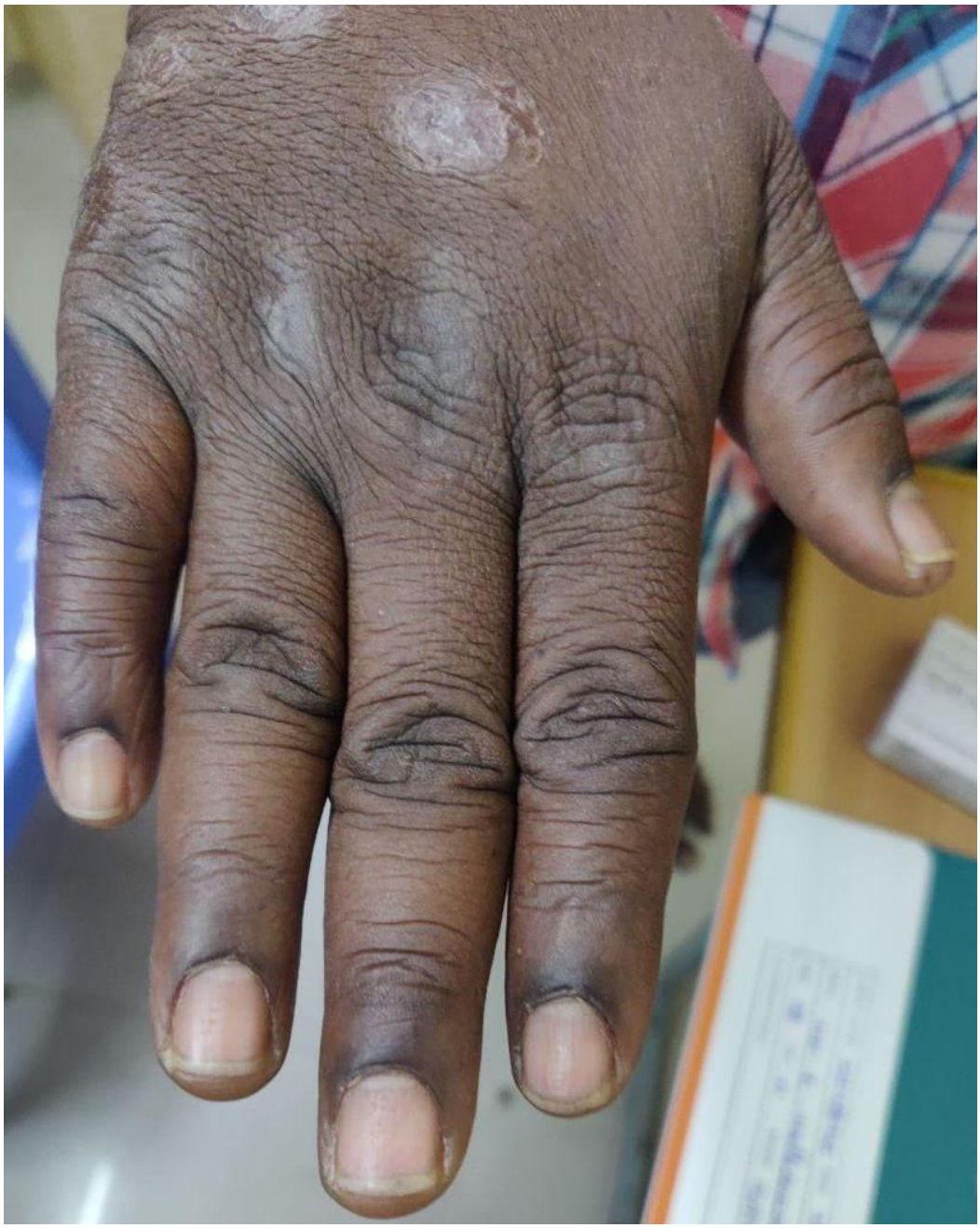

Image 4 : Typical Pitting type of nail changes in psoriasis.

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