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A STUDY OF NAIL CHANGES IN PSORIASIS AND LICHEN PLANUS

Dermatology

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ABSTRACT

BACKGROUND: Nail involvement is an extremely common feature of psoriasis and it affects approximately 10-78% of patients. In lichen planus nail involvement occurs in 10% of patients.

AIM: The present study was undertaken to evaluate the nail changes in psoriasis and lichen planus attending our outpatient department.

METHODS AND MATERIALS: 60 consecutive cases were taken into the study after informed consent of which 46 cases were diagnosed as psoriasis and 14 cases as lichen planus on clinical parameters.

RESULTS: In our study of 60 patients, 46 had psoriasis and 14 had lichen planus.

Pitting was found to be the most common manifestation in finger nails(73.9%)

CONCLUSION: In both psoriasis and lichen planus patients pitting was found to be the most common manifestation and fingernails were more commonly affected than toenails.

KEYWORDS

Nail changes, Psoriasis, Lichen planus

INTRODUCTION :

Psoriasis is a common and chronic debilitating illness that involves skin, nails and joints. The population prevalence is estimated to be 1%–3% varying across different ethnic groups.[1] With an increase in disease duration, the incidence of nail affliction is found to increase to a lifetime prevalence of 80%–90%.[2] Furthermore, in individuals with joint disease, the nail involvement is higher, to the tune of 90%.[3] However, isolated nail psoriasis is less common with the incidence being between 5%–10%.

Lichen planus (LP) is defined as a subacute, chronic dermatosis characterized by small, flattopped, shiny, polygonal violaceous papules that may coalesce in to plaques.[4]The exact pathogenesis of the disease is not known, but both T-cell mediation and antibodies have been implicated.[5]

MATERIALS AND METHODS:

The study was conducted in the department of Dermatology, Venereology and Leprology at PSIMS & RF, Gannavaram. 60 consecutive patients with nail findings presenting to our tertiary care setup were recruited after an informed written consent. A complete history was taken regarding the age, sex, chief complaints, site, duration of disease, duration of onset of nail changes, seasonal variation, personal history including relevant drug history, past history, family history and physical examination was done.

Nail changes were documented along with photographic assessment. The severity of nail involvement in psoriasis patients was assessed with Nail Psoriasis Severity Index.[6]

STATISTICALANALYSIS:

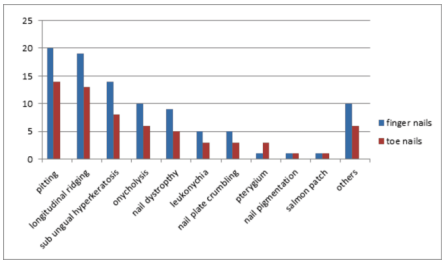
The clinical and nail findings were recorded and correlated. Data were analyzed using SPSS Statistics for Windows, version 20.0.

RESULTS:

60 consecutive cases were taken into the study after informed consent of which 46 cases were diagnosed as psoriasis and 14 cases as lichen planus on clinical parameters, out of which 8 patients did not show any findings.

Out of the 46 psoriasis patients, 42 patients (91.3%) showed nail changes. The mean age ± SD was 42.56 years ± 14.45 with a range of 18 to 69 years. 30 (65.2%) males and 16 (34.7%) females comprised the study population. Mean duration of the disease ± SD was 56.21± 43.87 months with duration ranging from 6 months to 192 months. Mean duration ± SD of nail changes after the onset of disease was 29.35 ± 25.91 months.

Chart 1: Pattern Of Nail Changes In Psoriasis



Among the nail matrix changes, the most common finding was pitting (73.9%) (fig 1) followed by leukonychia and nail plate crumbling, whereas among the nail bed changes, the most common were subungual hyperkeratosis(47.8%) followed by onycholysis (34.7%) and salmon patch (4.34%). Apart from the nail matrix and nail bed chages, longitudinal ridging (69.5%) was the second common finding in psoriasis patients,the first being pitting (73.9%). These changes were more frequently seen in fingernails than toenails.

The mean nail psoriasis severity index ± SD of the study cohort was 21.73 ± 20.90. The scores were comparitively higher for the fingernails than for the toenails (15.25 ±11.10 vs. 13.5 ± 9.54) but the difference was not found to be significant (p=0.49)

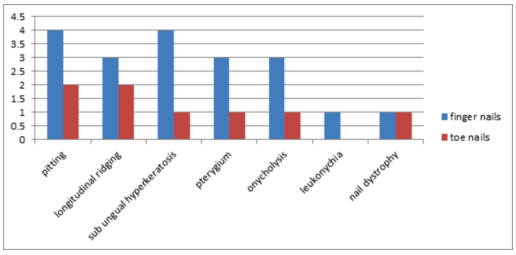
Furthermore, nail psoriasis severity index was higher in patients with longer duration of disease, with a significant association (p<0.0001). No significant association was found between the onset of nail changes and the disease duration (p=0.12) , but there was a significant association between onset of nail changes and nail psoriasis severity index (p=0.002).

Out of the 14 lichen planus patients 8 patients (57.14%) had nail changes.

The mean age ± SD was 46.14 ± 10.63 years with a range of 30 to 65 years.

6 (42.8%) males and 8 (57.14%) females comprised the study population. Mean duration of the disease ± SD was 51.28 ± 28.63 months with duration ranging from 8 months to 120 months. Mean duration ± SD of nail changes after the onset of disease was 28.5 ± 13.63 months.

Chart 2: Pattern Of Nail Changes In Lichen Planus



Among the pattern of nail changes the most common finding is pitting followed by longitudinal ridging and subungual hyperkeratosis.These changes were commonly seen in finger nails than toe nails.

Significant difference was found between the onset of nail changes and duration the disease (p=0.04)

DISCUSSION:

The present study evaluated 60 patients with nail involvement. Out of them nail changes were seen in 91.3% of psoriasis patients and 57.14% of lichen planus patients.

In our patients, the most common findings seen in nails in both psoriasis and lichen planus were small irregular pits (image 1) over the nail plate.

They were seen as indentations over the nail plate and are irregular, both in size and shape. Pits results from defective nail formation in the proximal portion of the nail matrix.[7] The keratinization of the stratum corneum of the proximal nail matrix is disrupted leading to formation of parakeratotic cells.[8] These columns of loose parakeratotic cells fall off leading to deep and coarse pits later.[9,10,11]

This finding is in concordance with earlier reported work.[12,13]

Next common finding observed in our study was longitudinal ridging(69.5%) Changes on the surface of the nail due to ageing can be seen as increased longitudinal furrowing or ridges and increased friability and fissuring.[14] Ageing is the commonest cause of onychorrhexis or superficial longitudinal ridges.[15]

In a study done by Sudhakar et al.,they found prominent/increased longitudinal ridges(were seen in 85% of cases, with no significant association between the percentages of finger and toe nails involved [16] which is in concordance with our study.

We compared the affection of fingernails and toenails and found that fingernails were more commonly affected in both psoriasis and lichen planus than toenails which was in accordance to what was found in earlier studies.[17]

Lichen planus thins the nail plate, which may become grooved and ridged. The nails may darken, thicken or lift off the nail bed (onycholysis). Sometimes the cuticle is destroyed and forms a scar (pterygium-image 2).

Twenty-nail dystrophy (trachyonychia) is a clinical entity characterized by nail roughness caused by excessive longitudinal ridging. The condition may involve all 20 nails or be limited to 1 or several digits [18] which is a characteristic nail finding seen in most of the cases of lichen planus. And we couldn't see this finding in our study.

Table 1: Comparison Of Our Study (lichen Planus) With Other Studies

Nail changes	Antonella Tosti et al 25	our study
Longitudinal ridging	4	5
Nail plate thinning	5	0
Trachyonychia	1	0
Pterygium	0	4

Nail Psoriasis Severity Index (NAPSI), initially described Rich and Scher,[19] is an objective and a reproducible tool for estimating the severity of psoriatic nail involvement. The mean nail psoriasis severity index scores vis-a-vis disease severity were higher in our study as compared to previous studies both from India and elsewhere.[20-24]

Table 2: Comparison of NAPSI among different studies

Studies done by different authors	NAPSI
Karen regina et al [20]	6.2 ± 9.7
Ramesh kumar et al [22]	20
Shagufta rather et al [23]	25
Deepashree Daulatabad et al [24]	76.5±37
Our study	21.73 ± 20.90

A significant association between onset of nail changes and nail psoriasis severity index was also found in our study.

CONCLUSION:

Our study documents nail changes in psoriasis and lichen planus. We found cordance between the extent of nail involvement and duration of the disease but no such cordance can be found in lichen planus.

We found finger nails were more commonly affected than toe nails and pitting is the most common manifestation in both psoriasis and lichen planus patients.

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