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Nail psoriasis in Nigerians

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ABSTRACT

Background: Psoriasis is an inflammatory skin disorder that commonly affects the nails. Studies on psoriasis in our environment are very few, and data on nail abnormalities in our environment are lacking. The present study was undertaken to evaluate the frequency of nail involvement in patients with psoriasis, document the nail changes in psoriasis, and identify any existing association between some clinical parameters and nail involvement.

Methods: A cross-sectional study of consecutive patients diagnosed with psoriasis at the dermatology unit of University College Hospital, Ibadan, Nigeria, between January 2015 and October 2016. Diagnoses of psoriasis were clinical and supported by histopathologic confirmation. After obtaining sociodemographic data, history of disorder, and nail symptoms, each patient had a baseline examination with special attention paid to fingernail changes, and the findings were documented. Nail involvement was compared between the two sexes and with the presence of arthritis. Severity of nail involvement was calculated using the Nail Psoriasis Severity Index Score.

Results: In total, fifty-nine patients were involved in the study. Majority (78.0%) of the patients were adults with a median age of 39.0 years (interquartile range 21 – 55 years) and a male to female ratio of 0.9: 1. Psoriasis vulgaris was the most typical form of presentation in the study and nail changes were present in 51 patients (86.4%) with psoriasis. The most common nail abnormalities observed were pitting, followed by onycholysis and nail discolouration. Nail involvement was seen statistically more frequent in patients with extensive cutaneous involvement.

Conclusion: Involvement of the nail is quite common in psoriasis in our environment, and at times it may be the initial manifestation. Pitting, onycholysis, and discolouration with a brownish to yellowish brown hue are the most typical nail abnormalities in patients with psoriasis in this environment. From the study, it appears that nail abnormalities tend to occur more in patients with more severe cutaneous disease.

Keywords: Nail psoriasis, Nigerian, psoriasis.
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INTRODUCTION

Psoriasis is an inflammatory disorder that affects the skin as well as the nails. Occasionally, the nails may be the initial and the only site of involvement in some patients. Involvement of the nails also influences treatment options. In earlier studies, psoriasis was an uncommon presentation, and it was reported that nail involvement in psoriasis is unusual in our environment, with a prevalence of 15.9%.[1,2] However, it has been observed recently that there has been an increase in presentation, recognition, and diagnosis of psoriasis at many dermatology clinics in our environment.[3,4] It is therefore pertinent to evaluate the prevalence of nail involvement in psoriasis so as to document if there has been any change, as well as document the various features of nail psoriasis observed, so that all dermatologists involved in managing patients with psoriasis may be on the lookout, especially in Nigeria. To date, there has been no report on the various features of nail psoriasis from this region, contrary to the abundant literature that exists in other regions.

MATERIAL AND METHOD

The study was a cross sectional study of patients diagnosed with psoriasis at the dermatology clinic or who were admitted into the medical wards of University College Hospital, Ibadan, Nigeria, between January 2015 and October 2016. Consecutive patients were recruited after obtaining informed consent. Patients whose nails were painted and could not be cleaned off the nails at the time of visit were excluded from the study. Diagnosis of psoriasis was clinical, but histopathologic confirmation was obtained in the majority of the patients. After receiving baseline socio-demographic data and the onset of the disorder, patients were asked if they had noticed any changes in their nails; thereafter, the nails were examined clinically for any abnormalities, and these were documented. Severity of nail affection using the Nail Psoriasis Severity Index tool (NAPSI) was calculated for the fingernails. The joints were also assessed clinically for evidence of arthritis so as to identify if any association with the occurrence of nail abnormalities exists. Dermoscopic pictures of some abnormalities were taken. Data was analyzed using SPSS 16.0 (IBM,

Armonk, NY) with means computed for continuous variables and proportions for categorical variables. Chi square and Fisher's was used to analyze the association between each of the nail abnormalities, presence of arthritis, and sex as deemed appropriate, while the t-test was used to compare means with significance at $p<0.05$.

RESULTS

A total of sixty-three patients were seen, but fifty-nine were involved in the study. Patients included in the study were both children and adults (22% vs 78%). Twenty-eight were males while thirty-one were females, giving a male-to-female ratio of 0.9:1. The mean and median age of presentation of patients seen was 38.9 ± 20.2 years and 39.00 (interquartile range 21 – 55) years, respectively. The median duration of psoriasis prior to presentation was 15.0 months (interquartile range 2.5 – 60.0 months) while the mean age of onset of psoriasis was 35.10 ± 18.96 years. The distribution of patients' age, age of onset, and duration of rash prior to presentation is shown in Table 1.

Psoriasis was associated with nail abnormalities in fifty-one (86.4%) patients. However, from history, only three patients (5.9%) had noticed changes in their nails, and in two (3.9%) of these patients, nail changes were noticed before the appearance of the rash. The frequency of occurrence of the different nail abnormalities is shown in Table 2, with pitting followed by onycholysis, nail discoloration, and the oil drop sign as the most frequent abnormality found. Table 3 shows a comparison of nail abnormalities between sexes. The median NAPSI score of patients with nail involvement was 12.0 (interquartile range 5.0 – 22.5), with a score as high as 62 observed in one of the patients.

Overall, nail affection was more frequent in males than females (89% vs 84%), but this was not statistically significant ($p = 0.709$). Also, although pitting occurred with increased frequency in males compared to females (82% vs 61%), a level of statistical significance wasn't met ($p = 0.077$). When factors associated with the occurrence of nail involvement were sought (Tables 4 and

Table 1. Age of presentation and onset of lesion relative to sex psoriasis in patients studied.

	Male	Female	p-value
Mean age at presentation (SD)	38.8 (22.1) years	37.7 (18.9) years	0.846
Median age at presentation (IQR)	39.5 (16.0 – 57.3) years	37.5 (20 – 49.8) years	0.959
Mean age of onset (SD)	32.9 (19.6) years	35.8 (18.8) years	0.568
Median age of onset (IQR)	33.0 (10.0 – 53.0) years	36.0 (17.0 – 49.0) years	0.533
Median duration of symptoms	48.00 months	10.00 months	0.004*

SD: standard deviation; IQR: interquartile range; *significance if $p<0.05$

Table 2. Frequencies of occurrence of different nail abnormalities in the study (N=59)

Nail characteristics	Frequency (N)	Percentage (%)
Pitting	42	71.2
Onycholysis	22	37.3
Diffuse discoloration Brownish Yellow – brown	19 (9/19) (10/19)	32.2
Circular yellowish to red discoloration of nail bed beneath nail plate (Oil drop / Salmon patch)	22	37.3
Subungal hyperkeratosis	16	27.1
Nail crumbling (onychorrhexis)	13	22.0
Patchy leukonychia	13	22.0
Splinter haemorrhage	9	15.3
Red lunula	7	11.9
Others Flat nails	4	6.8

Table 3. Frequencies of occurrence of different nail abnormalities relative to sex

Nail characteristics		Frequency (%)		P-value
		Male	Female	
Pitting	Yes	23	19	0.077
	No	5	12	
Onycholysis	Yes	10	12	0.678
	No	18	18	
Discoloration	Yes	9	10	0.275
	No	19	19	
Oil drop	Yes	13	9	0.610
	No	15	20	
Subungal hyperkeratosis	Yes	10	6	0.153
	No	18	25	
Nail crumbling (onychorrhexis)	Yes	7	6	0.6014
	No	21	25	

5), the only association found was with more extensive cutaneous involvement (p = 0.002). The age of the patient and the presence of arthritis clinically were not significantly associated with nail involvement (p = 1.000, p = 0.664, respectively).

DISCUSSION

Nail involvement occurs in a significant number (86.4%) of our patients with psoriasis. The commonest nail abnormalities observed were pitting, onycholysis, oil drop sign, and discolouration with a brownish to yellowish brown hue. This observation is contrary to a previous report that nail abnormalities in patients with psoriasis from Nigeria were infrequent, with a prevalence of 15.9%.[1] The prevalence of nail involvement in this study is, however, similar to many other studies where values between 50 - 82% were reported.[5-8] Surprisingly, many of the patients did not have nail complaints despite the high prevalence of nail affection on examination, and this emphasizes the need to observe the nails in patients with psoriasis, as this may influence treatment decisions. It is well established that systemic therapy is needed when nail psoriasis is to be treated. The lower report of nail changes by patients may be due to less attention on nails in patients from our environment. Interestingly, of the three patients who gave history of nail changes, nail affectation preceded the appearance of a rash in two (66.7%) and this corroborates the fact that nail changes may be the initial manifestation of psoriasis as documented in some reports[8] as well as the consideration of psoriasis as a differential when typical nail changes occur or non-resolution of changes with antifungals in a diagnostic setting of onychomycosis which is a frequent occurrence in our environment.

Nail findings in the study were also similar to those that were previously recognized.[9-13] However, pitting followed by onycholysis, oil drop sign, and nail discolouration were the most typical findings in this study. In Malaysia and Singapore, the pattern seen was pitting, followed by onycholysis, subungual hyperkeratosis, and discoloration similar to the above observation.[12,13] In India, the pattern was onycholysis followed by discoloration, pitting, and subungual hyperkeratosis. This may suggest that the psoriatic nail pattern may vary from region to region. The reason for the lower occurrence of subungual hyperkeratosis in our study seems surprising. Still, it may be related to less scaling on the cutaneous surface, also observed in psoriasis in the patients studied, or some physical treatments that patients may have applied before presentation. Although nail abnormalities were identified clinically, it is worthy noting that abnormalities such as splinter haemorrhages were more highlighted and obvious when a dermoscope was used. It is also worth highlighting that very few patients also had flat nails (loss of convexity of the nail plate) involving many of the nails, and this was seen in males only with statistical significance (p= 0.045), an observation whose significance and association with psoriasis needs to be established in future studies.

Although involvement of nails and pitting appeared to be more frequent in males, neither was statistically significant.

Table 3. Lanjutan

Nail characteristics		Frequency (%)		P-value
		Male	Female	
Patchy leukonychia	Yes	8	5	0.2496
	No	20	26	
Splinter haemorrhage	Yes	5	4	0.7231
	No	23	27	
Red lunula	Yes	5	2	0.2398
	No	23	29	
Others	Yes	4	0	0.045*
Flat nails	No	24	31	

*significance if p<0.05

Table 4. Correlation between the presence of nail abnormality and the severity of skin lesion

	PASI median score (interquartile range)	p-value
Nail abnormality		
Yes	3.4 (2.2 – 7.0)	0.002*
No	1.3 (0.6 – 2.0)	

*Significance if p<0.05

Table 5. Correlation of nail involvement with clinical parameters

	Nail involvement		Total	p-value
	Yes	No		
Sex				
Male	25	3	28	.709
Female	26	5	31	
Age				
Children	11	2	13	1.000
Adults	40	6	46	
Presence of arthritis				
Yes	14	1	15	.664
No	37	7	44	

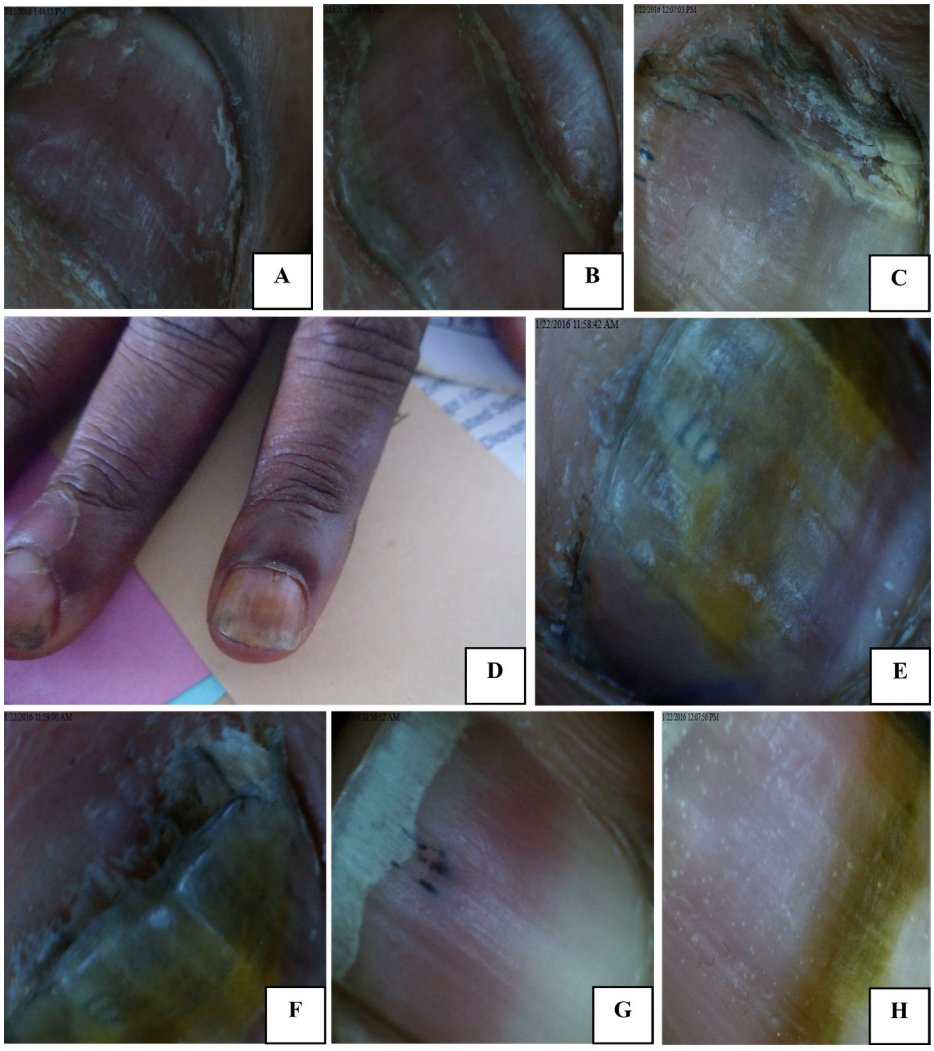

Figure 1. Nail psoriasis in Nigerians. (A) pitting; (B) red lunula; (C) nail crumbling; (D) oil drop sign; (E) yellowish discolouration; (F) subungal hyperkeratosis; (G) splinter haemorrhage and onycholysis; (H) Multiple punctate leukonychia

The more frequent occurrence of nail abnormalities in males is difficult to explain. Still, it may not be unrelated to the late presentation after disease onset compared to females in the study. Nail abnormality was seen to be significantly associated with more severe cutaneous disease, as seen in many other studies[14,15]. Still, association with joint abnormalities, as reported by several studies[16-18], was difficult to establish because the number of patients with joint involvement was too small to make a statistical conclusion.

CONCLUSION

Involvement of the nail is quite common in psoriasis in our environment, and at times, it may be the initial manifestation. Pitting, onycholysis, and discolouration with a brownish to yellowish brown hue are the commonest nail abnormalities in patients with psoriasis in this environment. Nail abnormalities are found more frequently in more severe cutaneous disease.

CONFLICT OF INTEREST

None declared.

ETHICS IN PUBLICATION

The joint University of Ibadan / University College Hospital, Ibadan, Nigeria, Ethical Review Committee gave ethical approval for the study.

AUTHORS CONTRIBUTION

All authors contributed to this research and publication.

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