Journal of Pakistan Association of Dermatologists. 2022;**32(1)**:68-72.

Original Article

Nail changes in elderly: A cross-sectional study in tertiary care hospital

Fariz Sarshar, Mohammad Adil, Mohammad Mudassir, Ratnika, Moin Ahmad Siddiqui

Department of Dermatology, Jawahar Lal Nehru Medical College, Aligarh Muslim University, Aligarh, India.

Abstract

Background Nail, an index of health, is a very important and significant appendages of skin. Elderly population is at risk of nail alteration reflecting upon their well-being and health status. This epidemiological study was done to find the magnitude of nail changes in elderly population.

Methods This was a hospital based cross sectional study conducted in the dermatology OPD from November 2018 to October 2019.Two hundred (200) patient greater than 60 years were included in the present study. KOH examination, Onychoscopy and biopsy wherever deemed necessary was performed.

Results The study comprised of 200 patients. Mean age of the patient was 65.4 years.56% patient were from rural areas and 44% were from urban areas. Of 200 patients, 191(95.5%) patient showed at least one change in the nail due to ageing. The most common nail finding was pale, dull, opaque and lustreless nail in 70%, Onychorrhexis in 60%, brittleness in 55%, and Onychomycosis in 23.5% patients.

Conclusion Nail disorder in elderly is very frequent. The most common changes were brittleness, dull, pale. opaque nail and onychomycosis owing to poor personal care and hygiene. Determining the prevalence of nail dermatosis in elderly helps in prioritising the resources thereby reducing the psychological impact and improve their quality of life.

Limitations As this study was conducted at a tertiary care hospital, it may or may not accurately reflect the prevailing situation in the community.

Key words
Epidemiology, elders, nail dermatosis.

Introduction

As the saying goes “There is so much beauty and elegance in a great set of nails. But! it withers.” Age associated nail changes and disorders are frequent in geriatric population. Changes in colour, surface, growth, thickness, contour occur in nail unit owing to ageing. Various abnormalities affecting the nail may result in pain or interfere with functioning. Nail disorders may affect protective functions. Elderly population are predisposed to nail changes. Contributory factors include: Impaired circulation of extremities, Faulty biomechanics, Infection, Neoplasm and systemic disease.[1]

Nail changes can cause impairment of daily activities, cosmetic disfigurement and negative psychological impact.[2] Nail provides us insight through which one can establish the diagnosis. Awareness regarding these disorders helps in better assessment and management. This study was undertaken to assess the magnitude of

Address for correspondence
Dr. Fariz Sarshar
Department of Dermatology,
Jawahar Lal Nehru Medical College,
Aligarh Muslim University, Aligarh, India.
Email: farizsarshar@gmail.com

common nail disorder in patient greater than 60 years and to assess the nail changes with systemic disease in elderly patient.

Methods

This was a hospital-based cross-sectional study performed at Outpatient Department of Dermatology from November 2018 to October 2019. Institutional Ethical Clearance was obtained for the study. Two hundred (200) patient greater than 60 years fulfilling the inclusion criteria were enrolled in the study. KOH examination, Onychoscopy and biopsy wherever deemed necessary was performed.

An informed consent was obtained from all patients.

Statistical methodology

Descriptive statistics and percentages were used to analyse the data.

Results

The study comprised 200 patients. There were 112 (56%) males and 88 (44%) females. Male to Female ratio was 1.27:1. The mean age of the patients was 65.4 years. Majority of patients were between 60-70 years **(Table 1)**. Most of the patients belonged to rural area (103/200, 51.5%) **(Figure 1)**. Majority of the patients were farmers 71(35.5%) **(Table 2)**.

Table 1 Age and sex wise distribution.

Age group	*Total*	*Male*	*Female*
60-70 year	122	67	55
70-80 year	69	39	30
>80 year	9	6	3
Total	200	112	88

Table 2 occupational profile of patients.

Farmer	*Laborer*	*Cattle rearer*	*Domestic worker*	*Others*
71	49	19	14	47

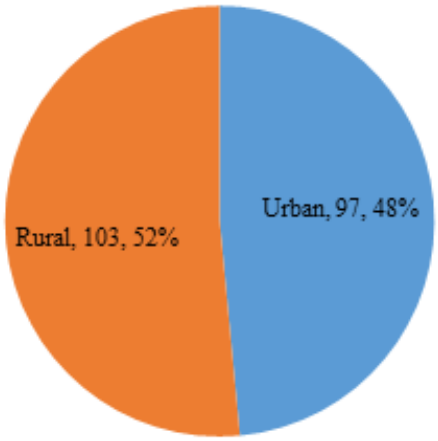

Figure 1 Residence.

Table 3 Involvement of nails.

	Frequency	*Percentage*
Fingernail	98	49
Toe nail	23	11.5
Both	65	32.5

Table 4 Observed clinical findings.

Characteristics	*Frequency*	*Percentage*
Lustureless Nail	142	71
Onychorrhexis	120	60
Brittleness	111	55.5
Subungual hyperkeratosis	52	26
Onychomycosis	47	23.5
Koilonychia	43	21.5
Dystrophy	39	19.5
Beau's Line	28	14
Paronychia	25	12.5
Leuconychia	18	9
Onychomadesis	14	7
Pitting	11	5.5
Clubbing	8	4
Melanonychia	5	2.5
Heller nail dystrophy	1	0.5

Fingernails were involved in 49% patients whereas toe nails were involved in 11.5% patients while 32.5% had both finger and toe nail involvement **(Table 3)**.

71% patients had lustreless nail followed by Onychorrhexis in 60% patients. Brittleness of nail was seen in 55.5% patients, subungual hyperkeratosis in 26%, onychomycosis in 23.5%, koilonychia in 21.5%, onychodystrophy in 19.5% **(Table 4)**.

Table 5 Patients with associated cutaneous disease.

	Frequency	*Percentage*
Dermatophytosis	79	39.5
Leprosy	32	16
Dermatitis	23	11.5
Psoriasis	16	8
Lichen planus	7	3.5
Immuno-bullous disease	7	3.5
Darier disease	1	0.5

Table 6 Patients with associated systemic diseases.

	Frequency	*Percentage*
Hypertension	32	16
Pulmonary disease	17	8.5
Renal disease	5	2.5
Diabetes Mellitus	10	5
Malignancy	3	1.5
Others	17	8.5

Nail disorders in patients with associated dermatoses Dermatophytosis was the commonest nail change observed in 39.5% of patients with associated dermatoses followed by Hansen's disease in 16%; Dermatitis in 11.5%, Psoriasis and Lichen planus in 8 and 3.5% respectively **(Table 5)**.

Nail Disorders in patients with associated systemic diseases Hypertension was most commonly seen in 16% patients followed by pulmonary disease in 8.5% patients **(Table 6)**.

Discussion

Elderly population are predisposed to nail changes. Since, no cutaneous examination can be complete without assessing the nails. Awareness of the clinical conditions affecting nails in the geriatric age group is essential.

Figure2(a) Onychomycosis with subungual hyperkeratosis.

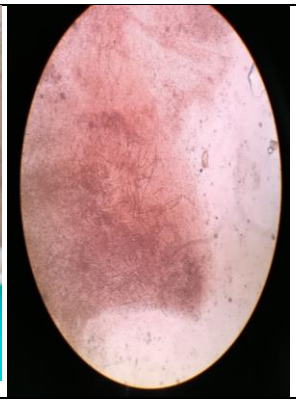

Figure 2(b) KOH Examination showing branching hyphae.

Figure 3 Onychauxis with subungual hyperkeratosis.

Figure 4 Pincer nail.

Figure 5 Nail dystrophy.

Figure 6 Salmon patch with onycholysis in psoriasis.

Figure 7 Twenty nail dystrophy in lichen planus.

Figure 8(a) Longitudinal band with distal splitting in Darier disease.

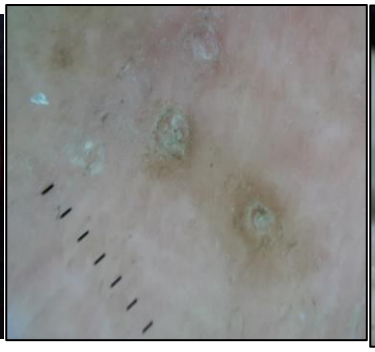

Figure 8(b) Dermoscopy showing Palmar pits in Darier disease.

Figure 9 Clubbing (grade 3) in patient of Squamous cell carcinoma (Lung).

Factors Contributing include Impaired circulation of extremities, Faulty biomechanics, Infection, Nutritional deficiency, Neoplasm and various Systemic diseases. There are various changes in nails that can be attributed to aging such as the rate of growth, colour, surface, contour, thickness, chemical composition and histology.[1] Rao et al.[4] reported nail changes and disorders in up to 98% of elderly in India. In this study, the commonest nail changes observed were pale, dull, opaque and lustreless nails in 71% patients, Onychorrhexis in 60%, brittle nails in 55.5% and Beau's line in 14%. These results are corroborated with the study conducted by Rao et al.[4] Repeated cycles of hydration and dehydration may predispose to brittle nails. Brittle nail is frequent in the elderly. Onychomycosis predominantly toenails, is commonly observed in the geriatric population. In our study it is seen in 23.5% of patients which is consistent with study conducted by Loo DS.[5] Chronic paronychia was seen in 12.5% of patients in the present study. The right dominant hand is found to be primarily affected. In literatures, the prevalence of psoriasis is 1.5-2% of the world's population.[6,7] More than 50% of patients with skin psoriasis and up to 80% with psoriatic arthritis suffers from nail disease. The fingernails are more affected than the toenails. Nail changes of psoriasis are pitting, onycholysis, subungual hyperkeratosis, nail plate discoloration, crumbling, uneven nail surface and splinter haemorrhages.[8] Pitting was the commonest nail change observed in 5.5% of the cases. In our study we found 16 cases of psoriasis, out of which 11 patients had pitting. The prevalence of pitting in psoriasis was thus 68%. This is in consensus with study done by Klaassen et. Al.[9] Nail involvement occur in 10% of patient with lichen planus. Nail lichen planus is characterized by thinning, longitudinal ridging and distal splitting of the nail plate.[10] We observed nail changes in 5.5% of cases with lichen planus.

Conclusion

Geriatric patients show various changes and disorders involving the nails which may result in interference with their daily activities. Nail changes in the elderly are frequent and often disregarded. Changes in the nail act as a window to health. It is pertinent on the part of dermatologist to assess and manage common nail disorders. This will help in reducing the psychological impact and improve their quality of life..

References

1. Singh G, Haneef NS, A U. Nail changes and disorders among the elderly. Indian J Dermatol Venereol Leprol 2005; 71:386-392.

2. Belyayeva E, Gregoriou S, Chalikias J, Kontochristopoulos G, Koumantaki E, Makris M et.al. The impact of nail disorders on quality of life. Eur J Dermatol 2013;23(3):366-71.
3. El-Domyati M, Abdel-Wahab H, Abdel-Azim E. Nail changes and disorders in elderly Egyptians. J Cosmet Dermatol 2014;13(4):269-76.
4. Rao S, Banerjee S, Ghosh SK et al. Nail changes and nail disorders in the elderly. Indian J Dermatol 2011; 56: 603–6.
5. Loo DS. Cutaneous fungal infections in the elderly. Dermatol Clin 2004 ;22(1):33-50.
6. Christophers E. Psoriasis - epidemiology and clinical spectrum. Clin Exp Dermatol 2001; 26:314-320.
7. Dogra S, Yadav S. Psoriasis in India: prevalence and pattern. Indian J Dermatol Venereol Leprol 2010 ;76(6):595-601.
8. Dogra A, Arora AK. Nail Psoriasis: The journey so far. Indian J Dermatol 2014; 59:319-33.
9. Klaassen KM, van de Kerkhof PC, Pasch MC. Nail Psoriasis: A questionnaire-based survey. Br J Dermatol 2013; 169:314-9.
10. Żychowska M, Żychowska M. Nail Changes in Lichen Planus: A Single-Center Study. J Cutan Med Surg 2021 ;25(3):281-285..