

## EVALUATION OF NAILCHANGES IN GERIATRIC AGE GROUP IN RURAL TERTIARY CARE HOSPITAL

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### Abstract

**Background:** Evaluation of nail changes in geriatric age group in rural tertiary care hospital. **Materials & Methods:** The study group comprised of 100 patients of nail changes attending the outpatient Department of Dermatology, Venerology and Leprosy at KIMS Hospital, Narketpally from 1st November 2018 to 31st July 2020. The study has been approved by the ethics committee of the institution. patients aged 65 years or more of both sexes, with nail changes were included in this study. Patients attending dermatology outpatient department and inpatients of DVL and other departments. Routine-RBS, complete hemogram, urine analysis. Special-KOH for fungal elements, nail culture, nail biopsy. Other investigations as required. **Result:** In the study, Onychorrhexis was observed in 85 patients, primarily affecting males (60), with hands and feet equally involved. Altered nail contour also affected 85 patients, with a similar male predominance. Lunula changes were seen in 83 patients, mostly males (59). Dark/dull nails affected 82 patients, predominantly males (63). Ragged cuticles were found in 70 patients, with males (51) being more affected. Slow nail growth, thickening, and onycholysis each affected around 83 patients, mainly males. Subungual hyperkeratosis, chromonychia, and ragged nail folds were common, affecting 73-80 patients. Other less common nail disorders included Beau's lines, onychoschizia, brittle nails, clubbing, thinning, and various other conditions, with males generally more affected. **Conclusion:** The study focused on patients aged 65-87, with a majority (73%) in the 65-75 age group and a male to female ratio of 2.23:1. Agriculture was the most common occupation (82%), leading to frequent trauma and water exposure. Onychorrhexis and altered nail contour were the most prevalent nail changes (85%), characteristic of senile nails, exacerbated by repeated trauma.

## INTRODUCTION

Nails, though considered —dead structures, have attracted attention since years ago. They occupy a very small area of the body, yet play a very significant role. Nails not only act as vital instruments that help picking, scratching, cutting, crushing, gripping, clinging, and many more activities, but they have also remained a target that has attracted people pursuing diverse activities— from artists to archaeologists, sorcerers to crime detectors, doctors to designers, commoners to celebrities, and almost everyone! Any defects in such an important structure have fascinated the common as well as medical men since ancient days. Nails not only have their own problems in the form of various diseases, but also act as a screen for

different systemic illnesses. being such a significant part of the body and incidence of the diseases of the nail claims a considerable portion of the total dermatological disorders in modern medical science, Various physiological as well as disease associated changes and disorders are seen in the aging nail. Many of these are extremely painful, affecting stability, ambulation and other functions like picking up of fine objects, tactile sensation, and protective function.<sup>[2-7]</sup> The prevention and management of these conditions require periodic cutting of the nails and appropriate medical care. No physical examination in dermatology is complete without the study of nails, because most often the nail is a mirror of the underlying systemic disorders. In spite of such a vital role, the nail still remains an understudied and underutilized.<sup>[1]</sup> A study of the symptoms, signs and treatment options of these

changes will enable better assessment and management of the onychology concerns of the elderly age people.<sup>[3,4]</sup> Hence this study was undertaken.

## MATERIALS AND METHODS

The study group comprised of 100 patients of nail changes attending the outpatient Department of Dermatology, Venerology and Leprosy at KIMS Hospital, NARKETPALLY from 1st November 2018 to 31st July 2020. The study has been approved by the ethics committee of the institution.

**Inclusion Criteria:** patients aged 65 years or more of both sexes, with nail changes.

**Exclusion Criteria:** patients with nail changes due to Geno dermatosis, congenital nail disorders and who are not willing to give written informed consent.

**Method of Collection of Data:** Patients attending dermatology outpatient department and inpatients of DVL and other departments. Routine-RBS, complete hemogram, urine analysis. Special-KOH for fungal elements, nail culture, nail biopsy. Other investigations as required.

## RESULTS

The present study comprises of a total of 100 clinical cases of nail changes, for the period November 2018 to July 2020.

In present study, majority of the cases were in the age group 65 - 75 years (51% males and 22% females), followed by age group 76 - 85 years males 16 % females 8% and >85 males 2% females 1%. In the present study, it was observed that males were more commonly than females giving a male:female ratio of 2.23:1. [Table 1]

Agriculture workers forms majority of our cases 82%. Followed by daily labour 8% and potter 10%. [Table 2]

In the present study Onychorrhexis was seen in 85 patients out of which males is 60 out of which hands 53, feet 57, in females 25 are involved of which hands 20 and feet 17 are involved. Altered contour was seen in 85 patients of which males is 59 out of which hands 51, feet 43, in females 26 are involved of which hands 19 and feet 21 are involved, A lunula seen in 83 patients out of which males are 59 out of which hands 53, feet 57, in females 24 are involved of which hands 11 and feet 14 are involved. Dark/dull opaque nails are seen in 82 patients out of which males are 63 out of which hands 41, feet 63, in females 19 are involved of which hands 14 and feet 1 are involved. Ragged cuticle seen in 70 patients out of which males is 51 out of which hands 41, feet 33, in females 19 are involved of which hands 12 and feet 09 are involved. Slow growth seen in 83 patients out of which males is 60 out of which hands 58, feet 59, in females 21 are involved of which hands 18 and feet

16 are involved. Thickening seen in 83 patients out of which males is 54 out of which hands 37, feet 34, in females 23 are involved of which hands 11 and feet 14 are involved. Onycholysis seen in 83 patients out of which males is 56 out of which hands 39, feet 44, in females 19 are involved of which hands 14 and feet 16 are involved. Subungual hyperkeratosis seen in 73 patients out of which males is 50 out of which hands 41, feet 30, in females 23 are involved of which hands 11 and feet 15 are involved. Chromonychia seen in 73 patients out of which males is 46 out of which hands 33, feet 31, in females 27 are involved of which hands 14 and feet 18 are involved. Ragged nail folds seen in 80 patients out of which males is 60 out of which hands 30, feet 37, in females 20 are involved of which hands 14 and feet 11 are involved. Beau's lines seen in 22 patients out of which males is 15 out of which hands 12, feet 09, in females 07 are involved of which hands 06 and feet 04 are involved. Onychoschizia seen in 43 patients out of which males is 29 out of which hands 18, feet 20, in females 14 are involved of which hands 11 and feet 07 are involved. Brittle nails seen in 42 patients out of which males is 32 out of which hands 20, feet 21, in females 10 are involved of which hands 06 and feet 07 are involved. Clubbing seen in 7 patients out of which males is 05 out of which hands 04, feet 05, in females 02 are involved of which hands 01 and feet 02 are involved. Thinning seen in 41 patients out of which males is 28 out of which hands 24, feet 20, in females 13 are involved of which hands 08 and feet 09 are involved. Shiny nails seen in 11 patients out of which males is 08 out of which hands 07, feet 06, in females 03 are involved of which hands 02 and feet 03 are involved. Pitting males is 10 out of which hands 07, feet 05, in females 05 are involved of which hands 04 and feet 02 are involved. Compared to study in 1 decreased lunula was in 5/200. Paronychia seen in 5 patients out of which males is 04 out of which hands 01, feet 03, in females 01 are involved of which hands 01 and feet 0 are involved. Onychomycosis seen in 12 patients out of which males is 09 out of which hands 07, feet 03, in females 03 are involved of which hands 02 and feet 01 are involved. Brachyonychia seen in 3 patients out of which males is 02 out of which hands 02, feet 02, in females 01 are involved of which hands 01 and feet 01 are involved. Longitudinal splitting seen in 6 patients out of which males is 04 out of which hands 03, feet 02, in females 02 are involved of which hands 01 and feet 02 are involved. pterygium unguis seen in 7 patients out of which males is 05 out of which hands 03, feet 02, in females 02 are involved of which hands 02 and feet 0 are involved. subungual hematoma seen in 9 patients out of which males is 07 out of which hands 07, feet 01, in females 02 are involved of which hands 02 and feet 01 are involved. pincer nail seen in 9 patients out of which males is 07 out of which hands 06, feet 03, in females 02 are involved of which hands 02 and feet 0 are involved. Platonychia

seen in 4 patients out of which males is 03 out of which hands 03, feet 02, in females 01 are involved of which hands 01 and feet 0 are involved. Koilonychia seen in 3 patients out of which males is 01 out of which hands 01, feet 01, in females 02 are involved of which hands 02 and feet 02 are involved. [Table 4]

Soft and fragile nails seen in 63 patients out of which males is seen in 43 patients in hands 38 and feet in 34 patients in females it is seen in 20 out of which in hands it is 11 and feet in 17 fissuring of nails seen in 27 patients out of which males is seen in 17 patients in hands 10 and feet in 13 patients in

females it is seen in 10 out of which in hands it is 8 and feet in 6 pale and dull nails seen in 24 patients out of which males is seen in 16 patients in hands 13 and feet in 11 patients in females it is seen in 6 out of which in hands it is 4 and feet in 5 opaque nails seen in 20 patients out of which males is seen in 14 patients in hands 11 and feet in 9 patients in females it is seen in 6 out of which in hands it is 6 and feet in 4 longitudinal ridging seen in 45 patients out of which males is seen in 31 patients in hands 15 and feet 18 patients in females it is seen in 14 out of which in hands it is 11 and feet in 7.

**Table 1: Age & Gender Wise Distribution of Patients (n = 100)**

Age group(years)	Male	Female	Total
65-75	51	22	73
76-85	16	08	24
>85	02	01	03
Total	69	31	100

**Table 2: Distribution of Patients by Occupation (N =100)**

Occupation	Male	Female	Total
Agriculture	57	25	82
Daily labour	07	01	08
Potter	05	05	10
Total	69	31	100

**Table 3: Spectrum of Nail Changes in Males and Females (n =100)**

Nail Change	Male(n=69)	Female(n=31)	Total No. of Cases (M+F)
Onychorrhexis	60	25	85
Altered contour	59	26	85
Alunula	59	24	83
Dark/dull opaque nails	63	18	82
Ragged cuticle	51	19	70
Slow growth	60	21	81
Thickening	54	23	77
Onycholysis	56	19	75
Subungual hyperkeratosis	50	23	73
Chromonychia	46	27	73
Ragged nailfold	60	20	80
Beau's lines	15	07	22
Onychoschizia	29	14	43
Brittle nails	32	10	42
Clubbing	05	02	07
Thinning	28	13	41
Shiny nails	08	03	11
Pitting	10	05	15
Paronychia	04	01	05
Onychoptosis	00	00	00
Onychomycosis	09	03	12
Brachyonychia	02	01	03
Longitudinal splitting	04	02	06
Pterygium unguis	05	02	07
Subungual hematoma	07	02	09
Pincer nail	07	02	09
Platynychia	03	01	04
Koilonychia	01	02	03

**Table 4: Spectrum of Nail Changes in Hands and Feet (n =100)**

Nail changes	Male(n=69)		Female(n=31)	
	Hands	Feet	Hand	Feet
Onychorrhexis	53	57	20	17
Altered contour	51	43	19	21
Alunula	53	57	11	14
Dark/dull opaque nails	41	63	14	12
Ragged cuticle	41	33	12	09

Slow growth	58	59	18	16
Thickening	37	34	11	14
Onycholysis	39	44	14	16
Subungual hyperkeratosis	41	30	11	15
Chromonychia	33	31	14	18
Ragged nailfold	30	37	14	11
Beau's lines	12	09	06	04
Onychoschizia	18	20	11	07
Brittle nails	20	21	06	07
Clubbing	04	05	01	02
Thinning	24	20	08	09
Shiny nails	06	07	02	03
Pitting	07	05	04	02
Paronychia	01	03	01	00
Onychomycosis	07	03	02	01
Brachyonychia	02	02	01	01
Longitudinal splitting	03	02	01	02
Pterygium unguis	03	02	02	00
Subungual hematoma	07	01	02	01
Pincer nail	06	03	02	00
Platonychia	03	02	01	00
Koilonychia	01	01	02	02

**Table 5: Spectrum of Physiological Nail Changes in Old Age (n =100)**

Nail Change	Male	Female	Total No. of Cases (M+F)
Soft and fragile nails	43	20	63
Fissuring of nails	17	10	27
Pale and dull nails	16	06	24
Opaque nails	14	06	20
Longitudinal ridging	31	14	45

**Table 6: Spectrum of Physiological Nail Changes in Old Age (n =100)**

Nail changes	Male		Female	
	Hand	Feet	Hand	Feet
Soft and fragile nails	38	34	11	17
Fissuring of nails	10	13	08	06
Pale and dull nails	13	11	04	05
Opaque nails	11	09	06	04
Longitudinal ridging	15	18	11	07

**Table 7: Nail changes in systemic disorders (n=100)**

Nail Change	No. of Cases	Associated Disease
Koilonychia	3	Anemia
Onycholysis	15	Psoriasis
Beau's lines	2	Malaria fever
Beau's lines	2	Chemotherapy
Clubbing	2	COPD, congestive heart failure
Pitting	11	Psoriasis
Pitting	7	Alopecia areata
Terry's nails	1	Cirrhosis and renal failure
Thinning	18	Anemia
Subungual hyperkeratosis	16	Psoriasis, keratoderma
Longitudinal melanonychia	2	No systemic diseases found
Diffuse chromonychia	6	Malnutrition
Half and half nails	2	chronic renal failure

## DISCUSSION

In the present study, it was observed that males were more commonly than females and males are 69 and females are 31. Compared to study in rajasthan9 males are 71 and females are 29. In present study, majority of the cases were in the age group 65 - 75 years (51% males and 22% females), followed by age group 76 – 85 years males 16 % females 8% and >85 males 2% females 1% when compared to study in turkey10 age 65 – 74 is 82.7% and age 75 -85 are 13.3% and more than 85 are 4%. In males is 60 out

of which hands 53, feet 57, in females 25 are involved of which hands 20 and feet 17 are involved. Compared to study in Egypt,<sup>[8]</sup> was 91 out of 200.

Altered contour: In males is 59 out of which hands 51, feet 43, in females 26 are involved of which hands 19 and feet 21 are involved. Compared to study in egypt8 it was seen in 44 out of 200.

Alunula: In males is 59 out of which hands 53, feet 57, in females 24 are involved of which hands 11 and feet 14 are involved. Compared to study in egypt8 decreased lunula was in 98 out of 200.

Dark/dull opaque nails: In males is 63 out of which hands 41, feet 63, in females 19 are involved of which hands 14 and feet 1 are involved. Compared to study in egypt8 pale dull opaque nails was seen in 146 out of 200.

Ragged cuticle: In males is 51 out of which hands 41, feet 33, in females 19 are involved of which hands 12 and feet 09 are involved. Compared to study in rajasthan,<sup>[9]</sup> 88 out of 100 of which males 64 with hands 43 and feet 64 in females 24 in hands 21 and feet.

Slow growth: In males is 60 out of which hands 58, feet 59, in females 21 are involved of which hands 18 and feet 16 are involved. Compared to study in rajasthan9 87 out of 100 of which males 62 with hands 32 and feet 62 in females 25 with hands 13 and feet 25

**Thickening:** In males is 54 out of which hands 37, feet 34, in females 23 are involved of which hands 11 and feet 14 are involved. Compared to study in rajasthan9 69 out of 100 of which males 51 with hands 13 and feet 51 in females 18 in hands 4 and feet 18 compare to study in Telangana,<sup>[11]</sup> it was seen in 102 out of 200.

**Onycholysis:** In males is 56 out of which hands 39, feet 44, in females 19 are involved of which hands 14 and feet 16 are involved. Compared to study in egypt8 onycholysis was seen in 7 out of 200.

**Subungual hyperkeratosis:** In males is 50 out of which hands 41, feet 30, in females 23 are involved of which hands 11 and feet 15 are involved. Compared to study in rajasthan9 62 out of 100 of which males 46 with hands 18 and feet 41 in females.

**Brittle nails:** In males is 32 out of which hands 20, feet 21, in females 10 are involved of which hands 06 and feet 07 are involved. Compared to study in Egypt8 was in 135 out of 200.

**Pitting:** In males is 10 out of which hands 07, feet 05, in females 05 are involved of which hands 04 and feet 02 are involved. Compared to study in egypt8 was seen in 5 out of 200.

**Paronychia:** In males is 04 out of which hands 01, feet 03, in females 01 are involved of which hands 01 and feet 0 are involved. Compared to study in egypt8 was seen in 12 out of 200.

#### **Nail changes in systemic disorders**

Koilonychia with anemia seen in 3 patients compared with study in rajasthan9 Koilonychia & Platonychia with Anemia, coronary heart disease, is seen in 48 patients.

Beaus lines with malaria seen in 2 patients compared with study in rajasthan9 Beau's lines with Fever with cellulitis, chronic obstructive lung disease, carcinoma breast on radiotherapy, contact dermatitis, stroke, trauma seen in 8 patients.

Beaus lines in chemotherapy 2 patients compared with study in rajasthan,<sup>[9]</sup> Beau's lines with Fever with cellulitis, chronic obstructive lung disease, carcinoma breast on radiotherapy, contact dermatitis, stroke, trauma patients seen in 8 patients compared to study in Telangana,<sup>[11]</sup> Beau's lines

with Trauma Eczema Respiratory Disease Renal disease seen in 17 patients.

Clubbing in COPD and congestive heart failure in 2 patients compared with study in rajasthan,<sup>[9]</sup> Clubbing with Chronic obstructive lung disease, hypertension, congestive cardiac failure, carcinoma, malnutrition patients seen in 8 patients compare to study in guntur12 clubbing with pulmonary Koch's and COPD was seen in 4 patients compared to study in Telangana,<sup>[11]</sup> Clubbing with Malnutrition Cirrhosis Respiratory Disease Cardiac disease Crohn's disease Seen in 37 patients.

Pitting in psoriasis seen in 11 patients compared with study in rajasthan9 Pitting with Psoriasis, alopecia areata, paronychia, leprosy, dermatitis patients seen in 16 patients compared to study in telangana6 Pitting with Psoriasis Atopic eczema Alopecia seen in 28 patients.

Pitting in alopecia areata seen in 07 patients compared with study in rajasthan9 Pitting with Psoriasis, alopecia areata, paronychia, leprosy, dermatitis patients seen in 16 patients compared to study in Telangana,<sup>[12]</sup> Pitting with Psoriasis Atopic eczema Alopecia seen in 28 patients

Terrys nails in cirrhosis with renal failure in 1 patient compared with study in rajasthan,<sup>[9]</sup> Terry's nails with Type II diabetes, congestive cardiac failure due to pleural effusion, stroke patients seen in 6 compared to study in telangana77 Terry's nails with Cirrhosis seen in 2 patients.

## **CONCLUSION**

The study focused on patients aged 65-87, with a majority (73%) in the 65-75 age group and a male to female ratio of 2.23:1. Agriculture was the most common occupation (82%), leading to frequent trauma and water exposure. Onychorrhexis and altered nail contour were the most prevalent nail changes (85%), characteristic of senile nails, exacerbated by repeated trauma. Other common nail disorders included lunula, dark/dull nails, and slowed nail growth, among others. Many nail issues were linked to trauma and systemic diseases like anemia, diabetes, and cardiac dysfunction. Awareness and clinical knowledge are crucial for managing elderly patients' nail and oncologic concerns.

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