Research Article
AMERICAN JOURNAL OF PHARMACY AND HEALTH RESEARCH
www.ajphr.com
2017, Volume 5, Issue 1
ISSN: 2321–3647(online)

Geriatric Nails as A Window to Their Health and Skin

Ajay Agrawal[1]*, Suga Reddy[2]
1. Department of Dermatology, Venereology and Leprosy, Chhattisgarh Institute of Medical Sciences (CIMS), Bilaspur, Chhattisgarh, 495001.
2.Department of Dermatology, Venereology and Leprosy, JJM Medical College, Davangere, Karnataka

ABSTRACT

Dermatological examination is never complete without a careful evaluation of the nails. The elderly, who constitute a significant proportion of the present day society, show various age-related changes and disorders affecting their nail. This is generally due to susceptibility of the aging nail to fungal infections and impaired circulation. Concurrent dermatological or systemic diseases, and related treatments and faulty biomechanics also play a crucial role.[1] Age associated disorders include brittle, dull and lusterless nails, onychorrhexis, onychodystrophy, longitudinal ridging, melanonychia, platyonychia, sub-ungual hyperkeratosis, transverse ridging, pitting, onycholysis, longitudinal splitting, onychomycosis and koilonychia This study has been undertaken for nail disorders and nail changes in the elderly because of the scarcity of such studies in our country.

Keywords: Nail, Elderly, Geriatric

*Corresponding Author Email: ajay.agrawal1@gmail.com
Received 08 December 2016, Accepted 10 January 2017

Please cite this article as: Agrawal A *et al*., Geriatric Nails as A Window to Their Health and Skin. American Journal of Pharmacy & Health Research 2017.

INTRODUCTION

No cutaneous examination is complete without a careful evaluation of the nails of the patient and it is far more important for the elderly. Nail disorders comprise approximately 10% of all dermatological conditions and affect a high percentage of the elderly.[1] Age related nail disorders constitutes significant morbidity in elderly. Nails often grow at a slower rate in the elderly. Senile nails appear pale, dull and opaque. The thickness of the nail plate may be normal, increased or decreased. The finger nails are often soft and fragile with splitting and fissuring. Longitudinal ridging is common. The toe nails, especially on the big toes, may appear thicker and harder. Nail growth is inversely proportional to age. Impaired arterial blood supply accounts for many of the nail changes seen in old age.[2]

Nail disorders in elderly:

Brittle, dull and lusterless nails

Nails become brittle when the water content is less than 16% and become soft when it is above 25%. In persons, older than 60 years, brittle nails [Figure 1] are common, manifesting as excessive longitudinal ridges, roughness of the nail plate, horizontal lamellar splitting of the distal nail plate and/or irregularity of the distal edge of the nail plate. [1] Nail brittleness results from dehydration of the nail plate as a result of environmental factors such as frequent hand washing.

Figure 1: Brittle, dull and lusterless nails

Onychorrhexis

Onychorrhexis [Figure 2] produces longitudinal ridging and fissuring of the nail plate. Often associated with nail thinning, it indicates diffuse damage to the nail matrix. Diseases commonly responsible for onychorrhexis include lichen planus, impaired vascular supply, trauma, and tumors that compress the nail matrix. [3]

Figure 2: Onychorrhexis

Onychodystrophy

Bony deformities of the digits or foot-to-shoe incompatibility can cause faulty biomechanics leading to onychodystrophies such as nail plate hypertrophy, subungual corn (onychoclavus), crumbling of the nail plate. [1]

Onychauxis, Onychogryphosis

Onychauxis implies hypertrophy or excessive thickening of the nail plate, while onychogryphosis is excessive thickening with increased curvature of the nail plate. Hypertrophy of the nail may occur as a developmental anomaly, because of dermatological or systemic disease, or from trauma or old age. Trauma from ill-fitting footwear is a common cause of nail hypertrophy. The great toe nails are frequently affected. [2]

Longitudinal Melanonychia

Linear streaks or bands of pigmentation on the nails is called longitudinal melanonychia [Figure 3]. Nail matrix melanocytes are generally quiescent and do not normally produce melanin. Melanonychia can be the result of either melanocyte activation or melanocyte hyperplasia. The most common cause of longitudinal melanonychia is racial predisposition, and is the result of excess melanin produced by the distal nail matrix melanocytes.[2]

Figure 3: Longitudinal Melanonychia

Pitting

Pitting [Figure 4] describes the presence of small depressions on the nail plate surface. Pits are due to foci of abnormal keratinization of the proximal nail matrix that result in clusters of parakeratotic cells in the dorsal nail plate. These clusters are easily detached, leaving the pits. [3]

Figure 4: Pitting

Onycholysis

The nail plate is detached from the nail bed and appears white because of the presence of air in the subungual space. Pigmentation of the onycholytic area may occur as a consequence of microbial colonization or blood extravasation. In addition to environmental trauma, the nail bed disorders that most commonly produce onycholysis [Figure 5] are psoriasis and onychomycosis. Photo-onycholysis may be precipitated by UV light exposure, either alone or in combination with medications such as tetracycline. [3]

Figure 5: Onycholysis

Infections/Infestations

Onychomycosis is the commonest nail infection, accounting for 40% of all onychopathies and 30% of all cutaneous fungal infections. [4] The prevalence of onychomycosis increases with age,

reaching nearly 20% in patients over 60 years. [5] It is especially common in the elderly, often involving both toenails and fingernails. The great toenail is the commonest one involved.

METHODS

We assessed every elderly individual (>60 years) who visited outpatient department of the hospital attached to our medical college, until a predetermined sample size of 100 patients was met. Patients who did not wish to be included in the study were excluded. A thorough history of associated illnesses (dermatological and systemic) and clinical examination of nail was conducted and the result was subjected to appropriate statistical analysis.

RESULTS AND DISCUSSION

The following Table shows the age- and sex-wise breakup of the patients enrolled for the study. [Table1]. The youngest elderly patient was 60 years and the oldest was 94 years old. Out of 100 patients 84 patients (84%) were male and 16 patients (16%) were female. 95% patients showed brittle, dull and lusterless nails. 64% showed onychorrhexis, 49% onychodystrophy, 46% longitudinal ridging and 36% melanonychia. 33% Platyonychia, 22% Sub-ungual hyperkeratosis, 21% transverse ridging, 20% Pitting, 20% onycholysis, 11% longitudinal splitting, 10% onychomycosis, 3% pterygium [Figure 6] and others less than 10%. [Figure 7]

Table 1: Age and sex distribution

Age (in years)	Male	Female	Total	Percentage
60-70	60	13	73	73
71-80	20	3	23	23
81-90	3	0	3	3
91-100	1	0	1	1
>100	0	0	0	0

Age and sex distribution of patients

The dermatological associations in the patients were: xerosis 13 patients (13%), psoriasis 3 patients (3%), lichen planus 3 patients (3%), subacute eczema 3 patients (3%), chronic eczema 3 patients (3%), vitiligo 1 patient (1%), bullous pemphigoid 1 patient (1%). [Figure 8]

The predominant systemic associations were: Diabetes 11 patients (11%), Hypertension 16 patients (16%), COPD 2 patients (2%), Cardiac failure 1 patient (1%), cirrhosis 1 patient (1%) and Hemiplegia 1 patient (1%). [Figure 9]

Figure 6: Pterygium

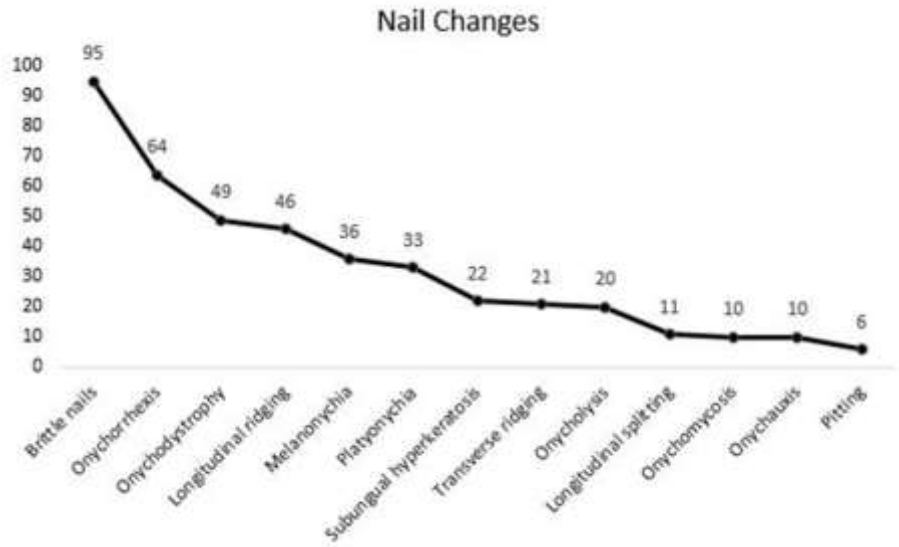

Figure 7: Nail changes

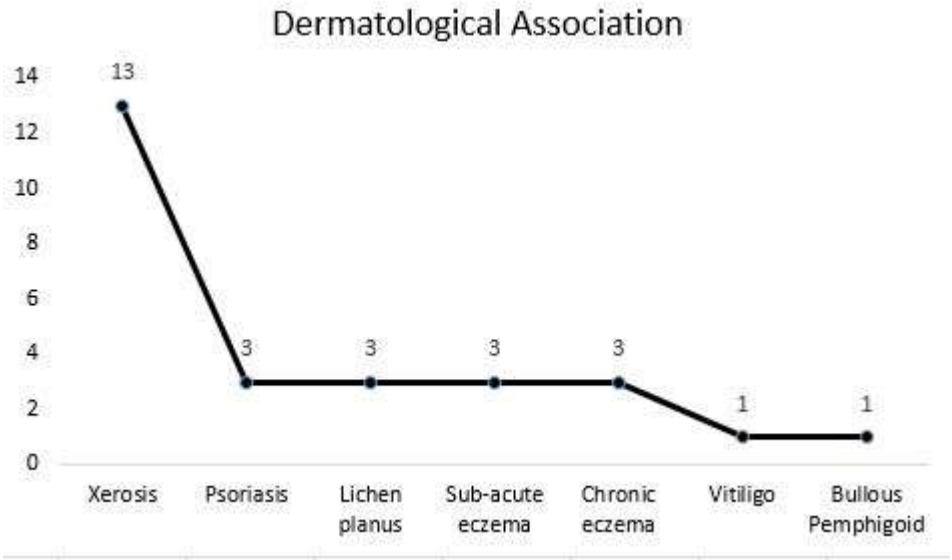

Figure 8: Dermatological Association

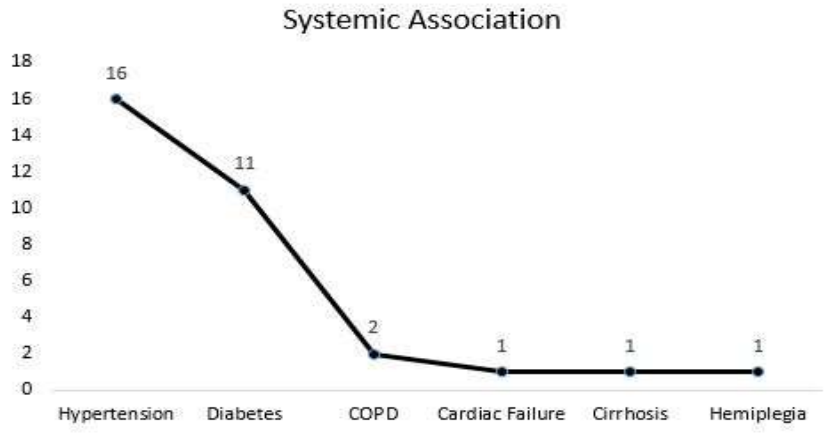

Figure 9: Systemic Association

CONCLUSION:

The elderly are one of the more vulnerable sections of our society and in whom the age related changes might interfere with their daily activities. It is essential for a dermatologist to be aware of the conditions affecting nails in geriatrics and their management options in order to decrease both physiological and psychological impact of nail disorders and to improve quality of life in geriatric age group.

REFERENCES:

1. Singh G, Haneef NS, Uday A. Nail changes and disorders among the elderly. Indian J Dermatol Venereol Leprol 2005; 71:386-92.
2. Raja Babu KK. Nail and its disorders. In: Valia RG, Valia AR, editors. IADVL Textbook and atlas of dermatology. 3rd ed. Mumbai: Bhalani Publishing House; 2001. p. 949-94.
3. Antonella Tostiand Bianca Maria Piraccini. Nail Disorders. In: Jean L Bolognia, Joseph L Jorizzo, Julie V Schaffer, editors. Dermatology 3rd ed; 2012. p. 1129-47.
4. Rich P. Nail disorders: diagnosis and treatment of infectious, inflammatory and neoplastic nail conditions. Med Clin North Am 1998;82:1171-83.
5. Loo DS. Cutaneous fungal infections in the elderly. Dermatol Clin 2004; 22:33-50.