Clinical Study of various Nail Disorders presenting to Dermatology Outpatient Department

Parul Garg, Anuj Kumar, Praveen K Rathore, Sapna Goyal

ABSTRACT

Aims and objectives: To study the clinical spectrum of nail disorders including congenital, developmental, infectious, neoplastic, degenerative, dermatological, and systemic diseases affecting the nail unit.

Materials and methods: A total of 100 consecutive cases of nail disorders reporting to the dermatology outpatient department in Rohilkhand Medical College & Hospital were examined. Complete dermatological, systemic, hematological examinations, Gram staining, scraping for fungus, nail clipping for potassium hydroxide mount, fungal culture, biopsy from nail bed were undertaken in doubtful cases.

Observations and results: Among 100 cases, the most common was onychomycosis – 28 cases, followed by nail psoriasis – 13 cases, pitting – 10 cases, paronychia – 9 cases, trachyonychia – 5 cases, onycholysis – 4 cases, clubbing – 3 cases, koilonychia – 3 cases, ingrow toenail – 3 cases, pterygium – 3 cases, onychogryphosis – 2 cases, subungual wart – 2 cases, half and half nail – 2 cases, anonychia – 2 cases, longitudinal grooves – 2 cases, clubbing with resorption of fingers – 2 cases, onychomadesis – 1 case, nail discoloration – 1 case, melanonychia – 1 case, pachyonychia congenita – 1 case, beau’s line – 1 case, racket nail – 1 case, transverse groove – 1 case.

Conclusion: Among examined cases, onychomycosis was most common followed by another nail disorders.

Keywords: Nail, Onychomycosis, Pits, Trachyonychia.

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INTRODUCTION

Nails are a reflection of both internal and external disease. Functions of nail are to assist in picking up small objects, to protect the distal digit, to improve fine touch sensation, and to enhance esthetic appearance of hands.

Nail disorders include those abnormalities that affect any portion of nail unit. The nail unit includes nail plate; nail matrix; bed; proximal, lateral, and distal nail fold; and hyponychium. These structures may be affected by heredity, skin disorders, infections, systemic disease, ageing, internal and external medications, physical and environmental agents, trauma, and tumors both benign and malignant.

Nail disorders comprise 10% of all dermatological conditions. The accurate recognition and description of nail findings is the crucial first step in diagnosing a nail disorder. The worldwide incidence of nail disorders is increasing and it continues to spread and persist.

AIMS AND OBJECTIVES

To study the clinical spectrum of nail disorders including: congenital, developmental, infectious, neoplastic, degenerative, dermatological, and systemic diseases affecting the nail unit.

MATERIALS AND METHODS

- A total of 100 consecutive cases of nail disorders reporting to dermatology outpatient department in Rohilkhand Medical College & Hospital, Bareilly, Uttar Pradesh, India were examined.
- Complete dermatological, systemic examination, hematological examinations, Gram staining, scraping for fungus, nail clipping for potassium hydroxide mount, fungal culture, and biopsy from nail bed were undertaken in doubtful cases.

OBSERVATION AND RESULTS

- A total of 100 cases with nail changes were subjected to study.
- Age group of cases varied from 4 to 74 years, mean age being 36.05 years.
- Duration of nail disorders ranged from 5 to 35 years, mean duration being 2.84 years.
Systemic Diseases

From the chart, among the 29 cases, the following were observed:

- Nail change in diabetes mellitus: Onychomycosis – 8 cases, onychogryphosis – 1 case, onychomadesis – 1 case.
- Chronic renal failure on dialysis: Onychomycosis – 3 cases, half and half nail – 2 cases
- Ischemic heart disease and hypertension: Onychomycosis – 3 cases, onychogryphosis – 1 case
- Human immunodeficiency virus (on highly active antiretroviral therapy): Nail discoloration – 2 cases
- Iron deficiency anemia: Koilonychia – 3 cases
- Systemic sclerosis: Clubbing with resorption of terminal phalanges – 2 cases
- Chronic obstructive pulmonary disease and Koch’s: Clubbing – 3 cases.

DISCUSSION

Among 100 cases observed, male to female ratio was 2:1 (Graph 1). The most common age group involved was 31 to 40 years (30%) followed by 21 to 30 years (19%). Nageshwaramma et al. did a study and observed most common age group involved was 21 to 40 years (40%). Among 100 cases (Table 1, Figs 1 to 13 and Graph 2), the most common change was onychomycosis – 28%. Distal and lateral subungual onychomycosis (DLSO) was observed to be most common morphological pattern – 59.26%. It was comparable to studies done by Veer et al. (50%) and Grover (85%) (Table 2). Nail psoriasis accounts for 13% of cases. The most common nail finding in psoriasis was pits (46.5%) followed by subungual hyperkeratosis and onycholysis. Puri and Kaur did a study and found pitting as a common manifestation in psoriasis (70%), followed by subungual hyperkeratosis and onycholysis. Pitting was seen in 10% cases. Cause was idiopathic. Trachyonychia was seen in 5% of cases. Cause was idiopathic in 40% cases, alopecia areata in

Table 1: Spectrum of nail disorders observed

<table>
<thead>
<tr>
<th>Disease</th>
<th>Number of cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Onychomycosis</td>
<td>28</td>
</tr>
<tr>
<td>Nail psoriasis</td>
<td>13</td>
</tr>
<tr>
<td>Pitting</td>
<td>10</td>
</tr>
<tr>
<td>Paronychia</td>
<td>9</td>
</tr>
<tr>
<td>Trachyonychia</td>
<td>5</td>
</tr>
<tr>
<td>Onycholysis</td>
<td>4</td>
</tr>
<tr>
<td>Clubbing</td>
<td>3</td>
</tr>
<tr>
<td>Koilonychia</td>
<td>3</td>
</tr>
<tr>
<td>Ingrow toe nail</td>
<td>3</td>
</tr>
<tr>
<td>Pterygium</td>
<td>3</td>
</tr>
<tr>
<td>Onychogryphosis</td>
<td>2</td>
</tr>
<tr>
<td>Subungual wart</td>
<td>2</td>
</tr>
<tr>
<td>Half and half nail</td>
<td>2</td>
</tr>
<tr>
<td>Anonychia</td>
<td>2</td>
</tr>
<tr>
<td>Longitudinal groove</td>
<td>2</td>
</tr>
<tr>
<td>Clubbing with resorption of terminal phalanges</td>
<td>2</td>
</tr>
<tr>
<td>Onychomadesis</td>
<td>1</td>
</tr>
<tr>
<td>Nail discoloration</td>
<td>1</td>
</tr>
<tr>
<td>Melanonychia</td>
<td>1</td>
</tr>
<tr>
<td>Pachyonychia congenita</td>
<td>1</td>
</tr>
<tr>
<td>Beau’s lines</td>
<td>1</td>
</tr>
<tr>
<td>Racket nail</td>
<td>1</td>
</tr>
<tr>
<td>Transverse groove</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
</tr>
</tbody>
</table>

Graph 1: Sex distribution

Fig. 1: Onychomycosis
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Fig. 2: Nail psoriasis

Figs 3: Trachyonychia

Fig. 4: Clubbing

Fig. 5: Pterygium

Fig. 6: Subungual wart

Fig. 7: Transverse groove

Fig. 8: Racket nail

Fig. 9: Melanonychia

Fig. 10: Nail discoloration
PREVALENCE

40% cases, and lichen planus in 20% cases. Gordon et al\(^5\) did a study and observed most common cause of trachyonychia was idiopathic and other being lichen planus and alopecia areata.

CONCLUSION

No cutaneous examination is complete without a careful evaluation of the nails. Nails remain an understudied and yet quite accessible structure that lends itself for examination and evaluation. In our study, male preponderance was seen. Onychomycosis was the most common finding. The DLSO was most common morphological pattern observed, followed by nail psoriasis, pitting, paronychia, trachyonychia, and other disorders (Tables 3 and 4).
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Table 2: Morphological pattern of onychomycosis

<table>
<thead>
<tr>
<th>Morphological pattern</th>
<th>Total</th>
<th>% (this study)</th>
<th>Veer et al²</th>
<th>Grover³</th>
</tr>
</thead>
<tbody>
<tr>
<td>DLSO</td>
<td>16</td>
<td>59.26</td>
<td>50</td>
<td>82</td>
</tr>
<tr>
<td>PSO</td>
<td>4</td>
<td>12.96</td>
<td>20.4</td>
<td>6</td>
</tr>
<tr>
<td>SWO</td>
<td>3</td>
<td>9.26</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>TD</td>
<td>2</td>
<td>7.43</td>
<td>14</td>
<td>6</td>
</tr>
<tr>
<td>PSO with paronychia</td>
<td>2</td>
<td>7.43</td>
<td>10.2</td>
<td>4</td>
</tr>
<tr>
<td>Subungual hyperkeratosis</td>
<td>1</td>
<td>3.76</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>28</td>
<td>100</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

DLSO: Distal and lateral subungual onychomycosis; PSO: Proximal subungual onychomycosis; SWO: Superficial white onychomycosis; TD: Total dystrophy

Table 3: Nail changes in psoriasis

<table>
<thead>
<tr>
<th>Nail changes</th>
<th>Fingernail</th>
<th>Toe nail</th>
<th>Both</th>
<th>Total</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pitting</td>
<td>3</td>
<td>1</td>
<td>2</td>
<td>6</td>
<td>46.15</td>
</tr>
<tr>
<td>Pitting and transverse groove</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
<td>7.6</td>
</tr>
<tr>
<td>Pitting, onycholysis, and subungual hyperkeratosis</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>23</td>
<td></td>
</tr>
<tr>
<td>Total nail dystrophy</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>7.6</td>
</tr>
<tr>
<td>Transverse groove</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
<td>7.6</td>
</tr>
<tr>
<td>Yellow discoloration and pitting</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
<td>7.6</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>13</td>
<td>100</td>
</tr>
</tbody>
</table>

Table 4: Causes of trachyonychia

<table>
<thead>
<tr>
<th>Associated disease</th>
<th>Total</th>
<th>Percentage</th>
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</thead>
<tbody>
<tr>
<td>Alopecia areata</td>
<td>2</td>
<td>40</td>
</tr>
<tr>
<td>Lichen planus</td>
<td>1</td>
<td>20</td>
</tr>
<tr>
<td>Idiopathic</td>
<td>2</td>
<td>40</td>
</tr>
<tr>
<td>Total</td>
<td>5</td>
<td>100</td>
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</tbody>
</table>

REFERENCES