Section: Dermatology

Original Research Article

CLINICO-ONYCHOSCOPIC PATTERNS IN VARIOUS NAIL DISORDERS AT A TERTIARY CARE HOSPITAL

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ABSTRACT

Background: Nail disorders comprise approximately 10% of all dermatologic conditions and have always been a challenge to dermatologists, with the crux being an accurate diagnosis. Because diagnosis is not always possible by clinical means alone, there has always been a quest for efficient and efficacious diagnostic methods. Nail dermoscopy (onychoscopy) has emerged as a valuable diagnostic tool in recent times for evaluating diseases in the nail apparatus and has shown promising results in diagnosing various nail disorders. It also avoids time-consuming investigations such as culture and biopsy. The aim is to determine the clinical and onychoscopic patterns in various nail disorders in patients attending the skin OPD.

Materials and Methods: 120 patients with clinically evident nail diseases were recruited for the cross-sectional descriptive study. After clinical examination, all nails were subjected to dermoscopic examination. Each patient was examined for different types of nail pathologies, onychoscopic features, nail unit affected, and age and gender were noted. The student t-test and Pearson's correlation test were applied with a significance threshold of $p<0.05$.

Results: Onychomycosis (n = 47) was the commonest nail disorder. The majority of patients were diagnosed with distal and lateral subungual onychomycosis i.e., 35 (29.2%), followed by 17.5% (21) for psoriasis vulgaris. Also, 10% (12) was for acute paronychia, 5% (6) was for melanonychia, SWO, scleroderma, and TDO, 4.2% (5) was for alopecia areata and congenital pterygium. The lower proportion of 3.3% (4) was for Darier disease, green nail syndrome, and onychomadesis and the least 2.5% (3) for 20 Nail dystrophy and Erythroderma, Adverse drug reactions respectively.

Conclusion: Dermoscopy is an easy, inexpensive, rapid, simple, and efficient diagnostic method that permits visualization of morphologic features that are not visible to the naked eye, allows accurate diagnosis of the common nail, and hence could serve as an important diagnostic tool.

Keywords: nail disorders, dermoscopy, onychoscopy, inflammatory nail disorders.

INTRODUCTION

Nail disorders comprise approximately 10% of all dermatologic conditions and have always been a challenge to dermatologists, the crux being the accurate diagnosis.[1] Abnormal nails are of utmost clinical importance, especially when they are the only presenting feature without any other apparent signs and symptoms of a disease. Nails may be involved primarily or secondarily in either dermatologic or systemic diseases. They may also be affected without any skin involvement. They show specific changes that are markers for a wide range of systemic disorders. These include collagen vascular, liver, renal, endocrine, cardiac, and neoplastic diseases. For example, Oil drop Sign in Psoriasis,[2] Hutchinson's Sign in Melanomas,[3] (skin disorders), Lindsay's 'Half and Half Nail' and 'Terry's Nails' in Chronic Renal Failure,[4]

Koilonychia in Iron Deficiency Anaemia,[5] (systemic diseases), Yellow Nail in Yellow Nail Syndrome,[6] Aplasia or Dysplasia in Nail Patella Syndrome,[7] and Subungual Fibromas in Tuberous Sclerosis Complex,[8] (Congenital and developmental disorders).

Study of nail diseases until recently was restricted to more on clinical, and microbiological evaluation and less on histopathology. Diagnostic biopsy in itself is a painful procedure. Also, the reluctance of most clinicians to perform biopsies and the lack of expertise among pathologists further compound the problem. Clinicopathologic tools are time-consuming and give false negative results in up to 35% of patients.[9]

Because diagnosis is not always possible by clinical means alone, there has always been a quest for an efficient and efficacious diagnostic method. Nail dermoscopy (onychoscopy) has emerged as a valuable diagnostic tool in recent times for evaluating diseases in the nail apparatus and has shown promising results in diagnosing various nail disorders and also avoids time-consuming investigations such as culture and biopsy. Dermoscopy is an easy, inexpensive, rapid, and simple diagnostic method that permits visualization of morphologic features which are not visible by the naked eye and allows differential diagnosis of onychomycosis from the common nail dystrophies.[10] It is a valuable interface between macroscopic dermatology (i.e., clinical features) and microscopic dermatology (i.e., histopathological features). Similarly, onychoscopy is a potential link between naked eye examination (clinical onychology) and nail histopathology, opening up a valuable second front with the potential to prevent biopsy.

However, now onychoscopy has fast expanding indications and is an upcoming tool employed in the diagnosis of various other nail pathologies too. It can also be used for monitoring the evolution, therapeutic response, and prognosis of the diseases. However, onychoscopy is technically difficult due to the nail's size, shape, convexity, and hardness.[11] The entire nail cannot be visualized as a whole at one particular time; therefore, it is sometimes cumbersome to take pictures of this area. Further, there is a paucity of research focusing on recent developments in onychoscopy and ways and means to incorporate it into daily practice.

Keeping in mind the various clinical difficulties in diagnosing nail disorders, and since some dermoscopic patterns are observed consistently with certain diseases, this study was conducted to evaluate the role of dermoscopy in the diagnosis of onychomycosis by correlating its findings with microbiological examination results and also determine sensitivity, specificity, and accuracy of these findings. Further, the clinical and onychoscopic patterns in various nail disorders seen on observing the nails of patients attending the skin OPD by a dermatoscope were also observed.

MATERIALS AND METHODS

After obtaining clearance from the Institutional Ethics Committee, this cross-sectional observational study was conducted in the Department of Dermatology, Venerology & Leprosy at Sukhsagar Medical College, Jabalpur (MP) for a period of 18 months on 120 patients who presented to Dermatology OPD with the chief complaint of various nail disorders and qualified the inclusion criterion. Written informed consent was obtained after a detailed explanation of the examination to all the patients before the commencement of the examination.

New patients of all age groups and both gender who were clinically diagnosed with different types of disorders involving the nail unit and consenting to the study were included in the study. However, non-consenting uncompliant patients and patients who are already getting treatment for nail diseases were excluded from the study

Method

Patients with clinically detectable nail involvement were recruited for the onychoscopic evaluation. After taking written consent, patients underwent a detailed history regarding onset, evolution, number of nails involved, underlying skin disease, and systemic complaints. Each patient was examined for different types of nail pathologies, onychoscopic features, nail unit affected, and age and gender were noted. They were subjected to general physical examination, systemic and cutaneous examination. Clinical photographs along with detailed clinical history and local examination were done and a clinical diagnosis was established. Relevant laboratory investigations like KOH examination, the culture of nail clippings, and nail biopsy were carried out wherever necessary. All nails were then examined by a handheld dermatoscope and dermoscopic images were taken. At least four images were taken for each patient.

Statistical analysis

All the data was collected on a pre-designed proforma and the data was then entered into Microsoft Excel newer version 2017 (Microsoft Corp.) and analyzed using the SPSS version 20.0 operating on Windows 10. All the descriptive data were presented as mean, standard deviation, frequency, and percentages represented as pie charts and bar diagrams. The continuous data were analyzed using student t-test for mean difference and the strength of association between the variable using Pearson's correlation was calculated. An assessment of the incidence of clinico-onychoscopic patterns in various nail disorders was done. A P value of <0.05 was considered statistically significant.

RESULTS

Amongst the 120 patients evaluated majority of patients having nail disorders i.e., 34 (28.3%) belonged to the age group of 31-40 years with a mean age of 37.18 years was observed. Minimum patients were seen for age groups more than 61 years and less than 10 years. Males showed a higher preponderance over females i.e., 63 (52.5%) with M:F ratio of 1.1:1.

The majority of patients were diagnosed with distal lateral superficial onychomycosis (DLSO) i.e., 35 out of 120 (29.2%), followed by 17.5% (21/120) for psoriasis vulgaris. Also, 10% (12/120) was for acute paronychia, 5% (6/120) was for melanonychia, superficial white onychomycosis (SWO), scleroderma and total dystrophic onychomycosis (TDO), 4.2% (5/120) was for alopecia areata and congenital pterygium. The lower proportion 3.3% (4/120) was for darier disease, green nail syndrome, onychomadesis, and least 2.5% (3/120) for 20 nail dystrophy and erythroderma, adverse drug reactions (ADR) respectively.

The common dermoscopic findings in various nail disorders are:

- Onychomycosis (n=47)
  - Amongst the 35 patients diagnosed with distal lateral superficial onychomycosis (DLSO), 32 showed chromonychia & spiked patterns followed by 28 patients with hyperkeratosis, 20 with onychorrhexis, 17 with white fluffy patterns, 15 patients who showed spiked pattern, 13 with onycholysis & onychoschizia while only 1 patient showed green discoloration, avascular area, yellow bands & trachyonychia
  - In 6 patients diagnosed with superficial white onychomycosis (SWO), onychorrhexis, subungual hyperkeratosis was seen in all the patients while brown black band, chromonychia, ragged cuticle, cuticle loss, spiked pattern, and white dots were seen in 2 patient each.
  - Amongst the 6 patients diagnosed with total dystrophy onychomycosis (TDO), onycholysis and chromonychia were the most common dermoscopic feature in all the patients followed by onychorrhexis, subungual hyperkeratosis, cuticle loss, and white fluffy patterns. Whereas, minimum 1 patient presented with brown black longitudinal band, avascular area, ragged cuticle, and beau's line.
- Out of 21 patients with psoriasis vulgaris as the final diagnosis, large, deep pits (D) were the most common dermoscopic feature with 21 patients showing the same while avascular area and beau's line were seen in only 1 patient. Salmon patch was noticed in 14 patients while 12 patients showed onycholysis and 10 patients showed splinter hemorrhages.
- Amongst 12 patients with acute paronychia as the final diagnosis, 7 showed positive signs of onychorrhexis & transverse ridge, 5 had chromonychia and cuticle loss, 4 showed onycholysis & onychoschizia, 3 patients showed brown-black bands, and splinter hemorrhages while only 2 showed hyperkeratosis, ragged cuticle & spiked pattern
- Out of 6 patients with melanonychia as the final diagnosis, a brown-black longitudinal band was most common with 6 patients presenting the same followed by 2 each of onychorrhexis, ragged cuticle & white dots
- Out of 6 patients with scleroderma as the final diagnosis, avascular area and capillary dropouts were the most common dermoscopic features while pterygium and ragged cuticle was minimally observed in only 1 patient.
- Out of 5 patients with alopecia areata, 5 showed onychorrhexis, superficial and uniform pits(S) & onychoschizia, 3 had ragged cuticle & transverse ridges while only 2 showed trachyonychia.
- In patients with congenital pterygium as the final diagnosis, all 5 patients showed the following dermoscopic features i.e., onychorrhexis nail fragment while 3 showed pterygium, cuticle loss & white dots
- All 4 patients diagnosed with darier disease i.e., 100% showed the various dermoscopic features examined i.e., onychorrhexis, brown-black longitudinal bands, onycholysis, splinter hemorrhages, nail fragmentation, v nicking, and erythronychia.
- Out of 5 patients with green nail syndrome as the final diagnosis, 4 showed green discoloration, 2 showed onycholysis, chromonychia, spiked pattern & onychomadesis while only 1 patient showed onychorrhexis, subungual hyperkeratosis, cuticle loss, white fluffy pattern & transverse ridges.
- All 4 patients diagnosed with onychomadesis had the presence of transverse ridges while brown-black band, onycholysis, hyperkeratosis, chromonychia, ragged cuticle, and onychomadesis was seen in 2 patients only.
- In 20 nail dystrophies, 100 % of patients showed dermoscopic features i.e., onychorrhexis, hyperkeratosis, ragged cuticle, transverse ridges, and trachyonychia.
- All patients with erythroderma and adverse drug reactions showed the various dermoscopic features examined i.e., splinter hemorrhages, ragged cuticle, transverse ridges, beau’s line & erythronychia.

Table 1: Distribution on Basis of Final Diagnosis

Final Diagnosis	Frequency	Percent
Distal lateral superficial onychomycosis (DLSO)	35	29.2
Psoriasis vulgaris	21	17.5
Acute paronychia	12	10.0
Melanonychia	6	5.0
Superficial white onychomycosis (SWO)	6	5.0
Scleroderma	6	5.0
Total dystrophy onychomycosis (TDO)	6	5.0
Alopecia areata	5	4.2
Congenital Pterygium	5	4.2
Darier disease	4	3.3
Green nail syndrome	4	3.3
Onychomadesis	4	3.3
20 Nail dystrophy	3	2.5
Erythroderma, Adverse drug reaction (ADR)	3	2.5
Total	120	100.0

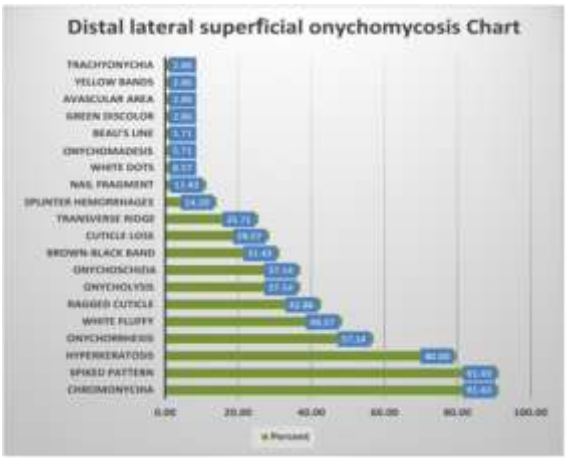

Figure 1: Presence of Features on dermoscopy under final diagnosis (distal lateral superficial onychomycosis) category

Figure 2: Presence of features on dermoscopy under psoriasis vulgaris category

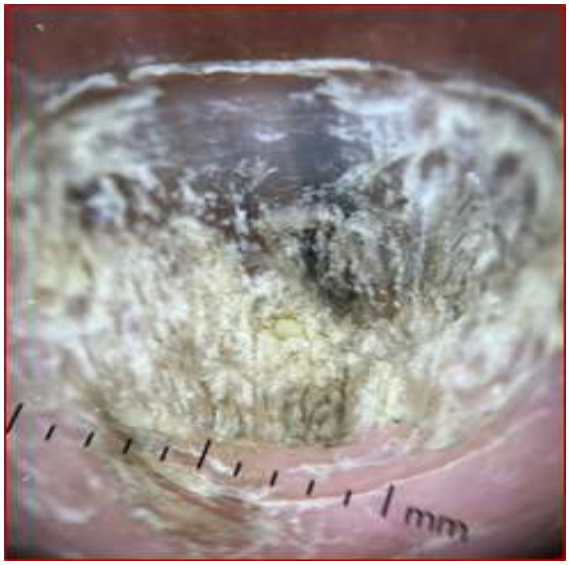

Figure 3: Distal lateral subungual onychomycosis: Distal onycholysis with a typical spiked pattern and a jagged proximal edge. The distal nail plate shows irregular termination. Onycholytic area shows white fluffy shadows

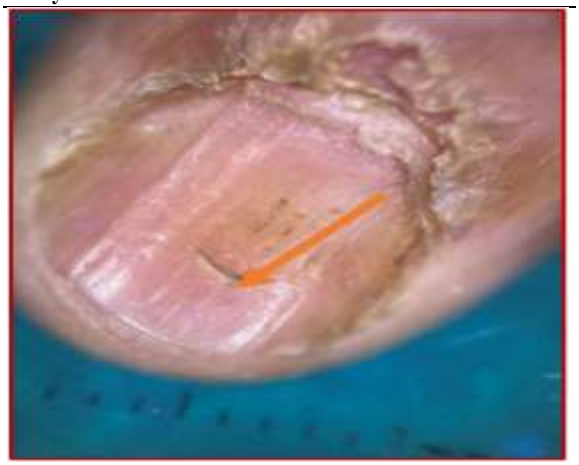

Figure 4: Nail psoriasis: splinter haemorrhage-longitudinal streaks present on the distal nail plate. Pits seen as circular punctate depressions random in distribution. Dented border of onycholysis (arrow)

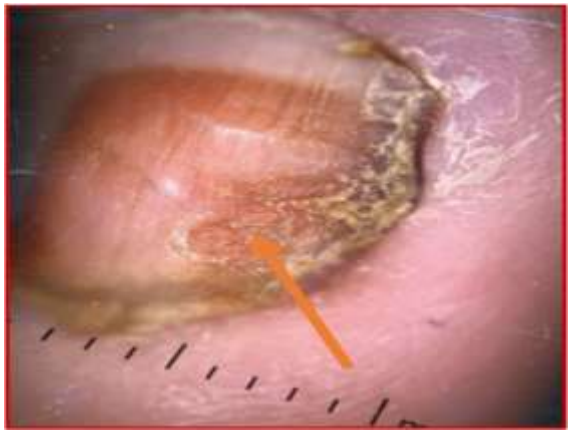

Figure 5: Dermoscopic findings of paronychia

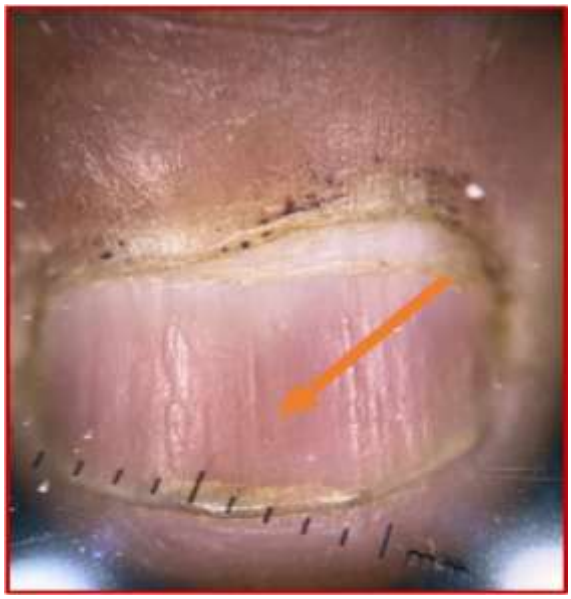

Figure 6: Dermoscopic findings of scleroderma

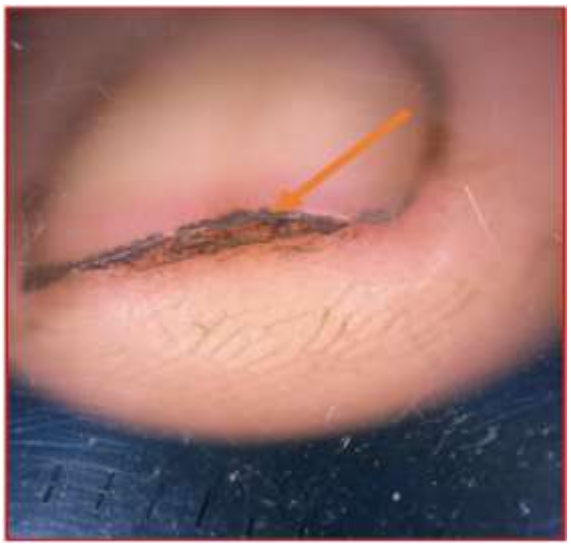

Figure 7: Dermoscopic findings alopecia areata

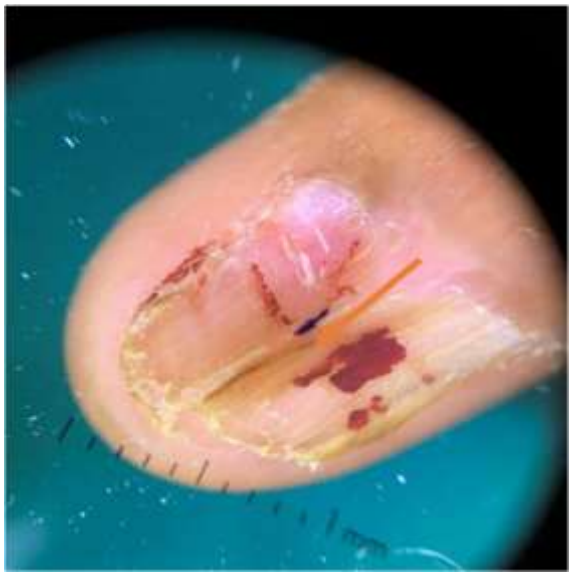

Figure 8: Dermoscopic findings of congenital pterygium. Ventral pterygium with cuticle loss

Figure 9: Dermoscopic findings of darier's disease

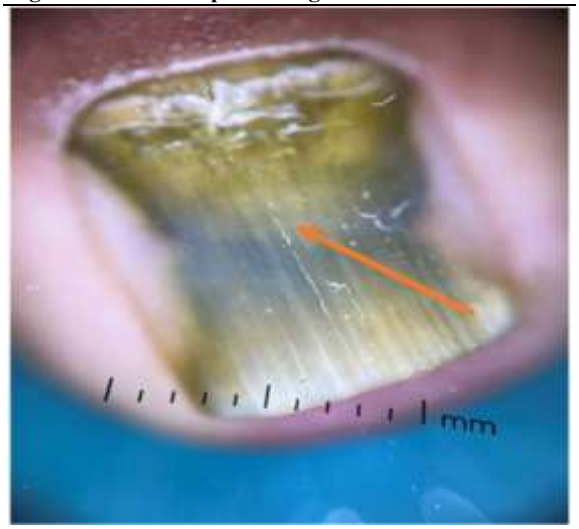

Figure 10: Dermoscopic findings of green nail syndrome

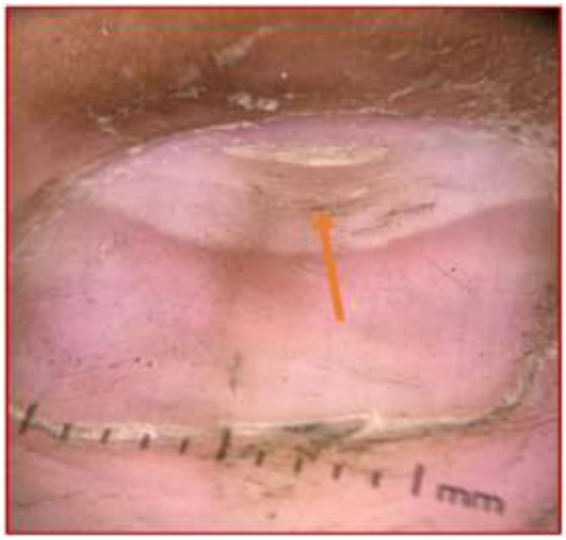

Figure 11: Dermoscopic findings of onychomadesis: polarized dermoscopy of onychomadesis with proximal shedding of the nail plate from the nail matrix

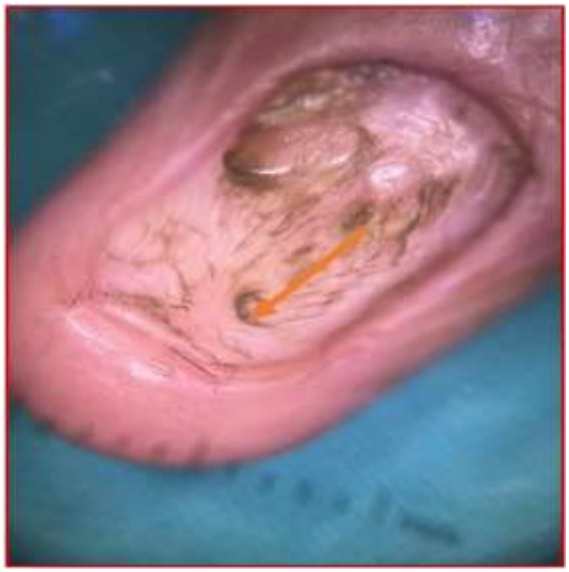

Figure 12: Dermoscopic findings of erythroderma with total nail dystrophy

Figure 13: Dermoscopic findings of nail dystrophy

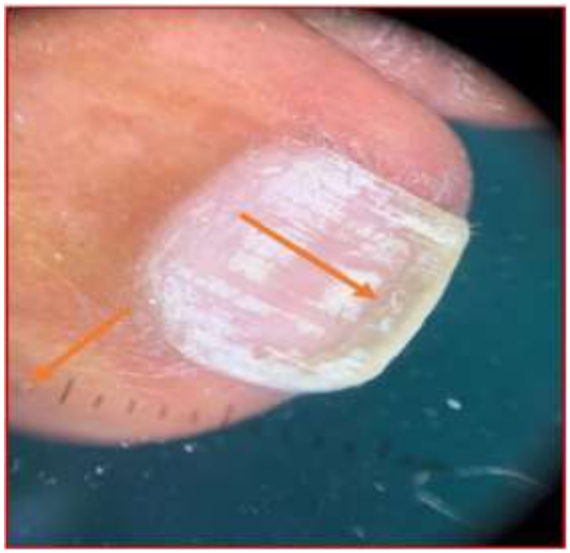

Figure 14: Dermoscopic findings of white superficial onychomycosis

Figure 15: Dermoscopic findings of nail lichen planus: multiple longitudinal fissures seen with the distal splitting of the nail plate with nail plate thinning

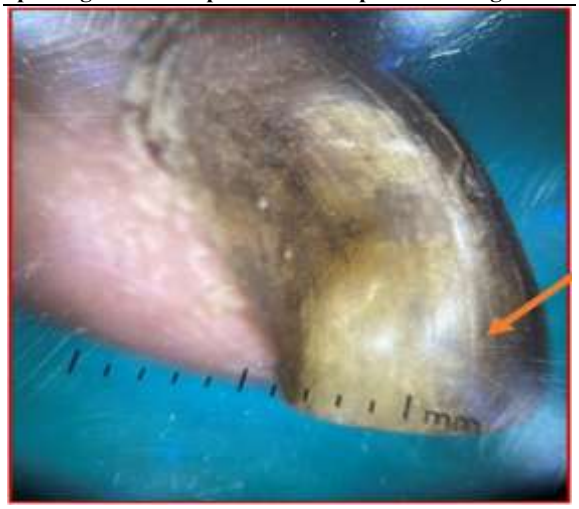

Figure 16: Dermoscopic findings of onychogryphosis; yellow-brown thickening of the nail plate with associated gross hyperkeratosis, elongation, and increased curvature

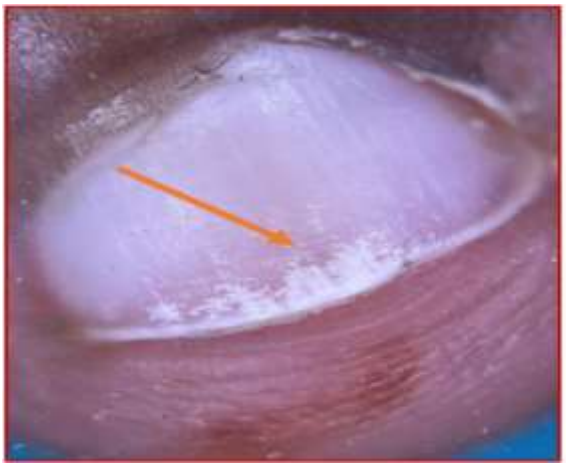

Figure 17: Dermoscopic findings of leukonychia: 1 or more white dots or transverse bands inside the plate with a normally smooth and transparent nail plate surface

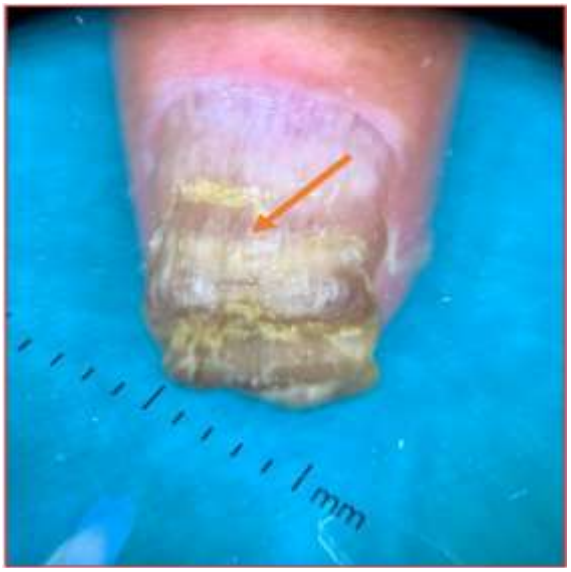

Figure 18: Dermoscopic findings of systemic sclerosis: splinter haemorrhages with avascular areas, longitudinal ridging, and ragged cuticle.

DISCUSSION

In the present study, the majority of patients having nail disorders belonged to the age group of 31-40 years (34), followed by patients belonging to the age group of 41-50 years (27). The mean age of the patients was 37.18 years. This could be attributed to increased physical activity and a greater concern among the adults of these age groups and their approachable tendency for health care. This was concordant with the study done by Varma K et al,[11] Puri et al,[12] and Rathod et al,[13] Varma K et al,[11] stated that nail diseases were most encountered in the fourth decade [32(25.4%)], followed by third decade [30(23.8%)]. Puri et al,[12] in his study stated that the majority [200(40%)] belonged to the third and fourth decade, followed by the fifth and sixth decade [150(30%)] while Rathod et al,[13] stated in his study that the most common age group was fourth decade [49(19.6%)] followed by second decade [47(18.8%)].

Males showed a higher preponderance over females with M:F ratio was 1.1:1 which was comparable to other Indian studies done by Varma K et al,[11] Puri et al,[12] Rathod et al,[13] and Bhat Y J et al,[14] where a male preponderance was observed too. This could be because of better accessibility of males to healthcare facilities.

Fingernails outnumbered toenails in our study which was in concurrence with other indian studies like Varma K et al,[11] & Rathod et al,[12] which showed similar results. Fingernails being more cosmetically concerning could have led to a higher medical approach. As per results of the study done by Varma K et al,[11] fingernails outnumbered toenails as they were exclusively involved in 78 (61.9%) and 13 (10.3%) patients, respectively. Both fingernails and toenails were involved in 35 (27.8%) patients. Similarly, in a study by Rathod et al,[13] fingernails were significantly more commonly involved than toenails and right-hand fingernails were most frequently involved in 192 patients (78.6%) followed by left-hand fingernails [171(68.4%)], right foot toenails [109(43.6%)] and left foot toenails [102(40.8%)].

Onychomycosis was the most common nail disorder observed in our study with distal lateral superficial onychomycosis (DLSO) being the commonest and seen in 35 patients (29.2%) while superficial white onychomycosis [SWO] and total dystrophic onychomycosis [TDO] was seen in 6 patients (5%) each. This was concordant with Varma K et al,[11] Puri et al,[12] Bhat Y J et al,[14] & Kumar et al,[15] with 38.8%, 25%, 34.18%, and 34.2% prevalence respectively for onychomycosis, while Rathod et al,[13] found onychomycosis as the second most common disorder after nail psoriasis.

Chromonychia was the most common dermoscopic feature/finding present in 40 patients (36.66%) followed by onycholysis which was present in 38 patients (31.6%). The spiked pattern was noticed in 34 patients. Onychoscopy had the distinct advantage of demarcating the proximal edge of the onycholytic area. Linear onycholytic edge was commonly seen in traumatic onycholysis while a jagged edge characterized onychomycosis. A study by Piraccini BM et al,[16] described white chromonychia in 59% of cases, a statistically significant finding in diagnosing onychomycosis. Similar findings were also noted by Kayarkatte MN et al,[17] However, few previous studies i.e., Varma K et al,[11] with 89.8% prevalence, Yadav and Khopkar et al,[18] with 100%, Piraccini et al,[16] with 100%, Jesús-Silva et al,[19] with 23.8% and Nargis et al,[20] with 78.3% prevalence, stated onycholysis as the most common finding present.

Leukonychia was studied independently in the present study and was found to be significant for diagnosing onychomycosis. White fluffy shadows were found in 23 patients. Morphological types of leukonychia were first described by Kayarkatte MN

et al,[17] where they found white fluffy shadows in 63.6% of patients. Similar results were also observed in a study done by Varma K et al,[11] with 40.8% of patients presenting white fluffy shadows. However, to diagnose onychomycosis, no statistically significant relation was observed with these morphological types.

Subungual hyperkeratosis was observed in 40 patients which was similar to the study done by Varma et al,[11] who observed 39 (79.6%) cases of subungual hyperkeratosis in their study, of which all of them [39(100%)] showed ruins aspect/ruinous appearance. The association of subungual hyperkeratosis, as well as ruinous appearance with onychomycosis, was found to be statistically significant ($P < 0.05$) in his study. Concordant findings were noted in all 10 nails of onychomycosis studied by De Crignis et al,[21] while Kayarkatte MN et al,[17] noted subungual hyperkeratosis in 75 (85.2%) cases, of which 52 (59.1%) showed ruins aspect/ruinous appearance. Distal irregular termination of the nail plate was observed in 39 (79.6%) cases, with a significant association with onychomycosis ($P < 0.05$). This concurred with the findings of Kayarkatte MN et al.[17]

Other nail disorders observed in our study were psoriasis vulgaris with 17.5% (21/120) preponderance, Acute paronychia with 10% (12/120), 5% (6/120) was for melanonychia and scleroderma and 4.2% (5/120) was for alopecia areata and congenital pterygium. The lower proportion of 3.3% (4/120) was for darier disease, green nail syndrome, onychomadesis, and least 2.5% (3/120) for 20 nail dystrophy and erythroderma, adverse drug reactions [ADR] respectively.

Out of 21 patients with psoriasis vulgaris as the final diagnosis large, deep pits, generally >20 pits, were the most common dermoscopic feature with 21 patients showing the same while avascular area and beau's line were seen in only 1 patient. Salmon patch was noticed in 14 patients while 12 patients showed onycholysis and 10 patients showed splinter hemorrhages. The results were in concurrence with studies where pits were the commonest findings i.e., by Rathod et al,[14] (64.5%), Bhat YJ et al,[15] 5 (85.71%) and Wanniang et al.,22 (84%) while splinter hemorrhage was the commonest in the study by Yorulmaz et al,[23] (73.1%). Varma K et al,[11] stated onycholysis (84.4%) as the most common observation followed by pits (81.3%), splinter hemorrhages (71.9%), and subungual hyperkeratosis (68.8%) in nail psoriasis.

Depending on the part of the nail unit involvement, nail psoriasis had a myriad of clinical and dermoscopic manifestations. Nail changes are also positively correlated with the severity of the disease and the presence of arthritis. Psoriatic onycholysis was dermoscopically seen as a whitish onycholytic area distally with a proximal characteristic reddish border (12 patients) which was not always visible to the naked eye. Pits were dermoscopically seen as deep punctate depressions, random in distribution, and surrounded by a whitish halo. The psoriatic pits were randomly distributed and were irregular in size and shape. Splinter hemorrhages were perceived as brownish-purple longitudinal streaks when old and bright red streaks when fresh seen commonly on the distal part of the nail plate. They result from the rupture of capillaries underneath the nail plate in the grooves. Subungual hyperkeratosis was regarded as a nonruinous aspect (non-destructive or compact) as opposed to onychomycosis.

In a study by Iorizzo et al,[24] hyponychial capillaries were witnessed as dilated, tortuous, and with an irregular distribution in all the cases [30(100%)]. 17 proximal nail fold showed alterations in capillary architecture with coiled and drop-out vessels. Capillaries along the onychodermal band were commonly found to be dilated and surrounded by a whitish halo (6.3%), which was discordant in the study by Yorulmaz et al,[23] (64.2%). Pseudo-fiber signs corresponded to arterial and venous ends of capillaries seen in 34.3% of cases in a study by Yorulmaz et al,[23] However, we failed to observe pseudo-fiber signs owing to the less magnification provided by our dermoscope. Salmon spots, also known as 'oil drop sign' [14 patients (66.7%)] were seen as dull red to orange-red globules in the nail plate while Bhat YJ et al,[14] and Polat et al,[25] observed salmon spots in 42.9% and 47.5% cases.

In the present study, amongst 12 patients diagnosed with acute paronychia, 7 showed positive signs of onychorrhexis & transverse ridge, 5 had chromonychia and cuticle loss, 4 showed onycholysis & onychoschizia, 3 patients showed brown-black bands, and splinter hemorrhages while only 2 showed hyperkeratosis, ragged cuticle & spiked pattern. Chronic paronychia is an inflammatory dermatosis affecting nail folds primarily, seen as reddish swelling and white scales on dermoscopy. In a study done by Varma K et al,[11] it was observed that irritants like detergents, caustics, and candida infection cause destruction of the cuticle, and it's dermoscopically seen as absent cuticle (80%). Secondary nail matrix involvement causes Beau's lines seen as transverse brown bands (60%) and brownish discoloration of the nail plate (40%). Rathod et al,[13] found transverse brown bands (87.5%) and brown color (66.7%) to be statistically significant.

Out of 5 patients with alopecia areata as the final diagnosis 5 showed onychorrhexis, superficial and uniform pits(S) & onychoschizia, 3 had ragged cuticle & transverse ridges while only 2 showed trachyonychia. However, in a study done by Varma K et al,[11] 4 patients of alopecia areata exclusively showed superficial, multiple circular punctate depressions corresponding to pits in all 4 cases. 3(75%) of them had a random distribution and 1(25%) had a regular geometric distribution, characteristically known as the "Scotch plaid appearance." Similar findings were noted by Rathod

et al,[13] where 75% of cases showed pits while 50% of cases showed longitudinal fissures.

In the present study, out of 6 patients with melanonychia as the final diagnosis, brown-black longitudinal band was most common with 6 patients presenting the same followed by 2 each of onychorrhexis, ragged cuticle & white Dots. Melanonychia can be because of either melanocytic activation or proliferation, thereby producing grey or brown-black bands respectively. When a malignant cause is suspected, irregular dark pigment bands are seen dermoscopically along with pigmentation on cuticle or periungual areas (Hutchinson's sign). Pigmentation of the upper free edge of the distal nail plate shows its origin at the proximal matrix while if in the lower portion shows its origin at the distal matrix. In a study done by Varma K et al,[11] 5 (3.9%) patients showed longitudinal melanonychia exclusively, one amongst them had nail discoloration in all 20 nails.

Out of 6 patients with scleroderma as final diagnosis, avascular area and capillary dropouts were the most common dermoscopic features while pterygium and ragged cuticle was minimally observed in only 1 patient. Proximal nail fold changes were commonly seen in connective tissue disorders which remained undetected by the unaided eye, but on dermoscopy capillary loops and hemorrhage could be detected easily. In a study done by Varma et al,[11] apart from micronychia and parrot beak nail, the capillaroscopic findings observed in systemic sclerosis were dilated capillaries, microhemorrhages, capillary dropouts, avascular areas, and ragged cuticle, each in 3 (75%) patients. The common findings in systemic sclerosis observed by Chojer et al,[26] (n=16) were avascular areas (81.25%), bizarre capillaries (81.25%), capillary dropouts (75%) and dilated capillaries (68.75%). Similar frequency of nail fold capillaroscopy changes had been reported by Maricq et al,[27] and Bergman et al.[28]

Limitations: The sample size in our study was too small to use onychoscopy as the diagnostic modality solely and thus more studies with larger sample sizes are required to validate these findings. It provides new criteria for diagnosis, hence in patients with diagnostic dilemma histopathological examination becomes mandatory. With the advent of better dermoscopes with higher magnifications (up to 100X), proximal nail fold capillaries could be better seen. Ours provided a magnification of 10X, hence they were not appreciated well.

CONCLUSION

Onchoscopy provides new criteria for diagnosis. It is an easy, non-invasive, fast, and cost-effective diagnostic tool that can allow the detection of subtle nail changes not visible to the naked eye. It assists in the diagnosis of nail disorders earlier so that they can be treated even before the disease progresses. In addition, it can help in differentiating benign lesions from malignant ones and helps us in avoiding unnecessary and painful nail biopsies. It also has the advantage of monitoring the progression of the disease. However, the interpreter needs to have a thorough knowledge of nail anatomy and its disorders. Hence, it is recommended to regularly incorporate nail dermoscopy in routine nail examinations.

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