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Nail As A Diagnostic Modality to Various Dermatological Diseases – A Cross Sectional Study

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Background:
Nail abnormalities comprise about 15% of dermatological disorders. A pink and lustrous nail is an indication of good health. The nail unit shows only limited changes to a large number of diseases affecting it.
Objective:
1. To evaluate nail as a diagnostic modality in various dermatological disorders.
Methods: *an prospective observational study was done in all patients attending DVL OPD, karpaga vinayaga institute of medical sciences and research centre. All patients underwent thorough clinical examination, and affected nails were examined with dermatoscope and clinical photographs were taken.*
Results*: Total 150 patients were included with following diseases: psoriasis(38), onychomycosis (34),physiological nail changes (30), lichen planus(19), alopecia areata (10) , periungual warts (5), systemic sclerosis(3) and pregnancy (2), systemic lupus erythematosus(3), erythroderma (3) , hansens disease(2),pyogenic granuloma (1). The most common onychoscopic pattern noted was pitting and onycholysis in psoriasis, greenish discolouration in infections, longitudinal melanonychia and pitting in lichen planus, fine pitting in alopecia areata, splinter haemorrhages in periungual warts, capillary dropouts in systemic sclerosis, longitudinal ridging in pregnancy, tortuous capillaries in systemic lupus erythematosus,enlarged and dilated capillaries in pyogenic granuloma, glistening nails and subungual hyperkeratosis in case of erythroderma, pallor of the nails in hansens disease.*
Conclusion: *onychoscope is most important in evaluating nail as diagnostic modality and reduces invasive procedures. It decreases the need for expensive and time-consuming investigations such as culture and biopsy.*
Key Word: *Onychoscopy.Dermatoscopy.*

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I. Introduction:

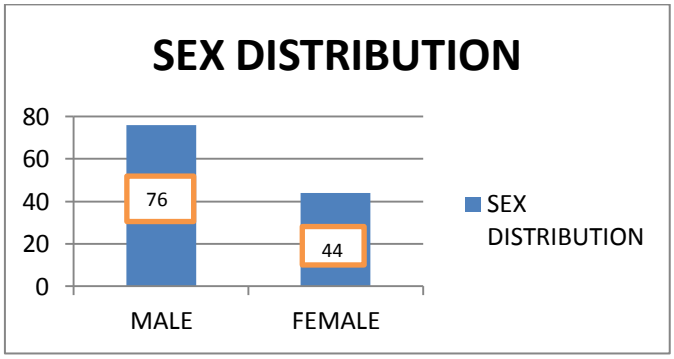
With evaluation, nails have become an important appendage of the body. A pink and lustrous nail has always been equated with good health. Nail disorders comprise approximately 15% of all dermatological conditions. The nail unit may show specific changes that are markers for a wide range of systemic disorders. In number of heritable and non-heritable disorders, the nail disease is an integral part of a multisystem. A number of dermatological disorders may also affect the nails. No physical examination is complete without a through nail examination. Nails remains an understudied, underutilized, yet quite accessible structure that lends itself so easily for examination and evaluation. Dermoscopy makes the physical examinations of nails easier by helping to diagnose the disease that is insufficient with naked eyes avoiding preliminary misdiagnosis and sometimes biopsy. Nail dermoscopy is usually evaluated dry in the nail plate surfaces or matrix varying from lower to higher magnification. Even though dermoscopy may not be a diagnostic tool for some nail diseases, it may aid in the rapid abnormality detection of nail diseases.

II. Materials And Methods:

An observational study was done at DVL OPD, karpaga vinayaga institute of medical sciences and research centre. All patients willing to give consent were included in the study and underwent clinical examination, and affected nails were examined under onychoscope, and all uncooperative and unwilling patients were excluded from the study. Onychoscopy was performed on a hard, dull working surface, avoiding any undue pressure by the patient or the examiner. For evaluation of vasculature, the hand was held at the level of the heart. Nail plate was cleaned with spirit to remove debris, dirt or external applications .

III. Results:

A Total 150 patients were included with males being 76 and females being 44. Following diseases were included: psoriasis(38), onychomycosis(34),llichen planus(19), alopecia areata (10) , periungual warts (5), systemic sclerosis(3) and pregnancy (2), systemic lupus erythematosus(3), erythroderma (3) , hansens disease(2),pyogenic granuloma (1),physiological nail changes without specific dermatoses(30). The most common onychoscopic pattern noted was pitting, salmon patch, splinter hemorrhage and onycholysis in psoriasis, greenish discolouration in onychomycosis, longitudinal melanonychia and pitting in lichen planus, fine pitting in alopecia areata, splinter haemorrhages in periungual warts, capillary dropouts in systemic sclerosis, longitudinal ridging in pregnancy, tortuous capillaries in systemic lupus erythematosus,enlarged and dilated capillaries in pyogenic granuloma,glistening nails and subungual hyperkeratosis in case of erythroderma, pallor of the nails in hansens disease.



S.NO	DISEASES	TOTAL NUMBER OF PATIENTS
1.	PSORIASIS	38
2.	ONYCHOMYCOSIS	34
3.	LICHEN PLANUS	19
4.	ALOPECIA AREATA	10
5.	PERIUNGUAL WARTS	5
6.	SYSTEMIC SCLEROSIS	3
7.	SYSTEMIC LUPUS ERYTHEMATOSUS	3
8.	ERYTHRODERMA	3
9.	HANSENS DISEASE	2
10.	PREGNANCY	2
11.	PYOGENIC GRANULOMA	1
12.	PHYSIOLOGICAL NAIL CHANGES	30
	TOTAL	150

S SSSS.NO	DISEASES	ONYCHOSCOPIC PATTERN
1.	PSORIASIS	pitting, salmon patch, splinter hemorrhage and onycholysis
2.	ONYCHOMYCOSIS	greenish discolouration, whitish discoloration, yellow jagged spikes pattern
3.	LICHEN PLANUS	longitudinal melanonychia , pitting, longitudinal ridging and pterygium
4.	ALOPECIA AREATA	fine pitting, trachynochia
5.	PERIUNGUAL WARTS	splinter haemorrhages
6.	SYSTEMIC SCLEROSIS	capillary dropouts and giant capillaries
7.	SYSTEMIC LUPUS ERYTHEMATOSUS	tortuous capillaries and giant capillaries
8.	ERYTHRODERMA	glistening nails and subungual hyperkeratosis
9.	HANSENS DISEASE	pallor of the nails
10.	PREGNANCY	longitudinal ridging and longitudinal melanonychia
11.	PHYSIOLOGICAL NAIL CHANGES WITHOUT SPECIFIC DERMATOSES	Longitudinal ridging, longitudinal melanoychia, pitting, pallor,leukonychia

IV. Discussion:

Nail abnormalities comprise about 15% of dermatological disorders[20] Onychoscopy of normal healthy nail plate appears pale pink in color with a smooth shiny surface.[5] Onychoscopy was limited to nail pigmentations, but now it is used for diagnosis of other nail disorders like onychomycosis [6], psoriasis[7], lichen planus[9], alopecia areata[10], systemic lupus erythematous, pregnancy [18,19], systemic sclerosis [12, 13,14].In our study out of 120 patients, male-76 and female-44.The age of subjects ranging from (10-75 years).The most common onychoscopic finding in this study is pitting seen in patients diagnosed as psoriasis(38) and lichen planus(19). In

a recent study done by Sari et al[12]. showed pitting (58.8%), onycholysis (46.6%), Beau's line (46.6%), splinter hemorrhage (46.6%), salmon patch (33.3%), and subungual hyperkeratosis (33.3%) as the common dermoscopic findings in nail psoriasis. Pitting which is one of the most common onychoscopic finding is also seen in lichen planus,which has been diagnosed in 19 patients in this study. In a study of dermoscopy of nail lichen planus done by Nakamura et al.[16] showed abnormalities of the nail matrix with trachyonychia (40.51%), pitting (34.18%); anomalies of nail bed with chromonychia (55.7%), fragmentation of nail body (50.63%), splinter hemorrhage (35.44%), onycholysis (27.85%), subungual keratosis (7.59%); anomalies of nail matrix, bed and perionychial region with longitudinal streaks (82.28%), anonychia (1.27%); and paronychia (31.65%).In our study nail changes of (10) patients found to be associated with alopecia areata.the normal onychoscopy features of alopecia areata include pits, tracyonychia, red lunulae, nail thining and ridging, longitudinal punctate leuconychia, splitting, dystropht, onycholysis, onychomadesis. According to Gandhi V, Baruah MC et al[23],20 nail changes were seen in 44% of alopecia areata patients[18]. The commonest abnormality observed was superficial pits seen in 64% of patients. Yorulmaz and yalcin et al[21] reported the most common dermoscopic manifestations in 81 patients with onychomycosis was jagged-spike pattern of onycholysis in 52% followed by subungual ruin pattern and whitish patches(leukonychia),in our experience,dermoscopy is diagnostics for onychomycosis. In our study onychoscopic findings in patients presented with periungual wart showed splinter hemorhage and subungual hyperkeratosis in closed proximity to the wart. Onychoscopic findings such as dilated nail bed capillaries and capillary dropouts are specifically seen in patients with systemic sclerosis, which is one the diagnostic clue. Dilated nailbed capillaries are also seen in patients with systemic lupus erythematosus. Some of the least common onychoscopic findings encountered in our study include pallor of the nailbed and longitudinal ridging which is found in patients diagnosed to have Hansens disease. Kaur I et al[21] observed that in leprosy, most common change observed was longitudinal melanonychia (32.4%) in the finger nails and longitudinal ridging (46.3%) in the toe nails, supported the onychoscopic findings in our study. In this study nail changes like Longitudinal ridging, longitudinal melanoychia, pitting, pallor, leukonychia, are observed in 30 patients with no clinically significant or specific dermatological disorder.

V. Conclusion:

Nail act as important tool in diagnosing unapparent dermatological disorders may be possible by a simple but detailed nail examination .Dermatological disorders associated with nail present as defect in anatomical components of the nail unit. Onychoscopy is a non-invasive, and cost-effective diagnostic tool that allows detection of nail changes that are not visible to the normal eye. Onychoscopy reduces invasive procedures and is cost effective in diagnosing subclinical and unapparent dermatological and systemic diseases . Onychoscopy has become an reliable and effective diagnostic tool for various dermatoses. It permits visualisation of different nail sign,which gives clue towards specific dermatoses.Onychoscopy reveals several diagnostic features which are not visible to naked eye.Onychoscopy however required good knowledge of anatomy and diseases pertaining to nails.Diagnostic criteria based on onychoscopy features for various nail disease are been varingly researched and its in the process of evalution.Large number of studies are needed yet, to increase the sensitive and specific diagnostic value of onychoscopy.

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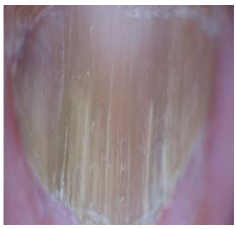
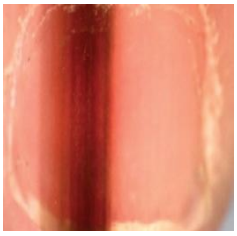
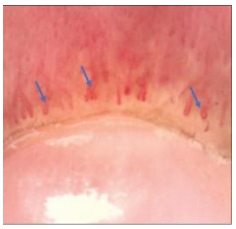
PICTURES



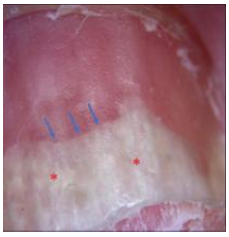
LONGITUDINAL RIDGING



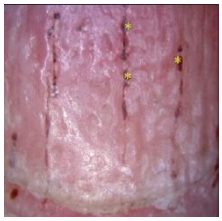
LONGITUDINAL MELANOYCHIA



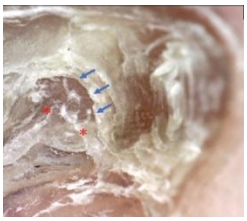
GIANT CAPILLARIES



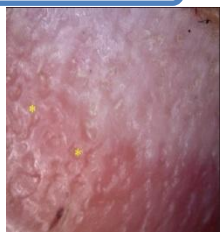
ONYCHOLYSIS



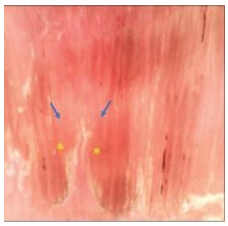
SPLINTER HEMORRHAGE



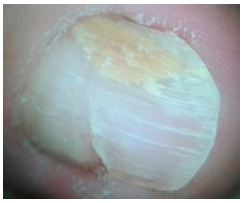
SUBUNGUAL HYPERKERATOSIS



PITTING



PTERYGIUM



ONYCHOMYCOSIS

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