



DERMOSCOPIC CLUES FOR THE DIAGNOSIS OF PALMOPLANTAR DERMATOSES.

Dermatology

Dr. Gogineni Prananka	3rd Year Postgraduate, Department of DVL, Alluri Sitarama Raju Academy of Medical Sciences Eluru, West Godavari District, Andhra Pradesh, 534005, India.
Dr. T. Nirupama Bhagyalakshmi*	Professor & HOD, Department of DVL, Alluri Sitarama Raju Academy of Medical Sciences Eluru, West Godavari District, Andhra Pradesh, 534005, India. *Corresponding Author
Dr. D. Praveen Kumar Raju	Associate Professor, Department of DVL, Alluri Sitarama Raju Academy of Medical Sciences Eluru, West Godavari District, Andhra Pradesh, 534005, India.
Dr. K. Hari Krishna Babu	Professor, Department of DVL, Alluri Sitarama Raju Academy of Medical Sciences Eluru, West Godavari District, Andhra Pradesh, 534005, India.

ABSTRACT

Background: Dermatoses affecting the palms and soles are more common in our day-to-day practice, because they are most frequently exposed to various allergens, mechanical stress and infectious agents than any other parts in our body. Histopathological examination is the tool used by dermatologists to arrive at a final diagnosis, but it is invasive and not feasible under all circumstances. Dermoscopy is a new age, increasingly popular, noninvasive diagnostic technique of great value that is used to diagnose underlying etiology by acting as a bridge between clinical and histopathological pictures. This study aimed to evaluate the role of dermoscopy in the diagnosis of each disease along with its ability to delineate a close differential diagnosis. **Aim:** To investigate the utility of dermoscopy in common palmoplantar disorders. **Methodology:** A series of 50 cases of palmoplantar dermatoses included were in this case series from March 2023 to March 2024 at Alluri sitarama raju academy of medical sciences, eluru. Detailed and informed consent was taken from the patients. The following disorders were included in the research : palmar eczema, palmoplantar psoriasis, palmoplantar warts, lichen planus, scabies. All of the cases which were on treatment were excluded from study. A detailed history and thorough dermatological examination was done. Palms and soles were examined in detail. For scaly lesions wet mount and 10% potassium hydroxide mount were done and for pustular lesions gram stain was done. Skin biopsy was taken for some cases. Dermoscopy with DermLite DL4 was performed in all cases on lesional areas, and the findings were noted **Conclusion:** Although hyperkeratoses of palms and soles are a common clinical entity, the similarity between the clinical features of the underlying conditions causes a diagnostic dilemma for treating dermatologists. Dermoscopy is a noninvasive, quick, reproducible, supportive investigation in the diagnosis of these conditions that certainly aids in reaching closer to a differential diagnosis and for better delineation, but it does not avert the need for a skin biopsy. Further confirmation with histopathological examination is advisable, especially in these conditions as they show close morphological similarity.

KEYWORDS

INTRODUCTION

Dermatoscopy is a non-invasive diagnostic technique that is widely used for in vivo examinations of skin lesions. It improves the diagnostic accuracy for pigmented and non-pigmented cutaneous proliferations and enables users to detect criteria that are invisible with the unaided eye. Application of dermatoscopy is straight forward and fast and can be easily incorporated into clinical routine. An increasing number of publications on alternative applications of dermatoscopy suggests that dermatoscopy is gaining appreciation for the diagnosis of non-neoplastic skin diseases, such as inflammatory skin diseases and skin infections and infestations. Due to its broader scope, the vocabulary of dermatoscopy expanded significantly over the last few years

In 2019, the International Dermoscopy Society (IDS) published a consensus paper on standardization of dermoscopic terminology in non-neoplastic dermatoses. A set of the following 5 dermoscopic parameters was proposed as a basic guide to use in general dermatology: (I) vessels (including morphology and distribution); (II) scales (including colour and distribution); (III) follicular findings; (IV) 'other structures' (structures other than vessels/scales; including colour and morphology); and (V) 'specific clues' (features that, when present, are strongly suggestive of only 1 diagnosis due to a strict dermoscopic-pathological correlation).

Palms and soles have a non-hairy or glabrous skin which is marked by a series of ridges and grooves (sulci) with a configuration unique to each individual known as Dermatoglyphics. They have thicker epidermis, complex dermo-epidermal junction and an encapsulated sense organs within dermis and highest concentration of sweat glands but lacks sebaceous glands, apocrine glands and hair follicles.

Palms and soles are affected by various dermatological diseases. There is no universally approved classification for palmoplantar dermatoses. They can be classified based upon the causes into inflammation,

infection, papulo-squamous and keratinization disorders.

Table 1 : Classification of Palmoplantar Dermatoses

CONDITIONS	DISEASES
INFLMMATION	Eczema (endogenous, exogenous), erythema multiforme, id reaction
INFECTIONS	Bacterial : Pitted keratolysis, intertigo, sec.syphilis, leprosy Viral : warts, hand-foot-mouth disease, Fungal : dermatophytosis, candidiasis
KERATINIZATION DISORDERS	Palmplantarkeratoderma , keratolysisexfoliata
PAPULO SQUAMOUS DISORDERS	Palmoplantar psoriasis, lichen planusplamplantaris
DRUG REACTION	Acral erythema
MECHANICAL INJURY	Trophic ulcer, corn, callosities, traumatic fissures, friction blisters,
AUTOIMMUNE DISORDERS	Bullous pemphigoid (dyshydrosiform variant)
DISORDERS OF SWEAT GLAND	Hyperhidrosis
MALIGNANCY	Tripe palm Acral melanoma

Eczema' and 'dermatitis are interchangeable terms. Eczema is a clinical and histological pattern of inflammation of the skin. It is characterized by erythema, vesiculation in acute stage and lichenification and fissuring in the chronic stage. Morphological classification of eczema include Dyshidrotic eczema/Pompholyx, Hyperkeratotic eczema, Finger tip eczema, Ring eczema, Apron eczema, Recurrent focal palmar peeling, Housewives dermatitis, Chronic acral dermatitis, Patchy vesiculosquamous eczema and Gut/slaughter house eczema.

Psoriasis is a T cell mediated, chronic inflammatory disorder of the skin. It is characterized by well defined, erythematous papule or plaque

with silvery scales on the surface. Psoriasis in palms and soles present in four ways – chronic plaque psoriasis, hyperkeratotic eczema type, palmoplantar pustulosis and psoriatic keratoderma.

Lichenplanus(LP) is a benign, pruritic, idiopathic inflammatory disorder which can affect the skin, nail, mucous membrane and hair. If it affects palms and soles, it is known as palmoplantar lichen planus(PPLP). The typical primary lesion of cutaneous LP is a papular eruption characterized by the development of flat-topped, violaceous papules on the skin. In 1895, Wickham noted the characteristic reticulate white lines on the surface of LP papules now recognized as Wickham striae.

Wart is an infectious disease caused by Human papilloma virus. The morphological variants of warts are common wart, plane wart, filiform wart, palmoplantar wart, anogenital wart, pigmented wart.

Pitted keratolysis is also known as keratolysis plantar esulcatum. It is a bacterial infection caused by corynebacterium, micrococcus (kytrococcus sendentarius), dermatophilus congolensis, actinomyces. Under prolonged hyperhidrosis, occlusion and contact with the wet surface, the bacteria proliferates and release proteinase that destroys the stratum corneum. Sulphur compounds such as thiols and thiol esters were responsible for the malodour.

The word 'intertrigo' comes from the Latin word inter-between and terere-to-rub. There will be poor circulation of air between web spaces, so water retained in the web spaces over hydrate the epidermis, which easily macerate on trivial trauma or repeated friction.

Hand foot mouth disease - Acute infection caused by coxsackievirus A16, A6 and enterovirus 71. Children less than 10 years are most often affected. Incubation period varies from 3-6 days. Initially patient has prodromal symptoms which is followed by exanthem over the tongue and buccal mucosa. The disease is self-resolving and management is supportive.

Dermatophytosis is an infectious disease of skin, hair and nail caused by a group of filamentous fungi known as dermatophytes. The term tinea pedis is used for dermatophyte infection of the feet. Tinea manuum refers to dermatophyte infection of hands, caused by T. rubrum, T. mentagrophyte & E. floccosum. Tinea manuum usually affects the dominant hand but it can also occur bilaterally. Other variants like vesiculobullous, pustular and papular types are also seen. Dermatophytosis is differentiated from eczema by concurrent involvement of nails (T. unguium).

Hyperhidrosis - Excess sweat secretion is controlled by a negative feedback from sweat gland to hypothalamus. Dysfunction in this pathway may lead to hyperhidrosis. Palmoplantar hyperhidrosis may be continuous or phasic. When continuous, it is not related to emotional stress. But phasic hyperhidrosis clearly associates with emotional stress.

Aims & Objective

To investigate the utility of dermoscopy in common palmoplantar disorders.

MATERIALS & METHOD

A series of 50 cases of palmoplantar dermatoses were included in this case series from March 2023 - March 2024 at Alluri Sitarama Raju Academy of Medical Sciences.

Details and informed consent was taken from the patients. The following disorders were included in the research: palmar eczema, palmoplantar psoriasis, palmoplantar warts, lichen planus, scabies. All of the cases which were on treatment were excluded from study. A detailed history and thorough dermatological examination was done. Palms and soles were examined in detail. For scaly lesions wet mount and 10% potassium hydroxide mount were done and for pustular lesions gram stain was done. Skin biopsy was taken for some cases. Dermoscopy with DermLite DL4 was performed in all cases on lesional areas, and the findings were noted.

RESULTS

In this study, 50 patients with following diseases were enrolled in the study: palmoplantar psoriasis (15 cases), palmoplantar eczema (12 cases), lichen planus palmoplantaris (10 cases), palmar warts (6

cases), candidal intertrigo (3 cases), corn (1 case), fissures (2 cases).

On dermoscopy, palmoplantar psoriasis showed diffuse white scaling on an erythematous background with appearance of uniform dotted vessels.

Palmar eczema showed perilesional scaling followed by clusters of dotted vessels.

In Lichen planus palmoplantaris background erythema and central keratotic plugs surrounded by collarette and concentric scaling were observed.

Warts showed hemorrhagic points and lines that are often surrounded by a whitish halo, known as "Frogspawn pattern".

DISCUSSION

Palmar Eczema: The most prevalent dermoscopy features of HPKE (Figure 2) were perilesional skin scaling (100%), followed by clusters of dotted vessels (70%) and brown-orange globules (65%). Uniform dotted vessels were absent in HPKE while clusters of dotted vessels were found more in HPKE (70%) patients.

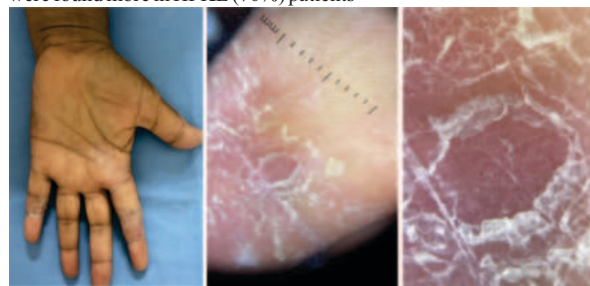


Figure 1 : Palmar Eczema

Palmoplantar Psoriasis (PPP)

The dermoscopy features most commonly found in PPP were background erythema and diffuse white scales (both present in 80% of patients), followed by the appearance of uniform dotted vessels. Diffuse white scaling was present in both PPP and HPKE. Brown-orange globules were absent in PPP, while uniform dotted vessels were exclusively found in PPP.

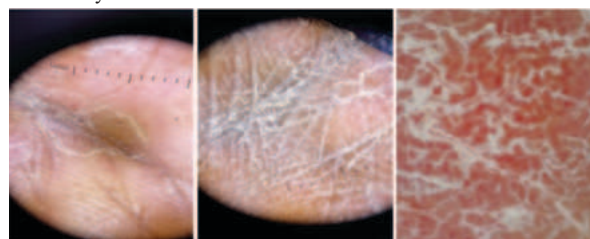


Figure 2: Palmoplantar Psoriasis

Warts

Hemorrhagic points and lines are often surrounded by a whitish halo, known as "Frogspawn pattern" can be seen in figure _____. Papillomatous with a hint of finger-like projections pattern can be seen too. One case shows dotted vessels on raised pale multiple papillae.



Figure 3: Warts

Palmar Lichen Planus

Palmoplantar lichen planus (LP) is an uncommon localized variant of lichen planus. Diffuse white scaling was the most prominent feature of palmoplantar LP, followed by yellow and white scaling. Background erythema and central keratotic plugs surrounded by collarette and concentric scaling were observed. Wickham's striae are typically white, they could also appear yellow on palmoplantar areas.

CONCLUSION

Although hyperkeratoses of palms and soles are a common clinical entity, the similarity between the clinical features of the underlying conditions causes a diagnostic dilemma for treating dermatologists. Dermoscopy is a noninvasive, quick, reproducible, supportive investigation in the diagnosis of these conditions that certainly aids in reaching closer to a differential diagnosis and for better delineation, but it does not avert the need for a skin biopsy. Further confirmation with histopathological examination is advisable, especially in these conditions as they show close morphological similarity.

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