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# Dermatoscopic Findings in Palmoplantar Dermatoses

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and Aylin Türel Ermertcan*

## Abstract

Dermatoscopy is a useful, non-invasive method in the diagnosis of various dermatological diseases. Dermatoscopy of non-pigmented skin lesions shows additional morphologic features, such as cutaneous vascular pattern, scale color and scale distribution pattern, and background color. Dermatoscopy can be useful tool in differential diagnosis in palmoplantar dermatoses. The most specific dermatoscopic features of hand eczema include yellowish-orange globules, yellowish scales and yellowish crusts. Light red background color, regular vascular distribution pattern, dotted vessels and white scale color have been reported in previous studies as dermatoscopic features of palmoplantar psoriasis. Dotted vessels can be seen in various dermatoses, such as psoriasis, eczema, lichen planus, porokeratosis and keratodermas. The distribution pattern and color of the scales are also important in the differential diagnosis of palmoplantar dermatoses. Previous studies have shown that scales are mainly localized in skin furrows in patients with tinea manum. Patchy distributed, homogeneous, structureless, orange areas were reported in palmar keratoderma due to pityriasis rubra pilaris. Amber scales, white-to-pinkish background; sparse whitish scales were reported in palmar keratoderma due to mycosis fungoides. Dermatoscopic findings of palmoplantar area can help in the differential diagnosis of various dermatoses.

**Keywords:** dermatoscopy, palmoplantar, eczema, psoriasis, tinea manuum

## 1. Introduction

Dermatoscopy is a useful, non-invasive and cost-effective diagnostic tool for benign and malignant skin tumors; it is also important in the clinical diagnosis of pigmentary disorders, hair-nail disorders, inflammatory and infectious diseases [1].

Palmoplantar dermatoses include a wide range of skin conditions. Dermatological diseases involving palmoplantar region are a common question when consulted in dermatological practice. The correct diagnosis is often easy on the basis of typical clinical characteristics, but could be difficult when several entities occur at the same time or overlap.

Many dermatological diseases can involve palmoplantar region; such as inflammatory dermatoses, infections and palmoplantar keratodermas (PPKs). In particular, differential diagnosis of inflammatory dermatoses such as eczema, psoriasis, pityriasis rubra pilaris (PRP), lichen planus may be more difficult in patients with isolated involvement of the palmoplantar region.

## 2. Dermatoscopic findings in palmoplantar dermatoses

### 2.1 Inflammatory dermatoses

Dermatoscopy has been shown to be a useful supportive tool to assist the diagnosis of inflammatory skin diseases [2–10].

In this section, dermatoscopical findings in inflammatory dermatoses localized in the palmoplantar region will be discussed.

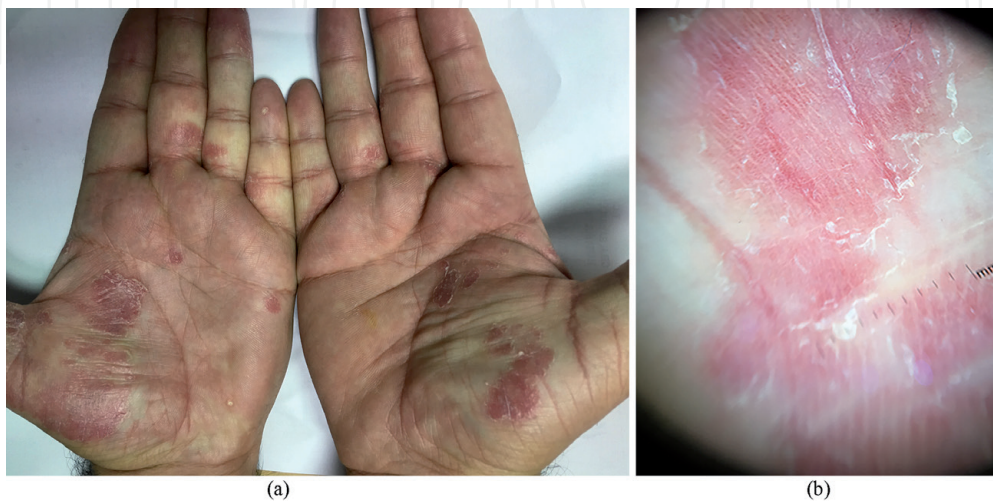
#### 2.1.1 *Psoriasis vulgaris*

Psoriasis is a common skin disorder that can affect people of all ages. Chronic plaque psoriasis (psoriasis vulgaris) is the most common form of the disease, and accounts for about 90% of cases [11]. Psoriasis can affect any skin site. Palmoplantar plaque psoriasis is a manifestation of plaque psoriasis which affects the palms and soles [12]. It could present as isolated palmoplantar involvement or may be associated with generalized psoriasis vulgaris [13, 14].

There are few studies in the literature regarding the use of dermatoscopy in palmoplantar psoriasis [2–4]. Dermatoscopy of palmoplantar plaque psoriasis shows a characteristic pattern consisting of diffuse white scales and symmetrically, regularly distributed dotted vessels on a light or dull red background [1–6]. It has been reported that the scale distribution pattern is rarely central or patchy [2, 5].

Although dotted vessels are a hallmark of trunk and extremity plaque psoriasis [6], as well as palmoplantar involvement [2], it should be remarked that this finding is not specific for psoriasis vulgaris. It could also be seen in eczema [2, 3], Bowen's disease [7], lichen nitidus [8], lichen simplex chronicus [15] and PRP [5, 9, 16]. Based on these findings, it can be suggested that dotted vessels may not be useful to distinguish psoriasis from other dermatoses, but the vascular distribution pattern may be beneficial in the differential diagnosis [2, 3, 17, 18].

Regular dotted vessels are the most common vascular distribution pattern in palmoplantar psoriasis [2, 3, 18]. Yu et al. found that beaded distributed dotted vessels along the sulci cutis is important new finding in psoriasis. It has been suggested that this finding, which is not seen in palmoplantar eczema, may be useful in differential diagnosis [4]. **Figure 1a** shows clinical view of palmar psoriasis vulgaris and **Figure 1b** shows regular dotted vessels on light red background.



**Figure 1.**  
(a) Palmar psoriasis vulgaris. (b) Regular dotted vessels on a light red background.

Vazquez-Lopez et al. described the vascular pattern that they specifically named “red globular rings” in plaque psoriasis lesions [19]. Lacarrubba et al. reported this pattern is a less common, but specific vascular pattern in plaque psoriasis lesions [20]. We showed red globular ring vessels in psoriasis also in palmoplantar lesions. Rarely, other vessel types have been reported in palmoplantar region [2].

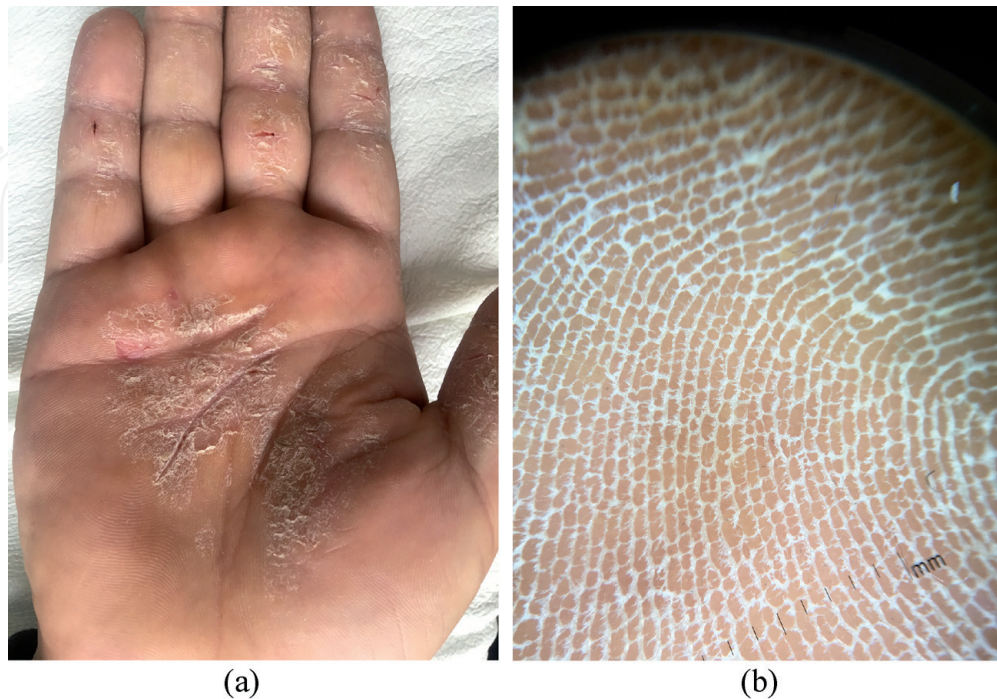
Micali et al. showed dilated/tortuous “bushy” capillaries in all of the patients with palmar and/or plantar psoriasis by using videodermatoscopy. On the other hand, this pattern was not detected in patients with palmar and/or plantar eczema. Normal capillary pattern or dilated capillaries without tortuous or “bushy” appearance were showed in eczema [21].

The background color of the lesion, scale color and scale distribution pattern are useful findings to differentiate inflammatory dermatoses [2–10, 22].

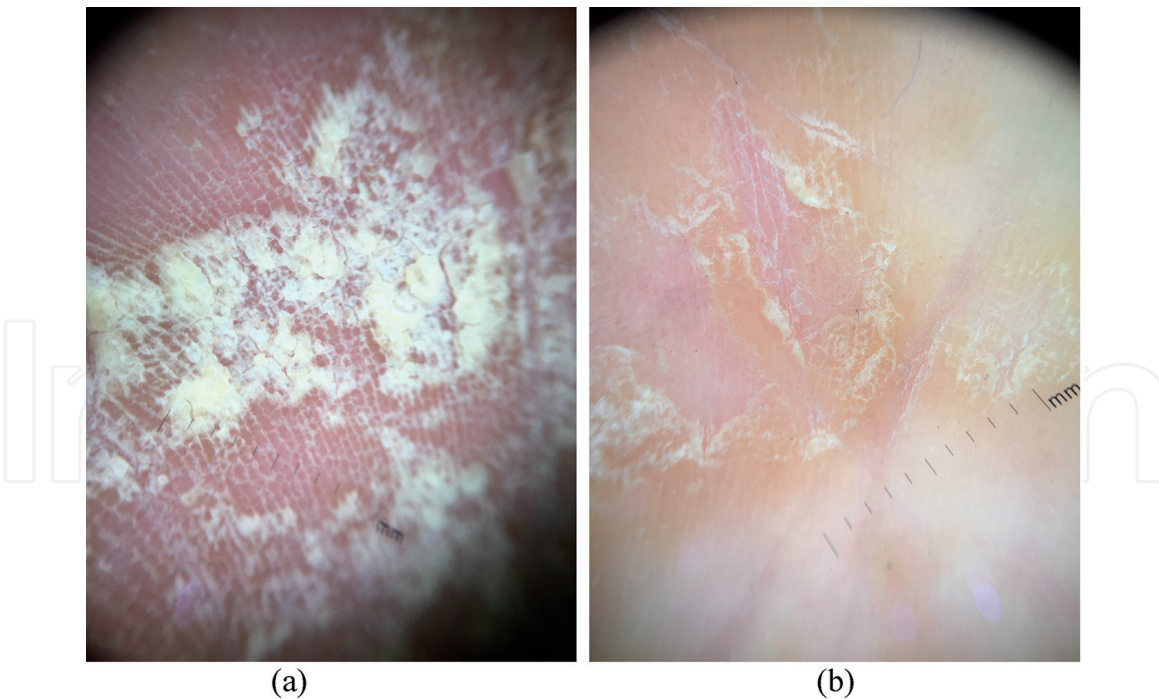
Diffuse white scale is the most common scale distribution pattern in both the body and palmoplantar psoriasis lesions. The presence of diffuse white scales in psoriasis could explain with the dry and hyperkeratotic nature of plaque psoriasis [1, 15, 23]. Central and peripheral scale distribution patterns are very rare in psoriasis [2]. **Figure 2a** shows clinical view of palmar psoriasis and **Figure 1b** shows diffuse white scales along with the skin furrows. **Figure 3a** shows diffuse white scales in palmar plaque psoriasis.

It is recommended to examine the vascular structures after the scale is removed because of difficulty to show the vascular structures in palmoplantar region due to the presence of hyperkeratosis [3, 6, 24, 25]. In addition, it is suggested to use a fluid interface to reduce the scaling [6].

Lallas et al. examined the background color of the lesions in patients with plaque psoriasis, eczema, pityriasis rosea and lichen planus affecting the trunk and /or upper or lower extremities. They found that the most common background color was light red in psoriasis and, white versus yellow scales along with regular versus patchy distribution of dotted vessels may represent a valuable clue in the differential diagnosis of plaque psoriasis and nummular eczema [22]. Similarly, we found that light red is the most common background color in patients with palmoplantar psoriasis [2].



**Figure 2.**  
(a) *Palmar psoriasis vulgaris.* (b) *Diffuse white scales along with the skin furrows.*



**Figure 3.**  
 (a) Diffuse white scales in palmar psoriasis. (b) Yellowish background and patchy yellow scales in eczema.

Specific clues can also be used in the differential diagnosis of inflammatory dermatoses. Palmar papular psoriasis can be differentiated from porokeratosis, with the absence of peripheral annular whitish keratotic track [26], and lichen planus, which is characterized by the detection of Wickham striae [26, 27].

In a recent study, Yu et al. investigated 26 patients with palmoplantar psoriasis and 31 patients with palmoplantar eczema. The most common dermoscopic appearance of psoriasis was a red background, white scales, and dotted/globular/hairpin type vessels in a regular arrangement, while the presence of pink background, yellow scales, and atypical blood vessels in an irregular arrangement were observed in eczema. The most specific dermoscopic finding in psoriasis was hairpin type vessels (100%), and followed by regular arrangement of blood vessels (93.55%), red background color (87.1%), dotted or globular vessels (77.42%), and white scales (54.84%). They suggested that regular arrangement of vessels was the most valuable finding for the diagnosis of palmoplantar psoriasis and they reported that dotted vessels in beaded distribution pattern along the sulci cutis that cannot always be shown was very specific for psoriasis. They suggested that the most characteristic dermoscopic finding of psoriasis is the regular distributed hairpin/dots/globular vessels. It is assumed that the appearance of these vascular structures changes according to the position of the dermatoscope. When dermatoscope is perpendicular to dilated capillaries dotted/globular type vessels could be seen, ring/hairpin type vessels could be seen when viewed with angle. Yu et al. showed hairpin type vessels in 34.6% of PP patients. However, they suggested that hairpin type vessels show a high diagnostic specificity for psoriasis. They also reported that, unlike in other studies [2, 3], the color of the scales was not significant in the differential diagnosis of eczema and psoriasis in the palmoplantar region [4].

Lallas et al. investigated 22 palmoplantar psoriasis lesions (14 on palms and 8 on soles) under dermatoscopy. They showed diffuse white scales and regular dotted vessels. Dotted vessels were seen in 90% of lesions, this ratio was the lowest compared to other body parts. They explained this finding by the thickness of the epidermis of palmoplantar region, which possibly impedes the visualization. They showed white scales in all palmoplantar lesions [6].

We examined dermatoscopic findings of 90 patients, 35 palmoplantar pustular psoriasis and 55 palmoplantar hyperkeratotic eczema. Similar to other studies, we showed red background color, regular vascular distribution pattern, red globular ring vessels and white scale color in psoriasis in our study [2].

### 2.1.2 Pustular psoriasis

Palmoplantar pustular psoriasis (PPP) is a chronic immune-mediated skin disease that mainly affects women in the fourth to seventh decade of life. It is a debilitating disease of the palms and/or soles and show high resistance to treatment [28]; in addition has a high impact on health-related life quality [29]. PPP is characterized by eruptive, sterile intraepidermal pustules on the palms and soles, with psoriasis vulgaris-like erythematous and desquamating lesions [14].

Pustular psoriasis shows yellow globules correspond to non-follicular superficial pustules; and regularly distributed dotted vessels correspond to papillary dermal vessels dilatation. In addition, white or yellow scales or crusts may also occur [5, 10, 15, 30].

Although pustules are not visible on clinical examination, yellow globules may be seen with dermatoscopy even at initial stages [30–32].

Palmoplantar pustulosis, or pustulosis palmaris et plantaris, is a chronic inflammatory and recurrent skin disease with clinical findings of erythema, scales and pustules on the palms and soles. In the advanced stage, the lesions consist of numerous pustules on an erythematous-squamous base [33]. To the our knowledge, there is no previous report about dermatoscopical findings in palmoplantar pustulosis. We showed white scales, yellow globules and regular dotted vessels similar to palmoplantar pustular psoriasis. **Figure 4a** shows clinical view of palmoplantar pustulosis and **Figure 4b** shows yellow globules, white scales and regular dotted vessels.

## 2.2 Eczema

Chronic hand eczema (CHE) clinically presents with sharply demarcated areas of thick scaling or hyperkeratosis on the proximal or middle aspect of the palms [34]. Eczematous dermatitis shows some differences according to the disease stage. Acute exudative lesions represent yellow scales/crusts and chronic lesions demonstrate patched distributed dotted vessels with scaling [15, 22, 35].

The characteristic dermatoscopic findings of CHE include yellowish scales, brownish-orange dots/globules, and yellowish-orange crusts [3, 5]. **Figure 3b** shows yellowish background and patchy yellow scales in eczema.



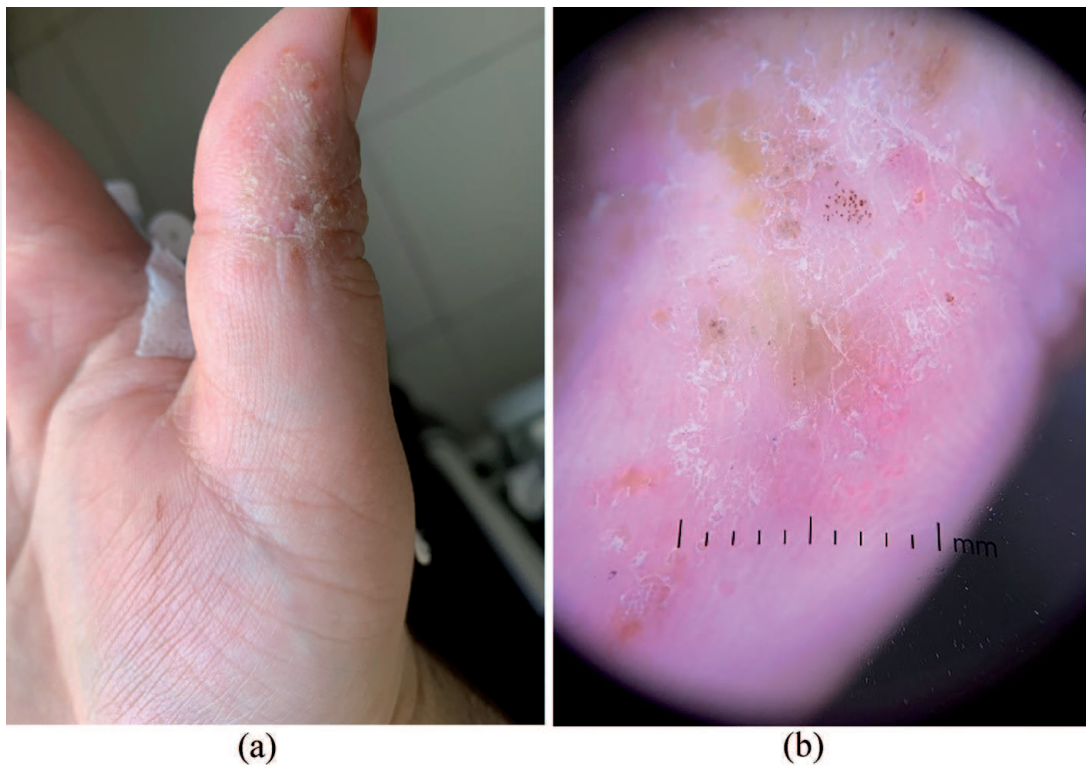
**Figure 4.**  
(a) Palmoplantar pustulosis. (b) Yellow globules, white scales and regular dotted vessels.

Patchy dotted vessels with yellow scales are indicative of eczema in body and extremity lesions [22]. Errichetti et al. suggested that dermatoscopic features of CHE is similar to eczematous dermatitis localized on other sites. Dermatoscopic features of CHE includes yellowish scaling with or without white scales, yellowish crusts and focal dotted vessels [1, 15, 23]. Similar to previous studies [18, 22], patchy vascular distribution pattern and dotted vessels have also been demonstrated in the palmoplantar region of eczema patients [2, 3]. Glomerular, linear and hairpin vessels have been rarely reported in CHE [2, 3].

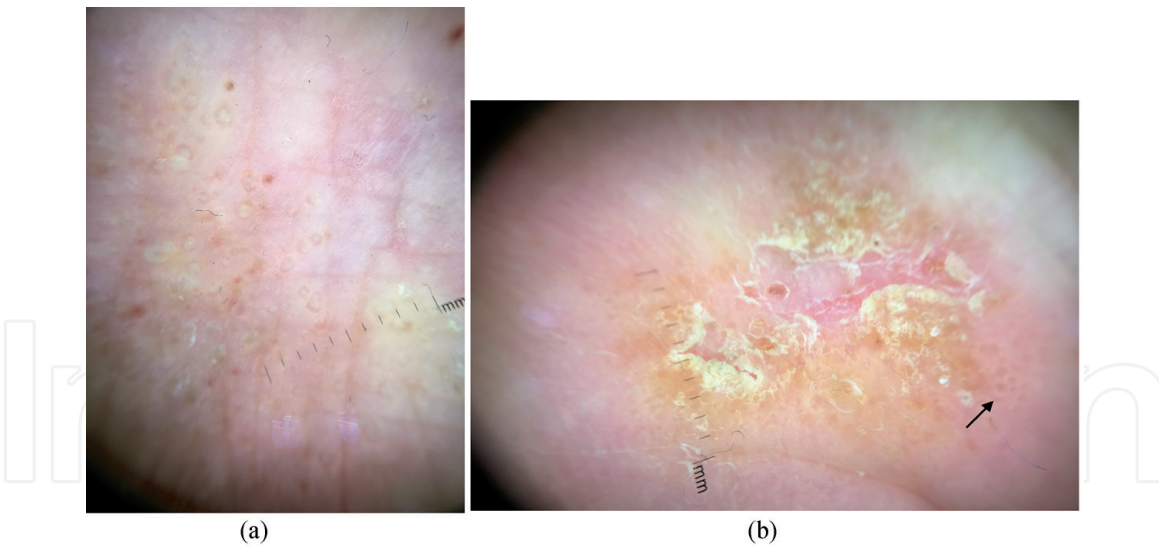
Errichetti et al. reported dermatoscopic findings of 10 patients with palmar psoriasis and 11 patients with CHE. Yellowish scales, brownish-orange dots/globules and yellowish-orange crusts have been shown in CHE. It was suggested that the presence of brownish-orange dots/globules corresponds to tiny spongiotic vesicles. Palmoplantar spongiotic vesicles have a higher resistance to rupture compared with other areas because of the increased thickness of the keratin layer at these sites [3]. Similarly, we showed yellow-orange crusts, patchy vascular distribution pattern, brownish-orange globules, yellow scale color and dull red background color in CHE in our study [2]. Yu et al. found that brown-orange-yellow dots are significant for the diagnosis of palmoplantar eczema [4]. Yellowish scales, brownish orange dots/globules and yellowish-orange crusts show the spongiotic nature of CHE [1, 3].

**Figure 5a** shows clinical view of dyshidrotic eczema and **Figure 5b** shows yellowish background, brownish-orange globules and yellow scales in dyshidrotic eczema.

We also observed globule structures with pale center and dark peripheral rim only in patients with CHE, which was thought due to spongiosis progressing to vesicle formation that suggesting eczema. Dark peripheral rim may be associated with hyperkeratotic foci around vesicles [2]. **Figure 6a** shows globule structures with pale center and dark peripheral rim in CHE. **Figure 6b** shows yellowish background, brownish-orange globules and yellow scales in CHE.



**Figure 5.**  
(a) Dyshidrotic eczema. (b) Yellowish background, brownish-orange globules and yellow scales in dyshidrotic eczema.



**Figure 6.** (a) Globule structures with pale center and dark peripheral rim in chronic hand eczema. (b) Yellowish background, brownish-orange globules and yellow scales in chronic hand eczema.

Errichetti et al. noticed a higher prevalence of scaling than vessels compared to other studies. This difference could be explained by the use of an interface fluid in the previous studies which improved the visualization of the vessels [6].

It has been suggested that the color of scales (white vs. yellow) is the most useful clue for distinguishing psoriasis and eczematous dermatitis in body localizations [1, 15, 23]. In previous studies, yellow is the main scale color in palmoplantar eczema [2, 3]. The histopathological reason for this color is irregular hyperplasia of the spinous layer, spongiotic edema, and serous exudation of the cuticle layer [4].

Unlike other studies, Yu et al. suggested that scale color in palmoplantar psoriasis is similar to eczema because of the topical drug usage and the presence of a thicker corneous layer. They also showed atypical vessels and dark red stasis around cracks in palmoplantar eczema. This finding could be explained by itch-provoked excoriations [4]. **Figure 4a** shows globule structures with pale center and dark peripheral rim in chronic hand eczema and **Figure 4b** shows yellowish background, brownish-orange globules and yellow scales in CHE.

### 2.3 Keratodermas

Palmoplantar keratodermas (PPKs) are diverse group of disorders that are characterized by abnormal thickening of the skin on the palms and soles. PPKs may be divided into acquired and genetic types [36].

Acquired PPKs lesions have a wide range of clinical appearances: diffuse, focal, and punctate. There are many causes of acquired PPKs [37].

In this section, dermoscopic findings of PPKs will be discussed. There are a few publications on dermoscopy of PPKs in the literature.

#### 2.3.1 Keratoderma due to pityriasis rubra pilaris

PRP is an inflammatory skin disease, and its most common presentation is characterized by follicular and palmoplantar hyperkeratosis and orange-red scaling plaques [38].

Papular lesions of classic PRP usually reveal round/oval yellowish areas surrounded by vessels of mixed morphology (i.e., linear and dotted) and often centered by central keratin plugs on body lesions [10, 15, 25, 39]. It has been suggested



that orange-colored areas in PRP-related acquired keratoderma is compatible with the clinical finding of such a tint in PRP [25, 40, 41].

There is only one report in the literature reporting dermatoscopic findings in palmar keratoderma due to PRP. Errichetti et al. reported dermatoscopic findings in four palmar acquired keratoderma patients (1 psoriasis, 1 eczema, 1 PRP, 1 mycosis fungoides (MF)) in their study. They reported monomorphous aspect consisting of whitish scaling with patchy distributed, homogeneous, structureless, orange areas presenting with different sizes in palmar acquired keratoderma due to PRP. Non-specific dermatoscopic structures, including whitish scaling and reddish fissures could be seen [25].

### *2.3.2 Keratoderma due to mycosis fungoides*

Mycosis fungoides (MF), the most common cutaneous T-cell lymphoma, typically presents with inflammatory erythematous patches or plaques in its early stage. There is only one publication in the literature reporting dermatoscopic findings in palmar acquired keratoderma due to MF. It has been observed relatively large, amber scales over a white-to-pinkish background; sparse whitish scales and several non-specific reddish fissures in palmar acquired keratoderma due to MF [25].

They concluded that the presence of large amber scales and a pale background in MF-related acquired keratoderma might be due to the marked/compact hyperkeratosis/acanthosis [25, 40, 42].

### *2.3.3 Aquagenic syringeal acrokeratoderma*

Aquagenic syringeal acrokeratoderma (ASA) is a rare acquired condition characterized by translucent papules and plaques with apparent eccrine duct openings. The lesions appear only after a 2- to 4-minute exposure to water. ASA is more common on palmar surface, although the dorsal surfaces of the hands and plantar region could also be involved [43].

Fernández-Crehuet et al. investigated four patients with ASA and, observed the presence of well-defined yellowish globules not affecting dermatoglyphics in all of their patients. They suggested that these structures could be due to widening of the excretory ducts of eccrine sweat glands [44].

Sezer et al. found larger sweat duct pores compared with normal palmar region, reflecting the dilated and tortuous acrosyringium [45].

Lacarrubba et al. showed a hypertrophic stratum corneum with deepening of normal dermatoglyphics and a marked dilatation of eccrine ostia, both configuring a gryere-like aspect in a 19-year-old woman with cystic fibrosis [46].

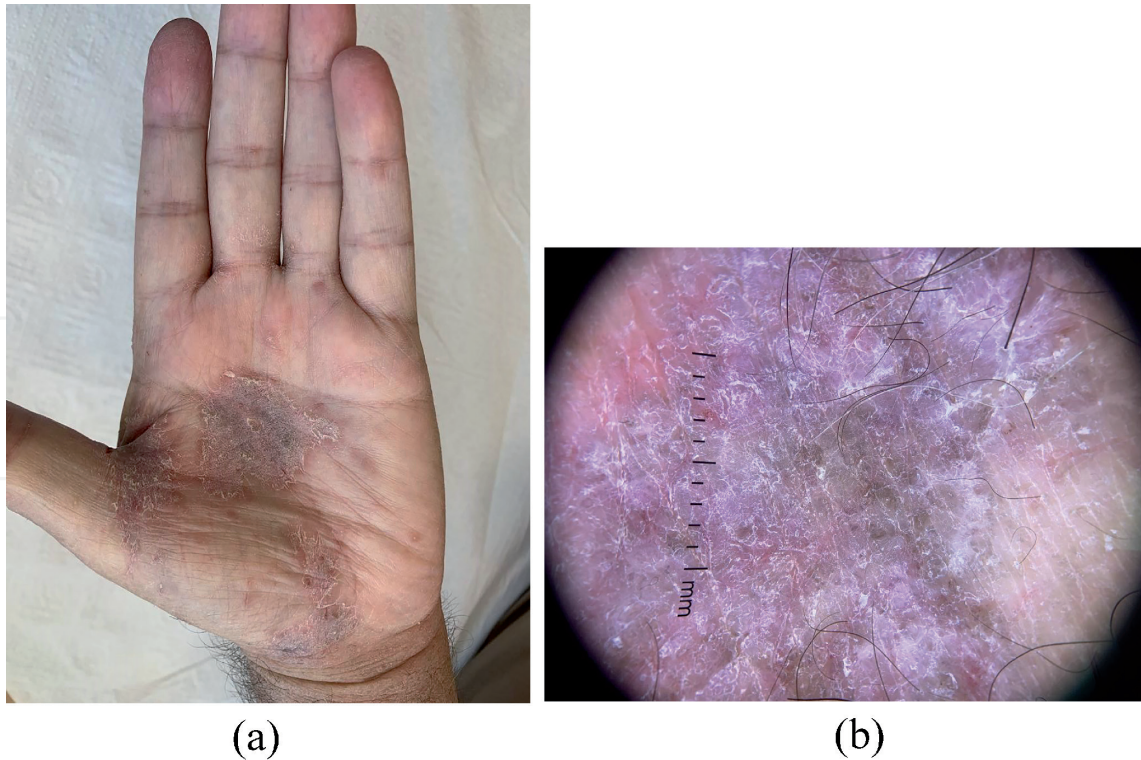
## **2.4 Lichen planus**

Palmoplantar lichen planus (LP) is an uncommon localized variant of lichen planus [47].

Errichetti et al. reported that palmar LP is characterized by roundish yellowish areas often having peripheral projections that may create a star-like appearance; a purplish background is sometimes visible [5].

Wickham striae are typically white, they could also appear yellow on palmoplantar areas [5, 10, 15].

**Figure 7a** shows clinical view of palmoplantar LP. **Figure 7b** shows brownish areas and Wickham stria on a purplish background.



**Figure 7.**  
(a) Palmar lichen planus. (b) Brownish areas and Wickham stria on a purplish background.

## 2.5 Lichen nitidus

Lichen nitidus is a relatively uncommon chronic inflammatory disease which is presented with 1–2 mm, shiny, flat-topped, pale to skin-colored, clustered papules. The lesions mostly seen over the penis, lower abdomen, medial surface of the thighs, dorsal hands, forearms and buttocks [48]. It can be seen on palmoplantar region, nail and mucosa uncommonly [49].

Qian et al. reported well-defined depressions with fewer, thinner scales, surrounded with obvious ring-shaped, silvery-white scales on the palmoplantar sites. They suggested that the variation of pit patterns on palmoplantar area under dermatoscopy depends on epidermal hyperkeratosis, persistent mechanical stress, and thickness of stratum corneum. On the other hand, dermatoscopic findings of lichen nitidus on other localizations showed round, elevated, shiny and smooth surface without scales in their study [50].

## 3. Infectious diseases

Dermatoscopy is a helpful tool in the diagnosis of various infectious diseases. In this section, dermatoscopic findings reported on infectious diseases involving the palmoplantar region will be discussed.

### 3.1 Tinea manuum

Tinea manuum is a superficial mycosis of the palm, dorsum, or interdigital folds of one or both hands. It is usually caused by dermatophytes [41].

Errichetti et al. reported that whitish scaling mainly located in the furrows is specific for tinea manuum. They explained this finding with the localization of dermatophytes to proliferate in moist environment, such as palmar furrows [13].

Jakhar et al. also reported that dotted vessels only in the skin furrows is another dermatoscopic finding in tinea manuum. They explained this vascular finding with the reactionary vasodilatation of vessels in response to inflammatory process induced by dermatophytes [5, 51, 52].

### **3.2 Tinea nigra**

Tinea nigra (TN) is a rare superficial cutaneous mycosis caused by *Hortaea werneckii*. Dermatoscopy is a fast and effective tool for the diagnostic suspicion of TN. Multiple light brown thin lines that cross forming a weave is characteristic dermatoscopic finding in TN [53]. Navarrete et al. also defined hyperchromic patch with a regular distribution of the pigmentation and the spicules on the edges [54]. Guarenti et al. examined an 11-year-old girl with TN and demonstrated a homogeneous nonmelanocytic pigmented pattern with spicules [55]. The pigmentation in TN does not follow the parallel ridges pattern described for melanomas [39]. However, there are some reported cases contrary to this information [56–].

### **3.3 Palmar syphilid**

Syphilis is a chronic, systemic infection that mimics many dermatological diseases. Secondary syphilis is classically characterized by a copper-colored maculopapular rash with sharply delineated margins typically present on the palmar and plantar surfaces [13].

Errichetti et al. showed an orangish background and a thin, whitish, annular, scaling edge progressing in an outward direction and often surrounded by an erythematous halo in palmar syphilid [27].

It has been suggested that the presence of an orangish background corresponds to hemosiderin deposits in the dermis as a consequence of extravasation of erythrocytes, typical for secondary syphilitic lesions [5]. Palmar syphilis lesions may be confused with palmar papular psoriasis. Palmar papular psoriasis shows no orangish areas/background and, this has been emphasized as an important finding in differential diagnosis. The diffuse/regular distributed dotted vessels may be seen in both psoriasis and palmar syphilid, consequently it may not be useful in the differential diagnosis [58].

Tognetti et al. showed a circular, thin, scaling edge progressing in an outward direction and surrounded by an erythematous halo (the so-called Bielt's collerette) as a diagnostic indicator, even in clinically non-scaling lesions in palmar syphilid [58]. Errichetti et al. reported thicker scaling ring and lacking of erythematous halo [3, 6, 25].

### **3.4 Pitted keratolysis**

Pitted keratolysis is a bacterial infection of plantar region which caused by Gram-positive bacteria, especially *Corynebacterium spp* [59]. Hyperhidrosis, long standing occlusion and increased skin pH are predisposing factors. In an appropriate environment, bacteria proliferate and secrete keratin-degrading enzymes which are responsible for pitted appearance. Patients usually present with irritated, malodored, hyperhidrotic soles with small, multiple pits on them. Lockwood et al. identified dermatoscopy of pitted keratolysis in a case report as irregularly distributed pits with heterogeneously architecture pit walls [60].

### 3.5 Verruca plantaris

Verruca plantaris is a common human papilloma virus (HPV) infection which presents with solitary or multiple slightly elevated hyperkeratotic papules/plaques on soles. Due to plantar region's anatomical features, warts located in this area tend to ingrown. So far, HPV-1, -2, -3, -4, -27, -29, -57, -60, -63, -65, -66, and -69 are isolated from verruca plantaris [61]. Although we can see tiny black dots which represent thrombosed, dilated capillaries on these hyperkeratotic papules with naked eye on occasion, in some cases it can not be seen and dermatoscopic examination is beneficial in these patients without paring the lesion. Lee et al. reported dermatoscopy of verruca plantaris as black and red dots on hyperkeratotic papilliform surface under polarized light [62].

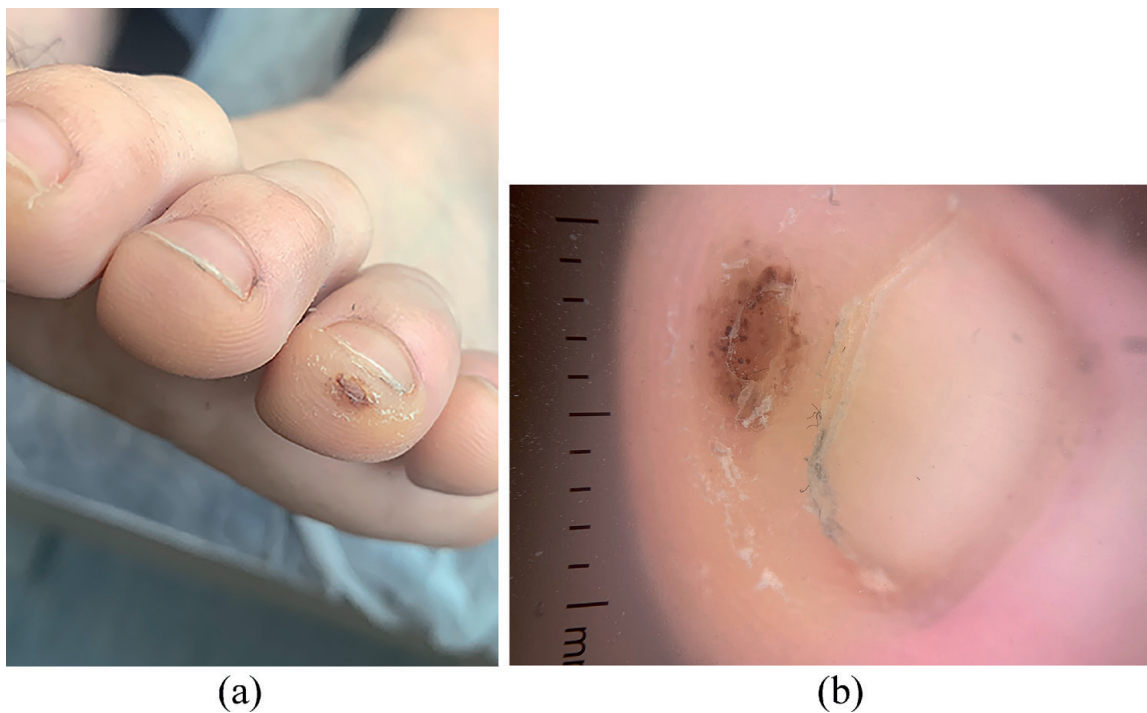
## 4. Traumatic changes

### 4.1 Callus

Callus is localized hyperkeratosis of epidermis as a reaction of chronic irregular pressure or friction. It is mostly recognizable with naked eye, however in some cases clinicians have to make differential diagnosis between verruca and callus. Bae et al. showed homogenous opacity is diagnostic for callus and easily distinguishable from verruca under polarized light dermatoscopy [63].

### 4.2 Subcorneal hemorrhage

Subcorneal hemorrhage is a pigmented macule mainly located on palms and soles after trauma. By the reason of its similarity to acral melanocytic lesions and sometimes patient could not remember the history of trauma, it is important to



**Figure 8.**  
(a) Subcorneal hemorrhage. (b) Red-black satellite globules on a red-brown background.

distinguish. Complete or partial removal of pigmentation under scratch test is indicative for subcorneal hemorrhage. Zalaudek et al. reported sharp-demarcated red-black homogeneous area with satellite globules in subcorneal hemorrhage [64]. **Figure 8a** shows subcorneal hemorrhage on toe and **Figure 8b** shows red-black satellite globules on a red-brown background.

## **5. Other diseases**

### **5.1 Circumscribed palmar hypokeratosis**

Circumscribed palmar hypokeratosis (CPH) is a rare epidermal malformation described by Perez in 2002 [65]. It is characterized by a localized reduction of the stratum corneum and typically presents as an isolated, well-circumscribed, atrophic, annular erythematous plaque with a slightly raised scaly border on the palmar surface, most commonly on the thenar or hypothenar eminence [66]. The exact mechanism of CPH is unknown, but it has been suggested that it may be due to local micro-trauma because of late onset and localization of lesions [66].

There are few studies in the literature describing the dermatoscopic findings of CPH. Ishiko et al. described that characteristic features of palmar hypokeratosis are stair-like desquamation and a homogeneous erythema with regularly distributed whitish spot (without jelly; erythema with stair-like desquamation with jelly; structureless erythema with regularly distributed whitish spots) [67]. Nishimura et al. confirmed stair-like desquamation and well-demarcated erythema scattered with white spots. They showed small reddish dots in the erythema that show the congestive capillaries in the papillary dermis [68].

Vilas Boas da Silva et al. showed dotted vessels over an erythematous background, along with and a vertical interruption and a moth-eaten profile in three women [66]. They also described the whitish streaks as another dermatoscopical finding of CPH for the first time [66]. It has been suggested that the white spots represent acrosyringium and correspond to marked hypokeratosis. The whitish streaks indicates furrows that are deeper on the hypothenar eminence. The reasons of the erythematous background might be the chronic inflammatory infiltrate, congestive capillaries, and thinned horny layer [68].

Considering the dermatoscopical and clinical findings of CPH, the main differential diagnoses are Bowen's disease and Mibelli porokeratosis. The characteristic dermatoscopical findings of Bowen's disease are clustered glomerular vessels, dry scales, small brown globules and structureless gray to brown pigmentation [66, 69]. Red spots shown in CPH may be confused with glomerular vessels seen in Bowen's disease. Asymmetric and clustered distribution of vessels seen in Bowen's disease can be helpful differentiating it from CPH. Porokeratosis shows a double rim of scale, however the characteristic stair-like desquamation rim is present in CPH. The central part of porokeratosis is usually hypopigmented and reveals dotted vessels. CPH shows white dots and whitish streaks which are not seen in porokeratosis may help in differentiating of these two diseases [66].

### **Conflict of interest**

No conflict of interest.

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