Brief Report

Dermoscopic Features of Dermatitis Cruris Pustulosa et Atrophicans: A Retrospective Study from a Tertiary Care Center in South India

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Abstract

Background: Dermatitis cruris pustulosa et atrophicans (DCPA) is a chronic superficial folliculitis that can cause scarring alopecia if left untreated. Hardly any studies are there describing the dermoscopic features of DCPA. Dermoscopy can be a useful tool for diagnosing DCPA in addition to clinical and histopathological features and for differentiating other conditions like superficial folliculitis, folliculitis decalvans, and pseudofolliculitis. **Aims/Objectives:** The aim of this retrospective study was to describe the dermoscopic features of 30 patients with DCPA at a tertiary care center in South India. **Materials and Methods:** A retrospective study of clinical and biopsy-proven cases of DCPA at a tertiary care center in South India. **Results:** Thirty patients of DCPA of skin phototype IV or V were studied. Male preponderance of DCPA was noted in our study. Lower extremities 28 (93.3%) and upper extremities 2 (6.7%) were the common sites of involvement. The most common findings noted in dermoscopy were follicular-based pustules in 30 (100%) patients, follicular white structureless area in 16 (53.3%), perifollicular collarette of scales in 12 (40%), diffuse background dotted blood vessels in 12 (40%), and the absence of follicular orifices in 12 (40%). Other findings were yellow or hemorrhagic scales, perifollicular linear white lines, broken hair, and perifollicular dotted blood vessels. Pigmentary patterns observed were dark brown pigmentation, blue–grey globules, blue–grey dots, and accentuation of the pigmentary network. **Limitations:** The limitations of the study were the retrospective nature of the study, the small sample size, and the lack of a comparison group. **Conclusion:** The predominant dermoscopic features observed in our patients were follicular-based pustules, follicular white structureless areas, perifollicular collarette of scales, diffuse background dotted blood vessels, and the absence of follicular orifices. Vascular and pigmentary patterns were less commonly noted.

Keywords: *Dermatitis cruris pustulosa et atrophicans, infection, leg, Staphylococcus aureus and pustule*

Introduction

Dermatitis cruris pustulosa et atrophicans (DCPA) is a chronic superficial folliculitis that is therapy-resistant, relapsing, and remitting and is characterized by mildly itchy follicular-based pustules.[1,2] This condition frequently leads to alopecia, follicular atrophic scarring, and post-inflammatory pigmentary skin changes. It commonly affects the legs, but other sites, like the thigh, axilla, beard, mustache, and forearm, can also be involved.[3,4] Chronic cases result in the patient's hair becoming wiry and rough, the affected area becoming shiny, and the skin markings disappearing.[5,6] This study describes the dermoscopic findings of biopsy-proven cases of DCPA. Dermoscopy can be useful to differentiate DCPA from other conditions like superficial folliculitis, folliculitis decalvans, and pseudofolliculitis. As all these disorders present with pustules, it is difficult to differentiate these from DCPA.[7-10] To the best of our knowledge, there are hardly any studies on the dermoscopy of DCPA; hence, the study is reported to highlight the importance of dermoscopy in DCPA.

Materials and Methods

This retrospective study was conducted in a tertiary care center in South India from January 2022 to June 2023. The objective was to evaluate the dermoscopic features of clinical and biopsy-proven cases of DCPA. Thirty clinical and biopsy-proven cases of DCPA, who had dermoscopic examination, were included. The clinical

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criteria were remitting and relapsing, pruritic, symmetrical follicular-based pustules involving legs or any other sites associated with alopecia, atrophy, or scarring. The pathological criteria used were intraepidermal pustule, dermal neutrophilic infiltrates predominantly around the upper perifollicular region associated with or without atrophy, and dermal fibrosis.[2,5] The patients were of skin phototype IV or V. The dermoscope used was a DermLite DL4 with 10x magnification. All images were analyzed by two dermatologists who are dermoscopy experts. The various dermoscopic findings observed were expressed as frequencies and proportions. The statistical analysis in our study was performed with MedCalc Software version 19.0.5 (MedCalc Software bvba, Ostend, Belgium).

Results

Thirty patients (21 males and 9 females) were included in the study. The age distribution of the patients was between 28 and 50 years. Duration of the lesions varied from six months to two years. The location of the lesions was lower extremities 28 (93.3%) and upper extremities 2 (6.6%) [Figures 1–3]. Legs were the common site of involvement in 22 (73.3%) cases. Two patients (6.6%) had involvement of both legs and forearm. There was unilateral involvement in 10 (33.3%) patients. In our study, there was no involvement of other rare areas, like the trunk, scalp, beard, or axilla. Fourteen patients (46.6%) had a history of regular coconut oil application over the body. The number of patients having grade 1, grade 2, and grade 3 DCPA in our study were 8, 12, and 10, respectively. We had no patient with grade 4 involvement.

The dermoscopic features were assessed using International Dermoscopy Society (IDS) criteria for nonneoplastic dermatoses.[11] We describe the dermoscopic features of DCPA as general features, vascular patterns, and pigmentary patterns. The frequency of various general features include follicular-based pustules in 30 (100%) patients, follicular white structureless areas in 16 (53.3%), perifollicular collarette of scales in 12 (40%), the absence of follicular orifices in 12 (40%), yellow crust in 10 (33.3%), perifollicular linear white lines in 9 (30%), broken hair in 8 (26.6%), and hemorrhagic crust in 5 (16.6%) of patients [Figure 1b and c]. The frequency of the vascular patterns included diffuse background dotted blood vessels in 12 (40%) and perifollicular dotted blood vessels in 10 (33.3%) [Figure 2b and c]. Other pigmentary patterns observed were dark brown pigmentation in 3 (10%), blue–grey globules in 3 (10%), blue–grey dots in 2 (6.6%), and accentuation of the pigmentary network in 2 (6.6%) [Figure 3b and c]. The dermoscopic findings are elaborated in Table 1.

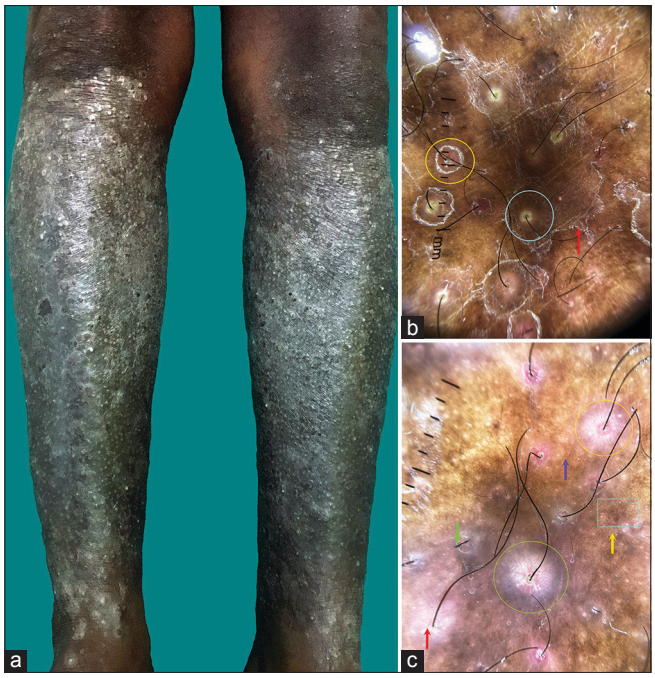

Figure 1: (a). Symmetric follicular-based pustules involving the bilateral anterior aspect of the shin with scaling and scarring. (b). Dermoscopy shows follicular-based pustule (blue circle), perifollicular collarette of scale (yellow circle), and scale (red arrow). Polarized contact dermoscopy (Original magnification, 10x). (c). Dermoscopy shows follicular white structureless areas (yellow circle), the absence of follicular orifice (yellow arrow), perifollicular white lines (green circle), dotted vessels (red arrow), broken hair (green arrow), dots (blue arrow) and globules (blue square). Polarized contact dermoscopy with mineral oil interface (Original magnification, 10×)

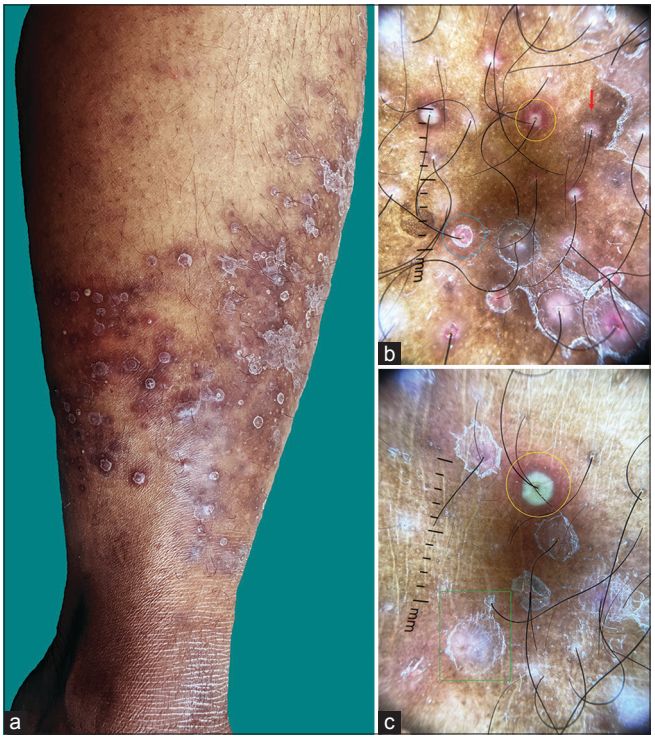

Figure 2: (a). Multiple follicular-based pustules with perifollicular scaling were noted over the medial aspect of the left leg. (b). Dermoscopy shows a perifollicular collarette of scales (blue circle), perifollicular dotted blood vessels (yellow circle), and an increased pigment network (red arrow). Polarized contact dermoscopy (Original magnification, 10×). (c). Dermoscopy shows follicular-based pustule (yellow circle) and perifollicular collarette of scale (green square). Polarized contact dermoscopy (Original magnification, 10×)

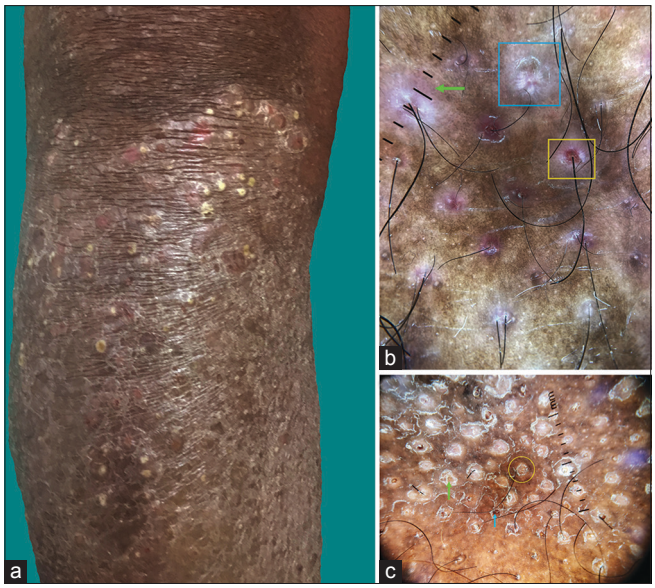

Figure 3: (a). Multiple follicular-based pustules with surrounding scaling, atrophy, and scarring are noted over the right knee region. (b). Dermoscopy shows the perifollicular dotted blood vessels (yellow square), background dotted blood vessels (green arrow), and follicular white structureless areas (blue square). Polarized dermoscopy contact with mineral oil interface (Original magnification, 10×). (c). Dermoscopy shows perifollicular collarette of scale (yellow circle), hemorrhagic scale (blue arrow), and yellow scale (green arrow). Nonpolarized contact dermoscopy (Original magnification, 10×)

Table 1: Dermoscopic findings in thirty patients of dermatitis cruris pustulosa et atrophicans (*n*=30)

Dermoscopic features	Total number of patients with the findings	Percentage
General features		
Follicular-based pustules	30	100
Follicular white structureless area	16	53.3
Perifollicular collarette of scales	12	40
Absence of follicular orifices	12	40
Yellow scale	10	33.3
Perifollicular linear white lines	9	30
Broken hair	8	26.6
Hemorrhagic scale	5	16.6
Vascular pattern		
Diffuse background dotted vessels	12	40
Perifollicular dotted blood vessels	10	33.3
Pigmentary pattern		
Brown pigmentation	3	10
Blue–grey globules	3	10
Blue–grey dots	2	6.6
Accentuation of the pigmentary network	2	6.6

Discussion

Dermatitis cruris pustulosa et atrophicans is a relapsing and remitting condition, whose etiology is not completely understood. *Staphylococcus aureus* is thought to be one of the etiological agents. Other risk factors are occlusion, trauma, and climate. It most commonly involves the anterior aspect of the legs', but other sites can rarely be involved.[1,2] We observed leg involvement in most of our patients (93.3%). Other sites that were involved include the thigh and forearm. There was no involvement of other areas like the trunk, scalp, beard, or axilla. Male preponderance of DCPA was noted in our study. The maximum duration of the disease was two years in our study, but it can have a more prolonged course than that. Although it has classical clinical findings, the involvement of rare sites or rare clinical presentations can pose a difficulty in diagnosis. In such cases, tools like dermoscopy can aid in diagnosis in addition to clinical examination and histology. Hardly any studies are in the literature describing the dermoscopic features of DCPA. Herein, we describe the dermoscopic features in 30 patients with DCPA.

According to our observations, the most prevalent findings of dermoscopy noted in DCPA patients were follicular-based pustules, follicular white structureless areas, the absence of follicular orifices, diffuse background dotted blood vessels, and perifollicular collarette of scaling, which were subsequently followed by yellow scale, perifollicular dotted blood vessels, and perifollicular linear white lines. Other patterns observed were broken hair and hemorrhagic scale. Rarely, pigmentary alterations were also observed, like blue–grey dots, blue–grey globules, dark brown pigmentation, and accentuation of pigment network.

We observed overlapping patterns in early lesions (Grade 1 or 2) of DCPA, like follicular-based pustules, perifollicular collarette of scales, perifollicular dotted blood vessels, and follicular white structureless areas. Patients with a longer duration of disease with grade 3 involvement showed yellow scales, the absence of follicular orifices, and broken hair. The findings we observed might help in the future to differentiate DCPA from other follicular disorders like superficial folliculitis, folliculitis decalvans, and pseudofolliculitis. In dermoscopy of folliculitis decalvans, there can be polytrichia, ivory white areas, the absence of follicular orifices, and absence of any vascular pattern.[7-9] However, recent studies state that folliculitis decalvans and DCPA are diseases on the same spectrum. Only future studies can confirm if folliculitis decalvans and DCPA are related or not.[12] Polytrichia is the presence of multiple hairs emerging from a single hair follicle orifice. Other findings observed in folliculitis decalvans are pustules and crust. We observed vascular pattern and did not find polytrichia in the dermoscopy of DCPA, differentiating it from folliculitis decalvans. The various vascular patterns noted were diffuse dotted blood vessels in the background and perifollicular dotted blood vessels.[7,8] However, follicular white structureless areas and the absence of follicular orifices can be seen in the dermoscopy of both conditions. The dermoscopy of pseudofolliculitis has shown curved hair attached to the skin at its both ends, linear

vessels, bluish pigmentation, scaling, and white areas.[10] We did not appreciate any curved hairs in our study. Thus, dermoscopy can help diagnose DCPA in addition to clinical presentation and histology. In a scenario where a biopsy cannot be taken, dermoscopy could be helpful for a supportive diagnosis. Although its treatment is avoidance of the risk factors and systemic or topical antibiotics, it is generally resistant to therapy and has a chronic course.

Limtations

Smaller sample size, retrospective type of study, and a lack of comparative groups are the limitations of the study.

Conclusion

The predominant dermoscopic findings of DCPA were follicular-based pustules, follicular white structureless areas, perifollicular collarette of scales, the absence of follicular orifices, and diffuse dotted blood vessels in the background. Other findings observed were perifollicular dotted blood vessels, perifollicular linear white lines, broken hair, and yellow or hemorrhagic scale. Overlapping features were seen in early lesions (Grade 1 or 2), like follicular-based pustules, perifollicular collarette of scales, perifollicular dotted blood vessels, and follicular white structureless areas. The pigmentary pattern was rarely observed, like blue–grey dots, globules, brown pigmentation, and accentuation of pigment network. However, future studies are needed with a larger sample size comparing the dermoscopy of DCPA and its mimics like folliculitis decalvans and pseudofolliculitis.

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Nil.

Conflicts of interest

There are no conflicts of interest.

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