



Original Article

Dermoscopic Features of Perilesional Skin of Unstable Vitiligo: A Cross-Sectional Study

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ABSTRACT

Objectives: Dermoscopy is a very useful tool in determining stability in vitiligo. Dermoscopic features of unstable vitiligo are trichrome appearance, comet tail appearance, star burst appearance, amoeboid pattern, nebular pattern, tapioca sago pattern and perifollicular hypopigmentation. Most studies are done on determining features of vitiligo lesions; however, there is lack of studies on dermoscopy in normal appearing perilesional skin. This would give an insight into the extent of the disease process, beyond the borders of skin lesions. We conducted a study on 100 unstable lesions of vitiligo and studied dermoscopic features in its perilesional skin. The objective of this study was to observe dermoscopic features of apparently normal perilesional skin in patients of unstable vitiligo.

Materials and Methods: A cross-sectional study was conducted in a tertiary care centre in New Delhi. We evaluated perilesional skin of 100 unstable vitiligo lesions over a span of 1 year. The perilesional skin has been defined as area within 5 cm of the lesion. Dermoscopy was performed using DERMLITE 4 Dermoscope at 10X magnification with inbuilt white light and polarised light. Polarised light was used to study changes in the pigmentary network and other patterns. We looked for features such as pigment network, perifollicular pigmentation, presence of leukotrichia, mikrokoebner phenomenon and satellite lesions in the perilesional skin.

Results: The study included a total of 100 unstable lesions. Majority of patients belonged to the age group of 18–30 years. Females outnumbered males (1.8:1). All cases had progressive disease and mean duration of disease was 12.07 ± 10.85 years. Dermoscopic features of vitiligo were observed in 56% of patients even in normal appearing perilesional skin. The most common dermoscopic finding observed was reduced pigment network which was seen in 33% of cases. Perifollicular hypopigmentation and depigmentation were observed in 23 and two sites, respectively, while leukotrichia was seen at ten sites. Eight sites showed mikrokoebners phenomenon.

Conclusion: The perilesional apparently normal skin also shows signs of disease activity in cases of unstable vitiligo. Hence, perilesional skin should also be examined carefully with the dermoscope and topical treatment and targeted phototherapy should aim at covering the normal looking perilesional skin as well, at least within 5 cm of the borders of the skin lesions. Importantly, the perilesional skin should also be examined before surgery.

Keywords: Vitiligo, Unstable, Dermoscopy, Perilesional skin

INTRODUCTION

Dermoscopy in vitiligo has been a topic of interest for many dermatologists as it can be a useful tool in determining stability. Features of unstable vitiligo include trichrome appearance, comet tail appearance, starburst appearance, amoeboid pattern, nebular pattern, tapioca sago pattern and perifollicular hypopigmentation.^[1] Nirmal *et al.* have proposed criteria in determining stability in vitiligo using dermoscopic parameters known as 'BPLeFoSK criteria'. It takes into account border, pigment network,

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perilesional pigmentation and perifollicular pigmentation, satellite lesions and micro-Koebners phenomenon.^[2]

Most studies are done on determining features of vitiligo lesions; however, there is lack of studies on dermoscopy in normal appearing perilesional skin. This would give an insight into the extent of the disease process, beyond the borders of skin lesions. It would also be useful in determining treatment area with targeted phototherapy with excimer lamp or laser. We conducted a study on 100 unstable lesions of vitiligo and studied dermoscopic features in its perilesional skin.

Objectives

The objective of this study was to observe dermoscopic features of perilesional skin in patients of unstable vitiligo in determining extent of disease activity.

MATERIALS AND METHODS

A cross-sectional study was conducted in a tertiary care centre in North India. We evaluated perilesional skin of 100 unstable vitiligo lesions over a span of 1 year. Ethical clearance

was obtained from the Institutional Ethics Committee. The perilesional skin has been defined as area within 5 cm of the lesion.^[3] Dermoscopy was performed using DermLite DL4-4th Gen Dermoscope at 10X magnification with inbuilt white light and polarised light. Polarised light was used to study changes in the pigmentary network and other patterns.

Appearance of a new lesions, increase in the size of the lesions, or presence of Koebners phenomena was defined as unstable disease. We looked for features such as pigment network, perifollicular pigmentation, presence of leukotrichia, microkoebners, features of unstable vitiligo and satellite lesions in the perilesional skin.

RESULTS

The study included a total of 100 unstable lesions. Majority of patients belonged to the age group of 18–30 years followed by 41–50 years and 31–40 years. Females outnumbered males (1.8:1). The most common site was abdomen and back (seen in 55 cases), followed by legs (seen in 30 cases) and hands (seen in 15 cases). All cases had progressive disease and

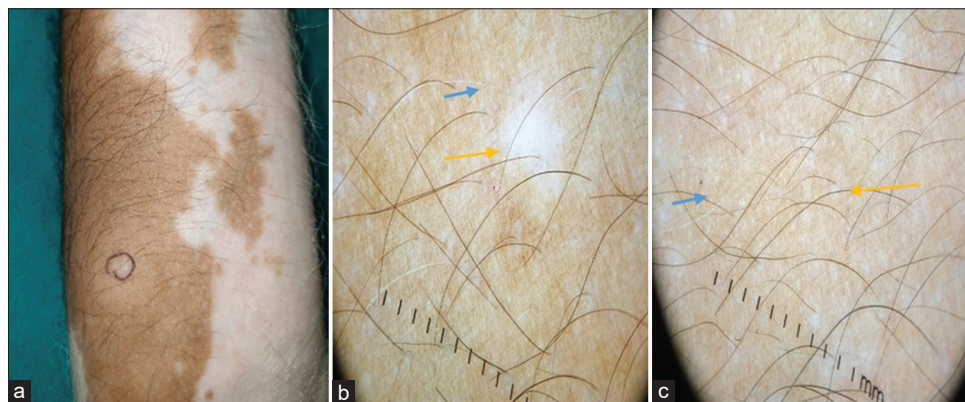


Figure 1: (a) Clinical photograph showing depigmented macules on the left arm. (b) Dermoscopic picture of lesion showing structureless area with absent pigment network and amoeboid border (as shown by yellow arrow) and leukotrichia (as shown by blue arrow). (c) Dermoscopic picture of perilesional skin showing leukotrichia (as shown by blue arrow) and perifollicular depigmentation (as shown by yellow arrow).

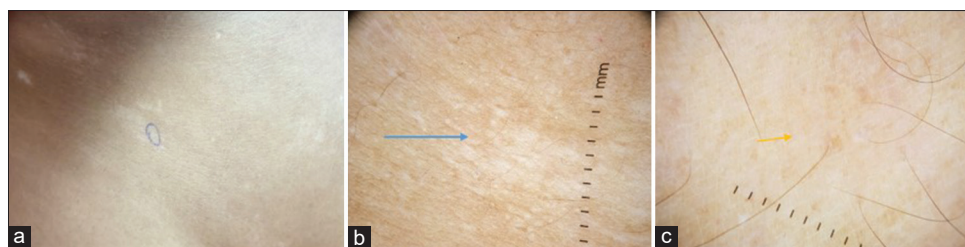


Figure 2: (a) Clinical photograph showing depigmented macules on abdomen. (b) Dermoscopic picture of lesion showing structureless area with absent pigment network and irregular border (as shown by blue arrow). (c) Dermoscopic picture of perilesional skin showing reduced pigmented network and perifollicular depigmentation (as shown by yellow arrow).

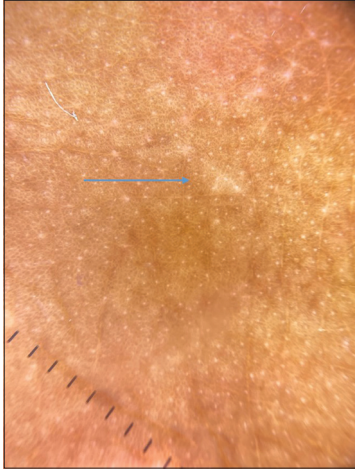


Figure 3: Microkoebners phenomenon seen in perilesional skin by Dermlite DL4 (as seen by blue arrow).

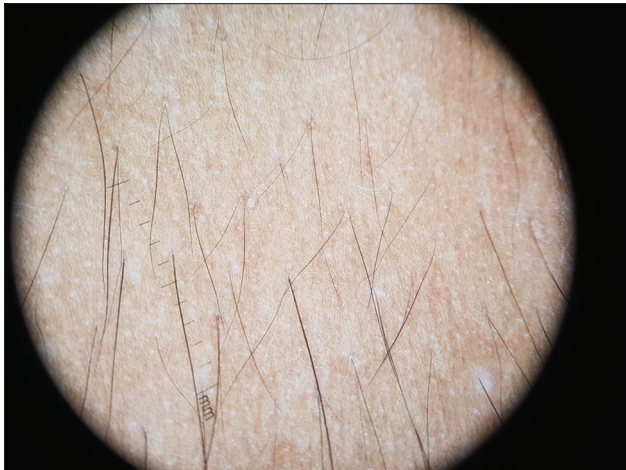


Figure 4: Dermoscopy of perilesional vitiligo skin showing subtle perifollicular hypo and depigmentation (blue arrows).

Table 1: Dermoscopic findings in perilesional skin of vitiligo.

Dermoscopic pattern	Dermoscopic finding	Number of patients (n=100)
Pigment network	Reduced	33
	Normal	67
Perifollicular pigmentation	Hypopigmentation	23
	Normopigmentation	75
	Hyperpigmentation	0
	Depigmentation	2
Microkoebners	Present	8
	Absent	92
Satellite lesion	Present	3
	Absent	97
Leukotrichia	Present	10
	Absent	90

disease duration varied from 1 year to more than 20 years. Mean duration of disease was 12.07 ± 10.85 years.

Dermoscopic features of vitiligo were observed in 56% of patients even in normal appearing perilesional skin. The most common dermoscopic finding observed was reduced pigment network which was seen in 33 out of 100 perilesional sites [Figure 1]. Perifollicular hypopigmentation and depigmentation were observed in 23 and 2 sites, respectively, while leukotrichia was seen at ten sites [Figure 2]. Microkoebners phenomenon was observed in 8 sites [Figure 3]. Perifollicular depigmentation was very subtle in some areas [Figure 4]. Results are shown in [Table 1].

DISCUSSION

Dermoscopy of vitiligo lesions is a well-studied topic; however, studies on dermoscopic features of perilesional skin in vitiligo are lacking. Dermoscope is a non-invasive adjunctive tool which can aid in confirmation of vitiligo and help in differentiating it from other causes of hypomelanosis.^[4] More importantly, dermoscopy is rapidly gaining ground as an important adjunct tool to evaluate disease activity and monitor progress. Dermoscopic features such as marginal hyperpigmentation, reticulate pigmentation and perifollicular pigmentation suggest stable disease, while features such as trichrome border, star burst appearance, microkoebners phenomenon, perifollicular hypopigmentation and comet tail appearance and tapioca sago appearance are associated with unstable disease.^[1,5-7] This study conducted on 100 cases of unstable vitiligo showed that dermoscopic features of vitiligo were observed in as high as 56% of patients in normal looking perilesional skin. Features of unstable vitiligo like microkoebners phenomenon, leukotrichia, perifollicular depigmentation and reduced pigment network were observed in normal appearing perilesional skin. Vitiligo is considered as an autoimmune disease. The disease activity is not only limited to the lesion but the perilesional skin also shows signs of activity. Dermoscope is a very helpful adjunctive tool which can aid in detecting signs of instability which cannot be seen by naked eye. As stability of vitiligo is an important criterion which determines treatment both medical and surgical, it is essential to identify activity of the disease. Studies have shown that perilesional skin of vitiligo patients which have shown basal cell vacuolation and epidermal atrophy is suggestive of disease activity.^[8] There are reports of perifollicular depigmentation and leukotrichia in normal looking skin indicating impending vitiligo.^[9]

Hence, it is important to examine the perilesional skin in patients with unstable vitiligo and determine treatment accordingly. Lesions which appear apparently stable but do not respond to therapy, or show poor response to surgery or recurrence, require thorough examination of perilesional

skin to look for signs of disease activity and instability. Topical treatment and targeted phototherapy should be extended to the perilesional skin as well. Before taking up patient for vitiligo surgery, the perilesional skin should be thoroughly examined to see any signs of instability.

Limitation

Follow-up of the patients was not studied.

CONCLUSION

The perilesional apparently normal skin also shows signs of disease activity in cases of unstable vitiligo. Hence, perilesional skin should also be examined carefully with the dermoscope and treatment, topical and targeted phototherapy should aim at covering the normal looking perilesional skin as well, at least within 5 cm of the borders of the skin lesions. Importantly, the perilesional skin should also be examined before surgery.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent.

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Nil.

Conflicts of interest

There are no conflicts of interest.

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