Dermoscopy - A tool to Assess Stability in Vitiligo

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ABSTRACT

Introduction: Vitiligo is defined as an autoimmune disorder of pigmentation characterised by loss of functional melanocytes and melanin in epidermis. Affects 0.3-1.1% of world population, irrespective of gender and race. Study aimed at the morphological dermoscopic patterns and correlate with stability in vitiligo patients

Material and Methods: White light dermoscopy is used in imaging patterns in 50 clinically diagnosed cases of Vitiligo which includes clinically stable vitiligo, unstable vitiligo, vitiligo cases on treatment during April 2016- June 2016 in our institution.

Results: On examination with dermoscope, patterns like Marginal hyperpigmentation (40%), Reticulate pigmentation (38%), Perifollicular pigmentation (40%), Trichrome (32%), Starburst (16%), Comet tail (8%) were observed. In addition Erythema, Telangiectasia, Atrophy are also seen in patients on treatment. Marginal hyperpigmentation, Perifollicular pigmentation, Reticulate pigmentation are seen frequently in stable vitiligo patients. Trichrome, Starburst, Comet tail, Polkadot patterns are commonly seen in unstable vitiligo.

Conclusion: Marginal hyperpigmentation, Reticulate pigmentation, Perifollicular pigmentation patterns suggest stability, Starburst, Comet-tail, Polkadot suggest unstability of disease. Patients with good response to treatment showed Marginal hyperpigmentation, Perifollicular and Reticulate pigmentation and poor response to treatment showed Trichrome, Starburst, Comet tail, Polkadot patterns on dermoscopy. Hence dermoscopy can be used to monitor the activity of disease, response to treatment and hence prognosis. Trichrome, Starburst, Comet tail, Polkadot patterns suggest change in treatment modality.

Keywords: Comet Tail, Marginal Hyperpigmentation, Perifollicular Pigmentation, Polkadot, Reticulate Pigmentation, Starburst, Trichrome.

INTRODUCTION

Vitiligo is defined as an autoimmune disorder of pigmentation characterised by loss of functional melanocytes and melanin in epidermis.[1] Affects 0.3-1.1% of world population, irrespective of gender and race. Normal skin has a typical reticulate pigmentary pattern that corresponds to pigmentation along rete ridges with pale areas corresponding to papillary dermis.[2] This reticulate pigmentary pattern is altered in lesions of vitiligo[3], thus dermoscopic examination may be useful in early diagnosis of vitiligo. Dermoscopy of normal skin reveals normal reticular pattern of pigment network which consists of homogeneous pigmented lines corresponding to rete network and pale areas in between these lines. This normal reticulate pigmentary network is reversed in evolving lesions of vitiligo.[4]

Various patterns of vitiligo observed in dermoscopy[7] are:

- Marginal hyperpigmentation
- Perifollicular pigmentation
- Reticulate pigmentation
- Trichrome
- Starburst appearance
- Comet tail appearance
- Polka dot appearance

Overlap of dermoscopic patterns in various lesions of same patient were seen. Current research aimed to study the morphological dermoscopic patterns and correlate with stability in vitiligo patients.

MATERIAL AND METHODS

50 clinically diagnosed patients of vitiligo which included clinically stable, unstable vitiligo and vitiligo cases on treatment were studied during April 2016-June 2016 in our institution.

The following criteria was used to establish stability of a vitiligo macule:

1. Lack of progression of old lesions within past 2 years.
2. No new lesions in the same period.
3. Absence of recent koebner phenomenon.
4. Repigmentation of depigmented areas by medical treatment.

The study was a cross-sectional study. Detailed and Informed consent was taken from the patients. A prestructured proforma was used to collect the baseline data. Detailed history was taken and clinical and dermatological examination was done Confidentiality of the patient was maintained. Dermoscope [10x] is used for imaging patterns and images are saved for further evaluation. The study has received ethical clearance.

Inclusion criteria

Diagnosed patients of clinically stable and unstable vitiligo including patients on treatment.

Exclusion criteria

Other causes of hypopigmentation and depigmentation were excluded.

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How to cite this article: G. Purnima, N.A. Tejaswitha Gudivada, T.V. Narasimharao. Dermoscopy - a tool to assess stability in vitiligo. International Journal of Contemporary Medical Research 2017;4 (10):2066-2068.

Dermoscopic pattern	Stable vitiligo (n =16)	Unstable vitiligo (n = 34)	Patients on treatment (n=36)
Marginal hyperpigmentation	16(100%)	4(12%)	16(44.4%)
Perifollicular pigmentation	14(87.5%)	6(18%)	16(44.4%)
Reticulate pigmentation	13(81.25%)	6(18%)	16(44.4%)
Trichrome	2(12.5%)	14(41%)	7(19.4%)
Starburst	0	3(9%)	3(8.3%)
Comet tail	0	3(9%)	3(8.3%)
Polka dot	0	3(9%)	3(8.3%)

Table-1: Dermoscopic pattern

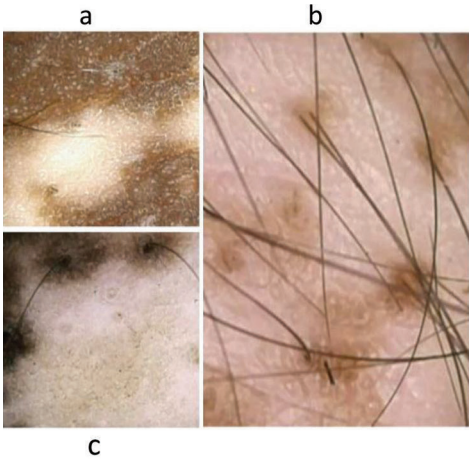

Figure-1: Dermoscopic patterns in stable vitiligo patients. (a) Marginal hyperpigmentation; (b) Perifollicular pigmentation; (c) Reticulate pigmentation

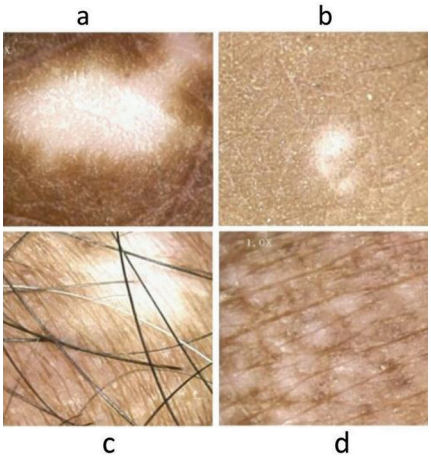

Figure-2: Dermoscopic patterns in unstable vitiligo. (a) Trichrome; (b) Comet tail; (c) Starburst; (d) Polka dot

STATISTICAL ANALYSIS

Microsoft office 2007 was used for the analysis. Descriptive statistics like mean and percentages were used for the analysis.

RESULTS

Of the 50 clinically diagnosed patients of vitiligo, majority of them belong to age group of 31-45 years with slight female preponderance.

Of the 50 clinically diagnosed patients of vitiligo, 16 patients were clinically stable, 34 patients were clinically unstable. The dermascopic patterns observed in clinically stable vitiligo (n=16) were Marginal hyperpigmentation in 16 patients (100%) (Figure 1a), Reticular pigmentation in 13 patients (81.25%) (Figure 1c), Perifollicular pigmentation in 14 patients (87.5%) (Figure 1b), Trichrome in 2 patients (12.5%) (Figure 2a). (Table 1)

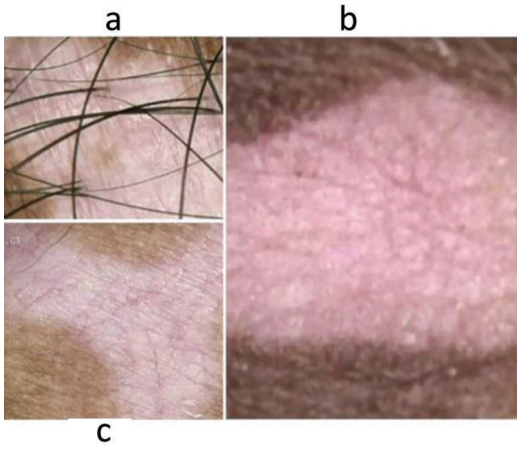

Figure-3: Additional signs seen in patients on treatment. (a) Atrophy; (b) Erythema; (c) Telengiectasia

Dermascopic patterns observed in clinically unstable patients (n=34) were Trichrome in 14 patients (41%) (Figure 2a), Starburst (Figure 2c), Comet tail (Figure 2b), Polkadot (Figure 2d) in 3 patients each (9%), Marginal hyperpigmentation in 4 patients (12%), Reticulate pigmentation and Perifollicular pigmentation in 6 patients each (18%) (Table 1). Of the 50 diagnosed patients of vitiligo, 36 patients are on treatment (Table 1).

Additional signs in patients on treatment (n=36) are Erythema (Figure 3b) in 24 patients (66.6%), Telengiectasia (Figure 3c) in 8 patients (22.2%), Atrophy (Figure 3a) in 1 patient (2.7%).

DISCUSSION

Stability in vitiligo is an important concept guiding direction of patient management. Unstable vitiligo shows worsening with some therapeutic options like phototherapy or photochemotherapy.[7] Although diagnosis of vitiligo is primarily clinical, certain non-invasive tests like dermoscopy are helpful especially in doubtful cases (in evolving disease), and for objective evaluation of treatment response.[1] Dermoscopy (digital epiluminescence microscopy or "dermatoscopy") magnifies the clinical image manifold and allows appreciation of subtle features invisible to the naked eye. This noninvasive technique may be performed with a hand-held instrument or by video dermoscopy. Dermoscopy is most commonly used for the examination of melanomas,

pigmented lesions, and hair-loss.[2] Its use in diagnosis and differentiation of hypopigmented lesions is relatively novel. Chuh and Zawar described its use as an early diagnostic tool for localized vitiligo, in which they reported a pattern of depigmentation with residual reservoirs of perifollicular pigment being characteristic.[5] Various dermoscopic findings like Marginal hyperpigmentation, Perifollicular pigmentation, Reticulate pigmentation are associated with stability and repigmentation of vitiligo.[6]

In our study we observed

- Marginal hyperpigmentation (40%),
- Reticulate pigmentation (38%),
- Perifollicular pigmentation (40%),
- Trichrome (32%),
- Starburst (6%),
- Comet tail (6%),

Polka dot (6%) in 50 clinically diagnosed cases of vitiligo.

Marginal hyperpigmentation is most common pattern seen on dermoscopy in stable vitiligo where as trichrome pattern is most common in unstable vitiligo. Perifollicular pigmentation, marginal hyperpigmentation, reticular pigmentation was seen in most of the patients with stable vitiligo and on treatment. According to our study, Marginal hyperpigmentation, Perifollicular pigmentation, reticulate pigmentation suggests stability. Patterns like Starburst, Comet tail, Polka dot suggest unstability.

CONCLUSION

To conclude Marginal hyperpigmentation, Perifollicular pigmentation, Reticulate hyperpigmentation suggest stability and patterns like Trichrome, Starburst, Comet tail, Polkadot suggest unstabilty. Patients with good response to treatment showed Marginal hyperpigmentation, Perifollicular and Reticulate pigmentation, and patients with poor response to treatment showed Trichrome, Starburst, Comet tail, Polkadot patterns on dermoscopy.

Hence dermoscopy can be used to monitor the disease activity, response to the treatment and hence prognosis of the disease. Some patterns like trichrome, polkadot, starburst, comet tail suggest the change in treatment modality.

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Source of Support: Nil; **Conflict of Interest:** None

Submitted: 27-09-2017; **Accepted:** 25-10-2017; **Published:** 06-11-2017