

A panoramic study of dermoscopic patterns in vitiligo

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Abstract

Background: Vitiligo is an acquired skin disorder characterized by white and depigmented patches enlarging and becoming more numerous with time. It is due to a disappearance of functioning melanocytes and loss of melanin in the epidermis. The condition can be cosmetically disfiguring and the lesional skin is thus more sensitive to sunburns. It affects 0.1-2% of the world's population, irrespective of gender and race, its etiology is unknown. **Aim:** To study the morphological dermoscopic patterns in cases of vitiligo and to access the disease activity, prognosis and as a diagnostic tool in choosing mode of treatment modality. **Materials and Methods:** White light dermoscopy is used in imaging patterns in 100 diagnosed cases of vitiligo, which includes stable vitiligo, unstable vitiligo, guttate vitiligo and vitiligo cases on treatment. **Result:** On examination with dermoscopy following patterns were seen trichrom, marginal hyperpigmentation, marginal reticular pigmentation, perifollicular hyperpigmentation in stable vitiligo and salt pepper pattern, starburst pattern in unstable vitiligo; erythema, perifollicular pigmentation, reticular pigmentation seen in stable vitiligo, comet tail pattern seen in koebner phenomena. **Conclusion:** Erythema, Telangectasis, perifollicular pigmentation, reticular pigmentation patterns showed good prognosis; marginal hyperpigmentation, perifollicular hyperpigmentation, leucotrichia, marginal reticular pigmentation, comet tail showed poor prognosis, hence dermoscopy is used to monitor activity and prognosis of disease with treatment and some patterns can also suggest change of treatment modality. **Keywords:** Dermoscopy, Stable vitiligo, Unstable vitiligo.

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Received Date: 14/12/2015 Revised Date: 10/01/2016 Accepted Date: 16/02/2016

Access this article online

Quick Response Code:



Website:

www.medpulse.in

DOI: 26 April 2016

INTRODUCTION

Vitiligo is an acquired, idiopathic disorder characterized by circumscribed depigmented macules and patches with or without leucotrichia. Melanocyte destruction in vitiligo is a slow process resulting in a progressive decrease in melanocyte numbers.¹ Normal skin has a typical reticulate pigmentary pattern that corresponds to the pigmentation along rete ridges with pale areas corresponding to the papillary dermis.² This reticulate pigmentary pattern is altered in various pigmentary disorders including vitiligo.³ Evolving lesions of vitiligo are difficult to distinguish clinically from other causes of hypopigmentation and depigmentation. Dermoscopic

examination can detect subtle changes in the pigmentary pattern which may be useful in the early diagnosis of vitiligo.³ 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 some cases of evolving lesions of vitiligo.⁴ Dermoscopy is usually employed to examine melanomas and other pigmented lesions. However, it has recently been used in the early diagnosis of localized vitiligo. A pattern of depigmentation with residual reservoirs of perifollicular pigment is considered characteristic signifying focally active or repigmenting vitiligo.⁵

MATERIALS AND METHODS

100 established cases of vitiligo, which includes stable vitiligo, unstable vitiligo and vitiligo cases on treatment. Informed consent was taken from patients. Dermoscopy was used for imaging patterns and computer to store images.

Inclusion Criteria: Established cases of stable and unstable vitiligo, including few patients on treatment.

Exclusion Criteria: Other causes of hypopigmentary lesions.

RESULTS

Table 1

Patterns	Stable vitiligo	Unstable vitiligo	Total
Trichrome pattern	17	39	56
Reticular pigmentation	46	15	61
Perifollicular pigmentation	38	17	55
Marginal hyperpigmentation	23	0	23
Salt pepper pattern	7	3	10
Starburst pattern	0	12	12
Comet tail pattern	0	2	2

Out of 100 cases of vitiligo. Trichrome pattern is seen in 56 cases, Reticular pigmentation in 61 cases, Perifollicular pigmentation is seen in 55 cases, Marginal hyperpigmentation is seen in 23 cases, Salt pepper pattern is seen in 10 cases, Starburst pattern is seen in 12 cases, Comet tail pattern is seen in 2 cases, Leucotrichia is seen in 28 cases. According to our study: Patterns like reticular pigmentation, Perifollicular pigmentation, Marginal hyperpigmentation, Salt pepper pattern seen significantly in stable vitiligo. Patterns like Trichrome, Starburst pattern, Comet tail pattern are seen in unstable vitiligo.

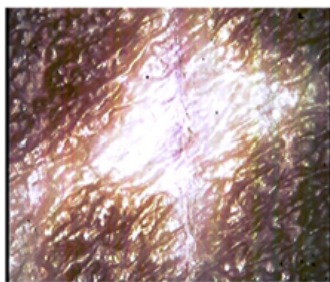


Figure 1

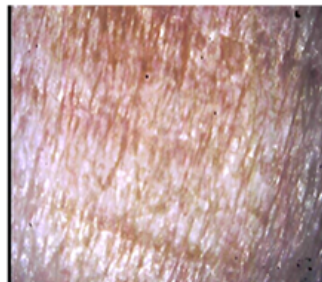


Figure 2

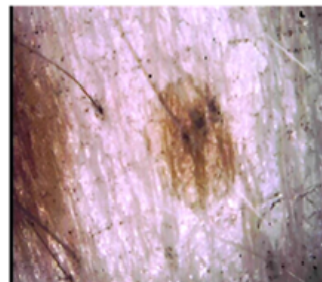


Figure 3

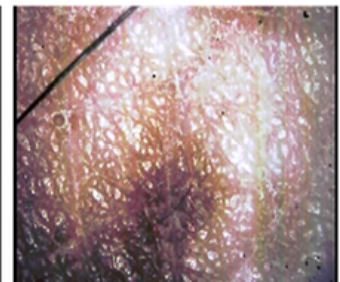


Figure 4

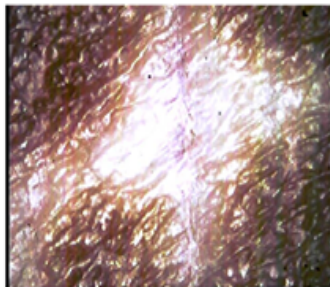


Figure 5

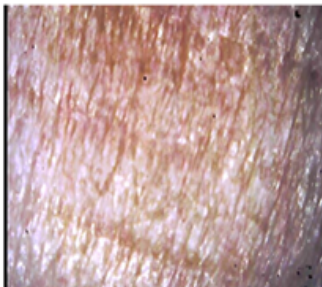


Figure 6



Figure 7

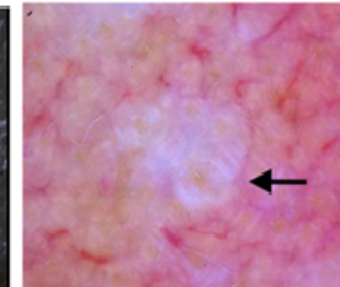


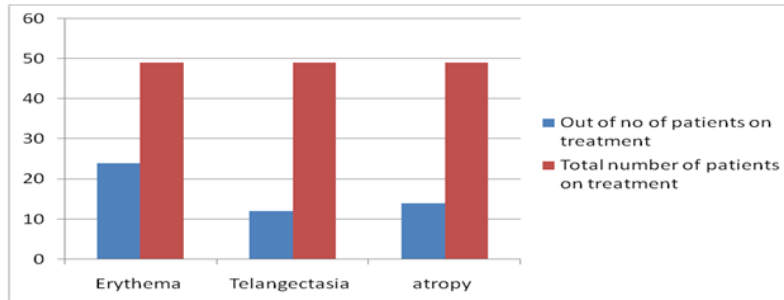
Figure 8

Legend

- Figure 1: Trichrome pattern
- Figure 2: Reticular pattern
- Figure 3: Perifollicular pigmentation
- Figure 4: Marginal hyperpigmentation
- Figure 5: Starburst pattern
- Figure 6: Salt pepper pattern
- Figure 7: Erythema
- Figure 8: Atrophy and telangiectasia

Table 2

Additional signs seen in patients on treatment	Number of cases	Total number of cases on treatment
Erythema	24	49
Telangiectasia	12	49
Atrophy	14	49



Out of total 100 cases, 49 cases were on treatment and they showed erythema in 24 cases, telangiectasia in 12 cases, and atrophy in 14 cases.

DISCUSSION

Normal skin has a typical reticulate pigmentary pattern that corresponds to the pigmentation along rete ridges with pale areas corresponding to the papillary dermis.² This reticulate pigmentary pattern is altered in various pigmentary disorders including vitiligo.³ Evolving lesions of vitiligo are difficult to distinguish clinically from other causes of hypopigmentation and depigmentation. Dermoscopic examination can detect subtle changes in the pigmentary pattern which may be useful in the early diagnosis of vitiligo.³ Dermoscopy is usually employed to examine melanomas and other pigmented lesions. However, it has recently been used in the early diagnosis of localized vitiligo. A pattern of depigmentation with residual reservoirs of perifollicular pigment is considered characteristic signifying focally active or repigmenting vitiligo.⁵ The diagnosis of vitiligo is primarily clinical without the need of any diagnostic tools. However, noninvasive tests are helpful:¹ When diagnosis is in doubt e.g. in evolving disease, and² for objective evaluation of treatment response. Three techniques are helpful for this purpose -digital photography with computerized image analysis, dermoscopy, and reflectance confocal microscopy.⁵ Dermoscopy (digital epiluminescence microscopy or "dermatoscopy") magnifies the clinical image manifold and allows appreciation of subtle features invisible to the naked eye. This noninvasive and easy-to-use technique may be performed with a hand-held instrument or by video dermoscopy. While video dermoscopy permits high-resolution viewing at higher magnifications, the hand-held dermoscope is more convenient for quick office evaluation. Dermoscopy is most commonly used for the examination of melanomas, pigmented lesions, and hair-loss. Its use in diagnosis and differentiation of hypopigmented lesions is relatively novel.⁶ 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.

While in their report, clinical suspicion of vitiligo was confirmed on dermoscopic observation of depigmentation with preserved perifollicular pigment;⁵ while in our study out of 100 cases of vitiligo. Trichrome pattern is seen in 56 cases, reticular pigmentation in 61 cases, perifollicular pigmentation is seen in 55 cases, marginal hyperpigmentation is seen in 23 cases, salt pepper pattern is seen in 10 cases, star bust pattern is seen in 12 cases, comet tail pattern is seen in 2 cases, leucotrichia is seen in 28 cases. Meng *et al.*, studied 176 patients with various types of depigmentation of whom 97 had vitiligo. They observed residual perifollicular pigmentation in 57 (91.9%) of 62 patients with progressing vitiligo and 22 (62.9%) of 35 those with stable vitiligo. However, residual perifollicular pigmentation was absent in the 79 patients with non-vitiligo depigmentation. The presence of telangiectasia, early reservoirs of pigmentation and perilesional hyperpigmentation were related to the stage of vitiligo and treatment history of patients.⁷ Their study differed from ours in that they included all types of vitiligo (evolving, stable and devolving) as well as other causes of hypopigmentation and depigmentation. Our analysis focused on identifying dermoscopic signs of evolving lesions of vitiligo which showed, out of total 100 cases 56 cases were on treatment and they showed erythema is seen in 24 cases, telangiectasia is seen in 12 cases, atrophy is seen in 14 cases, perifollicular and Marginal reticular pigmentation is seen in most of the cases on treatment. Various dermoscopic findings are associated with stability and repigmentation of vitiligo. These include marginal and perifollicular hyperpigmentation, reticular pigmentation and marginal reticular pigmentation.⁸ In our study out of total 100 cases 56 cases were on treatment and they showed erythema is seen in 24 cases, telangiectasia is seen in 12 cases, atrophy is seen in 14 cases, perifollicular and Marginal reticular pigmentation is seen in most of the cases on treatment. Dermoscopy has also been used for monitoring adverse effects of potent corticosteroids in psoriasis and also in vitiligo. Dermatomal type vitiligo are early age of onset, relatively stable course, frequent association with leucotrichia, absence of koebner's phenomenon [comet tail pattern], are less responsive to PUVA therapy. The

presence of telangiectasia, early reservoirs of pigmentation and perilesional hyperpigmentation were related to the stage of vitiligo and treatment history of patients,^{9,10} but according to our study: Patterns like reticular pigmentation, Perifollicular pigmentation, Marginal hyperpigmentation seen significantly in stable vitiligo. Patterns like Trichrome, Salt pepper pattern, Star bust pattern, Comet tail pattern are seen in unstable vitiligo.

CONCLUSION

Erythema, Telangectasis, perifollicular pigmentation, reticular pigmentation patterns showed good prognosis: marginal hyperpigmentation, perifollicular hyperpigmentation, leucotrichia, marginal reticular pigmentation, comet tail showed poor prognosis, hence dermoscopy is used to monitor activity and prognosis of disease with treatment and some patterns can also suggest change of treatment modality.

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Source of Support: None Declared
Conflict of Interest: None Declared