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## Research Article

### A STUDY OF ROLE OF DERMOSCOPY IN DISEASE ACTIVITY OF VITILIGO PATIENTS

Ambresh S Badad., Anusha Chowdry\* and Ashok Hogade

Department of DVL, MRMC Kalaburagi

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#### ABSTRACT

**Background:** Vitiligo, an autoimmune disorder of pigmentation characterized by loss of functional melanocytes and melanin in epidermis. Dermoscopy, a non invasive clinical technique aids in diagnosing early lesions of vitiligo and in assessing the stability of vitiligo.

**Methods:** An observational study of Dermoscopy was conducted on 50 patients of vitiligo in Department of DVL, Basaveshwara Teaching and General Hospital, Kalaburagi.

**Results:** Out of 50 patients of vitiligo, majority belong to age group of 15-50 yrs with female preponderance. 120 lesions were analysed in 50 patients. 88 were clinically progressive and 32 were quiescent. Various patterns of vitiligo observed in our patients were vitiligo vulgaris 18, acral type 13, focal variant 9, mixed 8, segmental 2. On dermoscopy Marginal pigmentation was seen in 48%, perifollicular pigmentation in 32%, both patterns in 12% and none of the patterns were seen in 8%. Family history was seen in 9 patients. In our study vitiligo association with hypothyroidism is 06 patients and diabetes in 2 patients. Dermoscopy features of disease activity in our study were Trichrome pattern, Petaloid pattern, Comet tail, Nebullous pattern, Polka dot. Leucotrichia was seen in 32 patients.

**Conclusion:** Dermoscopy aids in monitoring disease activity, treatment response and prognosis of disease. It helps in assessing the disease activity earlier than the clinical onset of disease instability.

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#### INTRODUCTION

Vitiligo is a common acquired dermatological disease occurring worldwide with an overall prevalence of 1%. However, its incidence ranges from 0.1 to > 8.8%<sup>1-3</sup> across the country and in different countries of the globe. Its characterized by white macules due to autoimmune destruction of melanocytes, with psychological impact owing to social burden. Normal skin has typical reticulate pigmentary pattern, which corresponds to pigmentation along rete ridges with pale areas corresponding to papillary dermis.<sup>4</sup> Dermoscopy facilitates in the diagnosis of altered reticulate pigmentation in vitiligo<sup>3</sup> and to assess evolution of stage of disease and the response to treatment.

Dermoscopy, a noninvasive method aids in appreciating subtle features invisible to naked eye.

#### METHODS

A Prospective study was conducted in department of Dermatology, Basaveshwara Teaching and General Hospital, Kalaburagi from November 2018 to April 2019. All patients with vitiligo were included and patients with other hypopigmentary and depigmentary causes were excluded. Informed consent was taken from the patients, following which

they were included in the study. A complete history regarding, duration of the disease, family history, history of Koebner's phenomenon, and history of associated other autoimmune disorders was taken. All patients were examined and were classified into stable and unstable vitiligo. Investigations were performed in patients when required and dermoscopic evaluation was done.

Different dermoscopic parameters noted in our patients are:

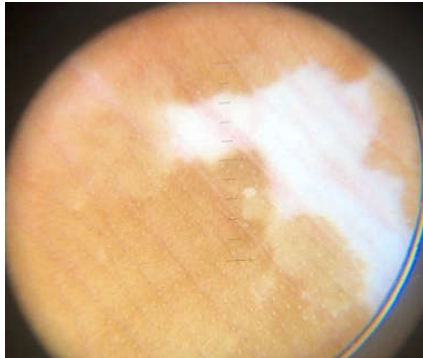
Reticulate pigmentation  
Perifollicular pigmentation  
Perilesional pigmentation  
Absent pigment network  
Marginal pigmentation  
Trichrome  
Petaloid pattern  
Comet tail  
Nebullous pattern  
Polka dot  
Leucotrichia

#### RESULTS

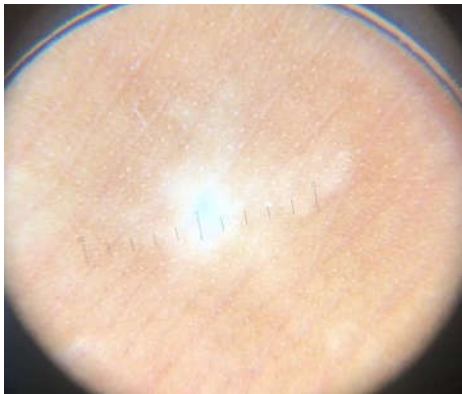
Out of 50 patients of vitiligo, majority belong to age group of 15-50yrs with female preponderance. 120 lesions were

\*Corresponding author: Anusha Chowdry  
Department of DVL, MRMC Kalaburagi

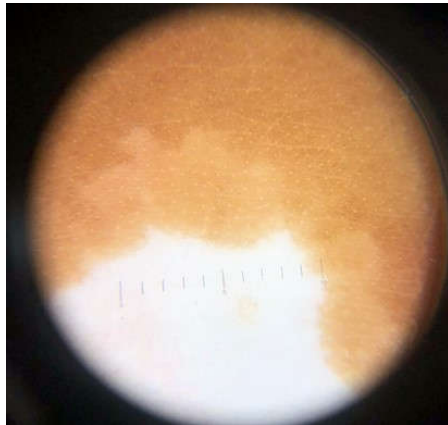
analysed in 50 patients. 88 were clinically progressive and 32 were quiescent. Various patterns of vitiligo observed in our patients were vitiligo vulgaris 18, acral type 13, focal variant 9, mixed 8, segmental 2.



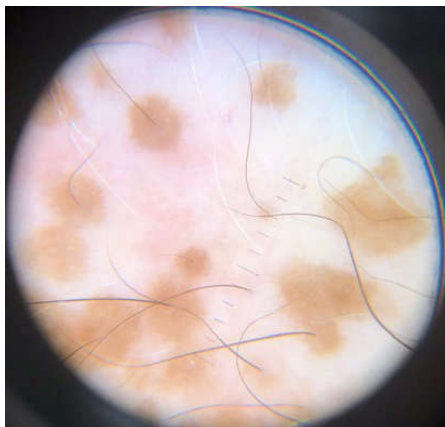
**Figure 1** Amoeboid pattern



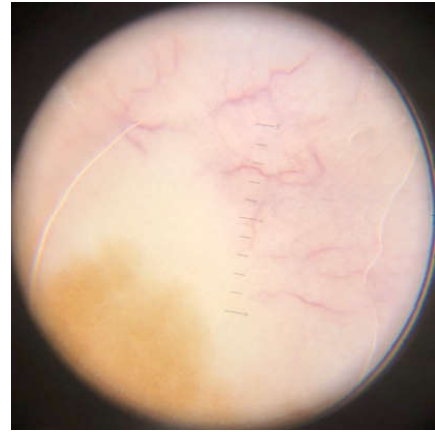
**Figure 2** Nebulous pattern



**Figure 3** Trichrome pattern



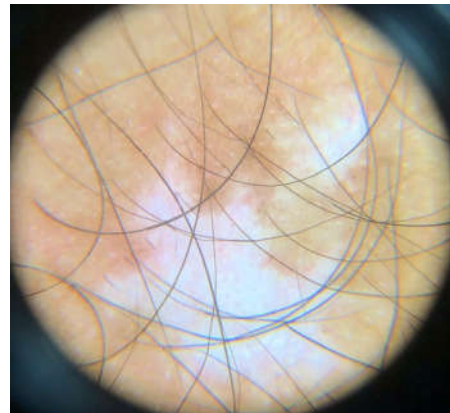
**Figure 4** Perifollicular pigmentation



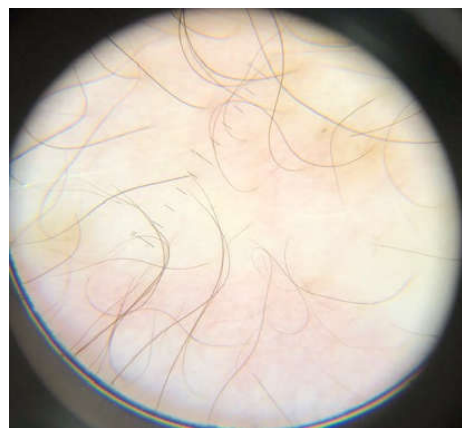
**Figure 5** Telangiectasia



**Figure 6** Leucotrichia



**Figure 7** Starburst pattern



**Figure 8** Absent pigment network

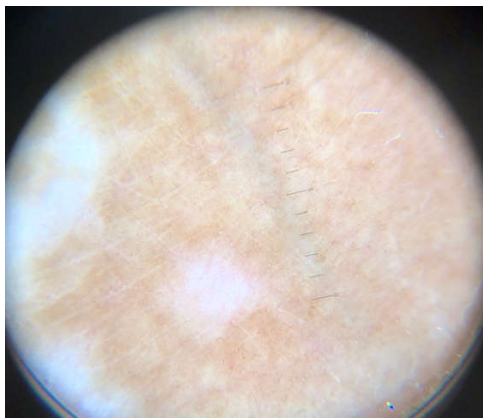


Figure 9 Reduced pigment network



Figure 10 Comet tail pattern

On dermoscopy Marginal pigmentation was seen in 48%, perifollicular pigmentation in 32%, both patterns in 12% and none of the patterns were seen in 8%. Family history was seen in 9 patients. In our study vitiligo was seen in association with hypothyroidism in 6 patients and insulin dependent diabetes in 2 patients. Dermoscopy features of disease activity in our study were Trichrome pattern, Petalloid pattern, Comet tail, Nebulous pattern, Polka dot. Unstable patches were 74 and stable were 46. Leukotrichia was seen in 32 patients.

Additional signs seen in patients on treatment were erythema in 18 patients, telangiectasia in 20 patients, atrophy in 12 patients.

## DISCUSSION

Vitiligo, acquired disorder with depigmented macules clinically and absence of functional melanocytes in epidermis histologically. Evolving lesions of vitiligo which are difficult to be distinguished from other hypopigmentary and depigmentary disorders can be diagnosed using dermoscopy and it also aids in diagnosing trichrome vitiligo, blue vitiligo<sup>5-9</sup>.

Out of 50 patients, 29 were females and 21 were males. There is a preponderance of females in most series based on outpatient attendances, but the frequency in the population is probably the same in both sexes<sup>10</sup>.

A positive family history was seen in 9 patients. Different studies have reported association ranging from 6.25 % to 30%.<sup>11,12</sup> Vitiligo has polygenic or autosomal dominant inheritance pattern with incomplete penetrance and variable expression.<sup>13-15</sup>

Vitiligo vulgaris 26 was the most common type observed in our study followed by acral vitiligo 15, mucosal type in 3, focal in

5, segmental in 1, which is similar to reports of Koranne *et al*<sup>16</sup> and Sarin *et al*<sup>17</sup>. Koebnerisation was seen in 11 patients in our study and nail involvement in 11 patients.

In our study vitiligo was seen in association with hypothyroidism in 6 patients, but it was reported as 12% by Gopal *et al*<sup>18</sup> and 1-7% in insulin dependent diabetes<sup>19</sup>, although it was seen in 2 patients in our study.

On dermoscopy Marginal pigmentation was seen in 48%, perifollicular pigmentation in 32%, both patterns in 12% and none of the patterns were seen in 8%. Study by Thatte and Khopkar showed 6.7% and 3.3% of patients with perifollicular and marginal pigmentation respectively. Family history was seen in 9 patients. Leukotrichia was seen in 32 patients. Its presence enhances diagnostic accuracy and signifies poorer prognosis mainly in segmental vitiligo.<sup>20,21</sup> Dermoscopic findings associated with stability and repigmentation of vitiligo include marginal and perifollicular hyperpigmentation, reticular pigmentation and marginal reticular pigmentation. In our study, we noted reduced pigmentary network, absent pigmentary network in the evolving vitiligo lesions. Marginal hyperpigmentation was the most common pattern noted in our patients with stable vitiligo and trichrome pattern in unstable vitiligo patients.

## CONCLUSION

Dermoscopy helps in diagnosing evolving lesion of vitiligo, to assess disease activity, response to treatment and aids in prognosis of disease.

### Declarations

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Ethical approval: Approved

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