

**Dermoscopic comparison between Heine Delta one and Dermlite DL4 for common dermatological conditions at a tertiary care centre, Madhya Pradesh**

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**Abstract**

**Aim:** To compare the quality, efficacy and handiness of two different dermoscope in various cutaneous disorders.

**Material and Method:** A total of 17 patients of different skin diseases that visited to skin outpatient department (OPD) were selected. Cutaneous lesions were noted by Heine delta one and Dermlite DL4 dermoscope; and were compared on the basis of clarity and quality of image, handiness of dermoscope and problems pertaining to the use of the respective dermoscope. Pictures were taken using Samsung Galaxy S8 (12 mega pixel) smart phone.

**Result:** The quality of image was similar in both the dermoscope and there was no difficulty in concluding diagnosis using the same. There was a problem of peripheral rim of light in Heine delta one which hindered the quality of image.

**Conclusion:** There is no significant difference in quality of images captured using the respective

dermoscopes, making it difficult to choose between the two as one has a feature that compensates for its lag.

**Keywords:** Dermoscope, Heine delta one, Dermlite DL4

**Introduction**

The dermoscope is a remarkable diagnostic tool, has made and aided in diagnosing skin diseases which were previously quite difficult to diagnose. It has abled dermatologist to visualizes delicate clinical patterns of cutaneous lesions which were easily missed by the unaided eye. Skin surface microscope, Epiluminescence microscope or Episcopes are other names given to dermoscope.<sup>1</sup>

Dermoscope was fashioned primarily to detect early lesions of melanomas and to get biopsy of suspicious lesions.<sup>2</sup>

Functionally, a dermoscope is comparable to a magnifying lens, but has an inbuilt light source, superior magnification that could be adjusted, the

ability to evaluate deep structures such as the reticular dermis, and the ability to take photographs.

The principle behind dermoscopy is transillumination of a lesion and reviewing it with a high magnification to picture delicate features.<sup>3</sup> The Light that is incident on skin undergoes reflection, refraction, diffraction and absorption.<sup>1</sup> The dermoscopy can be done as contact and non- contact, using polarized and non- polarized view. Dermoscope primarily consist of Achromatic lens, Inbuilt illuminating system, and power supply.<sup>4</sup>

Various dermoscopes have pigment booster and light intensifiers like features as in Dermlite DL4 and Heine delta one respectively.

The objective of the study was to compare the features of two commonly used dermatoscope in various common dermatological conditions.

**Method and materials**

The present study is a cross sectional study. A total number of 17 patients were included randomly in the study, who visited the skin OPD during the period of 2 months between December 2019 to February 2020 in Sri Aurobindo medical college and PG Institute, Indore, Madhya Pradesh. Dermoscopy of lesions over skin and scalp was performed using two different standard dermoscopes, namely heine delta one and Dermlite DL4. The images were captured using Samsung galaxy S8 (with 12 mega pixel) smartphone, using non - contact, non- polarized dermoscopy. The two dermoscopes were compared in terms of their weight, handiness, features like pigment booster, light intensifier, quality and clarity of images, battery life, accessories available with dermoscope (such as lens cap, microfiber cloth).

**Result**

Table 1 shows patient characteristics. The mean age of patients being 24.82±10.71(Standard Deviation). The study included 52.94% male patients while rest were females.

Table 1: Patient characteristics

Sn.	Age (years)	Sex	Diseases
1	16	F	Nevus sebaceous of Jadassohn
2	12	M	Tinea capitis
3	37	M	Alopecia areata
4	24	M	Verruca vulgaris
5	21	F	Acanthosis nigricans
6	37	F	Vitiligo
7	19	F	Melanocytic nevi
8	38	F	Cutaneous small vessel vasculitis
9	6	M	Hand foot mouth disease
10	31	M	Keloid
11	35	F	Melasma
12	21	M	Halo nevus
13	17	F	Pigmentary demarcation line
14	29	M	Lichen plano pilaris
15	11	M	Pityriasis lichenoides chronicus
16	42	M	Seborrhoeic keratoses
17	26	F	Junctional nevus

Table 2: summarizes the difference between the two dermoscopes

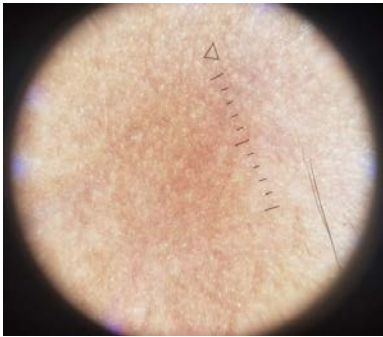
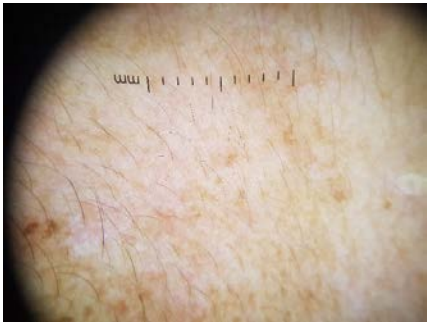









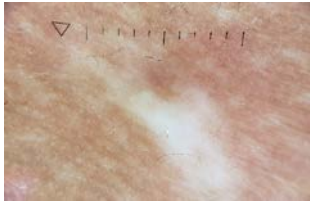
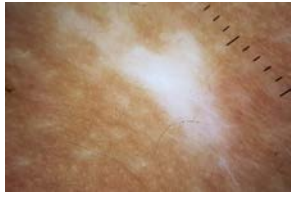


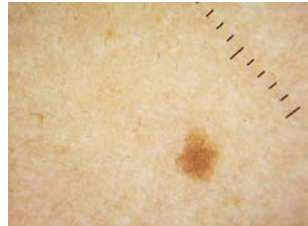
Heine	DL4
Light intensifier present	No intensifier present
No pigment booster	Pigment booster present
No universal adaptor	Universal adaptor is present
Peripheral rim of light is seen (as shown in this picture)  	No such problem  
No mark is illustrated to suggest a focus point as in DL4 for taking pictures	Marks are illustrated  
Cable with adaptor present for charging	Cable present
Lighter	Comparatively heavier
Broad base, grip is like a cell phone	Has good grip due to its cover at the handle
No accessories	Microfibre cloth and lens cap  




Table 3: summarizes the dermoscopic analysis of arious dermatological conditions




<p>1. Nevus sebaceous On dermoscopy- Yellowish- Grey papillary appearance (sulci and gyri)</p>		
 <p>Heine</p>	 <p>D14</p>	
<p>2. Tinea capitis On Dermoscopy- pigtail hair (red arrow), black dots (blue arrow), pustules (black arrow)</p>		
 <p>Heine</p>	 <p>D14</p>	
<p>3. Alopecia areata On dermoscopy- exclamation mark (blue arrow), variability of hair diameter, yellow dots.</p>	 	


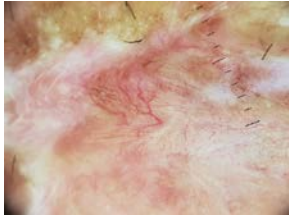
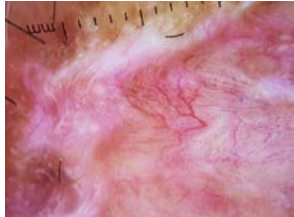
		<p>D14</p>
<p>heine</p>		
<p>4. Verruca vulgaris On dermoscopy- dotted vessel (seeds), verrucous surface</p>		
		
<p>Heine</p>	<p>DL4</p>	
<p>5. Acanthosis nigricans On dermoscopy- multiple cristae and sulci</p>		
		
<p>heine</p>	<p>D14</p>	

<p>6. Vitiligo On dermoscopy- Homogenous depigmented area with irregular borders</p>	
 <p>heine</p>	 <p>D14</p>



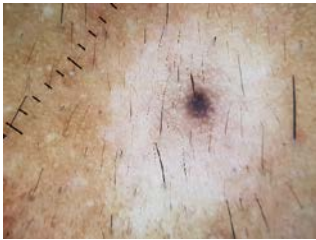


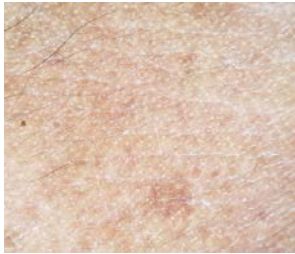

<p>7. Melanocytic nevi On dermoscopy- Fingerprint pattern, homogenous pigment network</p>	
 <p>heine</p>	 <p>D14</p>

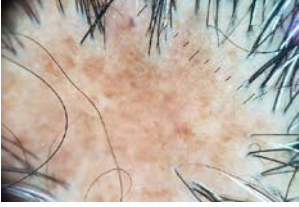





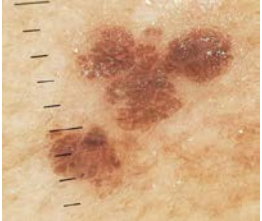
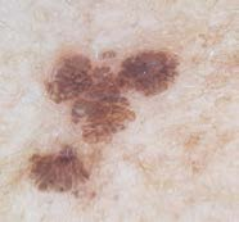

<p>8. Cutaneous small vessel vasculitis On dermoscopy- Diffuse erythema with red dots</p>	
 <p>heine</p>	 <p>D14</p>

<p>9. Hand foot mouth disease On dermoscopy- central whitish area surrounded by peripheral erythema.</p>	
 <p>Heine</p>	 <p>D14</p>

<p>10. Keloid after multiple Intralesional steroid and cryotherapy session- showing arborizing vessels and areas of hypopigmentation</p>	
 <p>heine</p>	 <p>D14</p>

<p>11. Melasma- On dermoscopy- reticuloglobular pattern and dense pseudo-reticular pigment network seen</p>	
 <p>heine</p>	 <p>D14</p>

<p>12. Halo nevus On dermoscopy- a central pigmented follicular macule with pseudoreticular pattern at its periphery, merging with depigmented patch.</p>	
 <p>heine</p>	 <p>D14</p>
<p>13. Pigmentary demarcation line- On dermoscopy- Diffuse brownish pigmentation, with follicular hypopigmentation</p>	
 <p>heine</p>	 <p>D14</p>
<p>14. Pseudo pelade of Brocq On dermoscopy- Loss of follicular ostia, brownish pigmented network s/o scarring alopecia</p>	

 <p>heine</p>	 <p>DL4</p>
<p>15. Pityriasis lichenoides chronica On dermoscopy- brownish scaly macule with surrounding halo followed by diffuse brown-red pigmentation.</p>	
 <p>heine</p>	 <p><b>DL4</b></p>
<p>16. Seborrheic keratoses On dermoscopy- moth eaten border, hair pin vessels, cerebriform pattern</p>	
 <p>heine</p>	 <p>DL4</p>
<p>17. Junctional nevus On dermoscopy- follicular hyperpigmented macule with peripheral brownish pseudoreticular network</p>	



## Discussion

The term “dermoscopy,” which is the most accepted now, was first suggested by Friedman *et al.*<sup>5</sup>

Dermoscope help to make a quick and bed side investigatory modality supporting the clinical diagnosis. There are various dermoscopes available in the market, choosing the best is still a dilemma.

While comparing the two dermoscopes, we found that there was a light intensifier in Heine delta one but was of limited use in the present study. There was presence of pigment booster in DL4 but was of limited use in skin of color. Heine delta one was more convenient to carry due to its cover, whereas in Dermlite DL4, the cover was small, and did not provide complete coverage of instrument. All the images were captured without using the adaptor, due to unavailability of universal adaptor for Heine delta one. We encountered the problem of peripheral rim of light with Heine delta one, probably due to unavailability of adaptor. Heine delta one has a broad base which makes the grip easier. Albeit, Dermlite DL4 has a rubber-based cover over its handle, which also provides good grip. Both the dermoscopes had equal battery life. Heine delta one has come with whole set of charger, whereas Dermlite DL4, only has a cord. Dermlite DL4 provided with additional accessories of Microfibre cloth and lens cap. Heine delta one was found to be lighter as compared to the other.

While comparing the image characteristics by the two dermoscopes, it was observed that warm images were seen with Heine delta one as compared to the other. Vessels were more appreciated with Heine delta one. Epidermal structures were better visualised using Dermlite DL4. Skin markings were better appreciated by Heine Delta one. Scalp dermoscopy was equivalent by the two. Color variation was better appreciated by Dermlite DL4.

The limitations of the study were small sample size, short duration of study, nail dermoscopy could not be compared.

## Conclusion

Dermoscope is now a days an integral part in making dermatological diagnosis. Choosing an ideal dermoscope still remains a dilemma, for the upcoming dermatologist. In the present study, we found no significant difference between the two types of dermoscopes used. Making us difficult to choose one over the other.

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