

Dermoscopy – Not just for diagnosis and not just for Dermatologists !

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Keeping pace with technical advances in diagnostics and therapeutics although challenging, has become exigent. Embracement of novel technology by medical practitioners is pivotal in upholding the pristine principle of assuring best health care to our patients. Dermoscopy is one such relatively novel, extremely useful, and versatile technology.

A dermoscope (syn: dermatoscope, epiluminescence microscope) is a relatively novel diagnostic tool for skin disorders. It allows non-invasive visualization of subsurface skin structures and subtle clinical patterns of skin lesions that are invisible to the unaided eye. Dermoscopy has come a long way from its original indication for ruling out dysplasia and melanomas in moles of white-skinned individuals to its extant use for diagnosis of various skin, scalp and nail disorders, especially in skin of color (SOC).¹ Simply stated, when used by a trained practitioner, a dermoscope can differentiate melasma from other facial melanosis, vitiligo from simulating hypopigmented disorders, psoriasis from eczema, various causes of alopecia, nail psoriasis from onychomycosis and nail tumours, amongst others. The increasing trend of use of dermoscopy by practitioners is evident from the results of a survey conducted in the United Kingdom (UK) comparing the use of this technique by dermatologists in 2003 (54% of respondents) to that in 2012 (86% of respondents).²

The dermoscope is an immensely versatile technique, with many uses beyond diagnosis. Moreover, Dermoscopy hugely improves doctor-patient communication. Explaining the diagnosis to the patients becomes easier by showing them the lesional dermoscopic image. Patients who refuse for a skin biopsy despite its essentiality almost always consent for the same after having been shown the dermoscopic image, an evolving concept we prefer to call “Dermoscopy-induced skin biopsy”. In many situations dermoscopy rescues the patient from undue anxiety stemming from their preconceived apprehensions e.g. pityriasis alba perceived as vitiligo, or an irritated seborrheic keratosis confused with melanoma. Dermoscopy also aids in selection of the optimum site for biopsy; this concept of “Dermoscopy-guided skin biopsy” has been reported to be utile in facial melanosis, vasculitis, cicatricial alopecia, and skin tumours amongst others.^{3,4}

In conditions like melasma, lichen planus pigmentosus, alopecias, dermoscopic improvement often precedes clinical improvement. Demonstration of dermoscopic improvement in chronic disorders reassures the patient and enhances treatment compliance, especially in patients with associated Body Dysmorphic Disorder (BDD), in whom the objective improvement appreciable on dermoscopy ensures treatment compliance while the psychiatric treatment continues.

The clinicians’ satisfaction with dermoscopic images serving as an early, objective and reliable measure of pre- and post-treatment comparison has culminated into the employment of dermoscopy for this purpose in clinical studies as well.^{5,6}

Further, we have found videodermoscopy useful for “cosmetic wart mapping” in white-skinned population. Cosmetic warts arise from a single or few verrucae over the face due to pseudokoebnerization induced by temporary hair removal methods like shaving, threading, waxing etc. Videodermoscopy of infected areas facilitates ablation of many more warts than those visible to the naked eye.⁷

This is also useful in aesthetic medicine. Dermoscopic photoaging scale (DPAS), has been recently conceived and validated for quantitative evaluation of photoaged facial skin.⁸ In our own experience, it has proven very useful in patients with hirsutism on Laser Hair Reduction (LHR). Dermoscopic evaluation of the involved areas before laser session allows precise evaluation of the thickness of hairs that aids in optimizing laser parameters.⁹ Dermoscopic evaluation of peri-ocular hyperpigmentation and under eye bags can provide a clue to the predominant abnormality (skin pigmentation, abnormal vasculature, skin laxity) and aid in customizing treatment protocol.

Given the significant overlap between cosmetic dermatology and aesthetic surgery, and the utility of dermoscopy in aesthetics (vide supra) it is natural, that plastic surgeons would also benefit with this technique.¹⁰ For a hair transplant surgeon, trichoscopy is useful for recording the number of existing follicular units, the number of hair per follicular unit, follicular size, as well as the inter-follicular distance at both, the donor and recipient site. Additionally, trichoscopy may detect early post-transplant complications such as folliculitis and secondary lichen planopilaris.¹¹

Primary care physicians (PCPs) including General/family physicians and pediatricians are often the first point of contact for a patient with skin ailment. If they plan to diagnose and treat the patient themselves, the knowledge of dermoscopy can assist in making quick and accurate diagnosis, especially of common conditions such as scabies, pediculosis vs dandruff, molluscum contagiosum vs milia, tinea capitis vs alopecia areata etc.^{12,13} The proven role of dermoscopy in quick office

differentiation of vascular lesions and in early detection of skin tumours in genetic syndromes like xeroderma pigmentosum (XP) entails the need for paediatricians to master this technology.¹⁴ The non-invasiveness of dermoscopy obviously renders it even more useful in examination of children. In the Indian sub-continent, tinea (ring worm) infection is often treated with steroids by PCP's owing to diagnostic confusion with eczema. This has become one of the major factors contributing to rampant antifungal therapy failures. Dermoscopy can aid in detection of fungal infection and avoid tinea incognito. Dermoscopy can be very beneficial for surgeons in detection and removal of impacted foreign bodies and retained surgical sutures.¹⁵⁻¹⁷ Dermoscopy is also useful for rheumatologists, since it can detect nail fold capillary abnormalities facilitating the diagnosis of connective tissue diseases.¹⁸

Last but definitely not the least, the dermoscope is quintessentially the stethoscope of the dermatologist. Majority of skin and hair disorders are chronic and recurring. Examining a lesion with dermoscope and discussing the images with the patient indeed makes them feel taken care of and boosts their faith in their doctor's proficiency.

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REFERENCES

1. Errichetti E, Stinco G. Dermoscopy in General Dermatology: A Practical Overview. *Dermatol Ther (Heidelb)* 2016;6:471-507.
2. Butler TD, Matin RN, Affleck AG, Fleming CJ, Bowling JC. Trends in dermoscopy use in the UK: results from surveys in 2003 and 2012. *Dermatol Pract Concept* 2015;5:29-38.
3. Liu WC, Tey HL, Lee JS, Goh BK. Exogenous ochronosis in a Chinese patient: use of dermoscopy aids early diagnosis and selection of biopsy site. *Singapore Med J* 2014;55:e1-3.
4. Miteva M, Tosti A. Dermoscopy guided scalp biopsy in cicatricial alopecia. *J Eur Acad Dermatol Venereol* 2013;27:1299-303.
5. Micali G, Lacarrubba F, Santagati C, Egan CG, Nasca MR, Musumeci ML. Clinical, ultrasound, and videodermoscopy monitoring of psoriatic patients following biological treatment. *Skin Res Technol* 2016;22:341-8.
6. Micali G, Tedeschi A, West DP, Dinotta F, Lacarrubba F. The use of videodermoscopy to monitor treatment of scabies and pediculosis. *J Dermatolog Treat* 2011;22:133-7.
7. Sidharth S, Rahul A, Rashmi S. Cosmetic Warts: Pseudo-Koebnerization of Warts after Cosmetic Procedures for Hair Removal. *J Clin Aesthet Dermatol* 2015;8:52-6.
8. Isik B, Gurel MS, Erdemir AT, Kesmezacar O. Development of skin aging scale by using dermoscopy. *Skin Res Technol* 2013;19:69-74.
9. Mohamed EE, Ahmed AM, Tawfik KM, Ibrahim SM. Trichoscopic changes in hair during treatment of hirsutism with 1064-nm neodymium:yttrium-aluminum-garnet laser. *J Cosmet Dermatol* 2016;15:31-5.
10. Antoszewski B, Fijałkowska M, Stabryła P, Kasielska-Trojan A. Dermoscopy as a Helpful Tool in Plastic Surgeon's Practice - A Preliminary Study. *Pol Przegl Chir* 2015;87:609-13.
11. Olszewska M, Rakowska A, Rudnicka L. Hair Transplantation. In: Lidia Rudnicka L, Olszewska M, Rakowska A, editors. Atlas of Trichoscopy - Dermoscopy in hair and scalp disease. 1st ed. London: Springer London Ltd.;2012. p. 347-51.
12. Marghoob AA, Usatine RP, Jaimes N. Dermoscopy for the family physician. *Am Fam Physician*;88:441-50.
13. Haliasos EC, Kerner M, Jaimes-Lopez N, Rudnicka L, Zalaudek I, Malvey J, et al. Dermoscopy for the pediatric dermatologist part I: dermoscopy of pediatric infectious and inflammatory skin lesions and hair disorders. *Pediatr Dermatol*. 2013;30:163-71.
14. Haliasos EC, Kerner M, Jaimes N, Zalaudek I, Malvey J, Lanschuetzer CM, et al. Dermoscopy for the pediatric dermatologist, part ii: dermoscopy of genetic syndromes with cutaneous manifestations and pediatric vascular lesions. *Pediatr Dermatol* 2013;30:172-81..
15. Gómez-Moyano E, Crespo Erchiga V, Martínez Pilar L, Martínez García S, Martín González T, Godoy Diaz DJ, et al. Using dermoscopy to detect tinea of vellus hair. *Br J Dermatol* 2016;174:636-8.
16. Naimer SA. Therapeutic Dermoscopy to Facilitate Detection and Extraction of Foreign Bodies. *J Am Board Fam Med* 2017;30:374-6.
17. Naimer SA. Dermoscopic prevention and improved detection of retained sutures. *J Am Acad Dermatol*. 2014 Mar;70:e57-8.
18. Fueyo-Casado A, Campos-Muñoz L, Pedraz-Muñoz J, Conde-Taboada A, López-Bran E. Nail fold dermoscopy as screening in suspected connective tissue diseases. *Lupus* 2016;25:110-1.