

Dermoscopy Aids in the Diagnosis of Erythematous Scaly Patches and Plaques

Thesis

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بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

قَالُوا سُبْحَانَكَ لَا عِلْمَ لَنَا إِلَّا مَا
عَلَّمْتَنَا إِنَّكَ أَنْتَ الْعَلِيمُ الْحَكِيمُ

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List of Abbreviations

AIDS	: Acquired immunodeficiency disease Syndrome
AK	: Actinic keratosis
BCC	: Basal cell carcinoma
BD	: Bowen's disease
BWS	: Blue-white structures
CCLE	: Chronic Cutaneous Lupus Erythematosus
CD	: Chronic dermatitis
CI	: Confidence interval
CMM	: Cutaneous malignant melanoma
CTD	: Connective tissue disease
DLE	: Discoid lupus erythematosus
FUMHD	: Febrile ulceronecrotic Mucha-Habermann disease
IEC	: Intraepidermal carcinoma
KA	: Keratoacanthoma
LED	: Light emitting diodes
LK	: Lichenoid keratosis
LM	: Lentigo Maligna
LP	: Lichen planus
LPLK	: Lichen planus-like keratosis
MF	: Mycosis fungoides
Non-PSL	: Non-Pigmented skin lesions
PABAK	: Prevalence-adjusted bias adjusted kappa
pBD	: Pigmented Bowen's disease
PLEVA	: Pityriasis lichenoides et varioliformis acuta

List of Abbreviations *(Cont...)*

PP	: Plaque psoriasis
PR	: Pityriasis Rosea
PSL	: Pigmented skin lesions
sBCC	: Superficial basal cell carcinoma
SCC	: Squamous cell carcinoma
SD	: Seborrheic dermatitis
SE	: Standard error
SFTs	: Short fine telangiectasias
SK	: Seborrheic keratosis
SPSS	: Statistical package for social science
UVR	: Ultraviolet rays
VD	: Videodermatoscope
WS	: Wickham striae

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Introduction

Dermatoscopy (also known as dermoscopy, incident light microscopy, epiluminescence microscopy and skin-surface microscopy) is an inexpensive in vivo and non-invasive technique that permits the visualization of morphologic features of the epidermis and papillary dermis that are not visible to the naked eye. Previously, dermoscopy had been used in differentiating malignant pigmentary disorders, but the use of dermoscopy has recently been extended to the diagnosis of nonpigmentary skin disorders by defining the characteristic vasculature (*Zalaudek et al., 2006a*).

Intraepidermal carcinoma (IEC), superficial basal cell carcinoma (sBCC), and psoriasis may all present as a well-demarcated, variably scaly erythematous patch or plaque. Their differentiation poses a diagnostic challenge, particularly in the patient with both psoriasis and solar-damaged skin. When clinical diagnosis is not possible, biopsy is used to differentiate these entities. Dermatoscopy is valuable in the diagnosis and differentiation of IEC, sBCC, and psoriasis because of consistent dermatoscopic morphology (*Pan et al., 2008*).

Oligolesional psoriasis on the legs, where IEC is common, can be a difficult clinical diagnosis and dermatoscopy provides a quick, simple, and noninvasive aid. The major benefit from improved dermatoscopic differentiation of these

common nonpigmented tumors (sBCC and IEC) is a reduction in the need for skin biopsy. In addition, if the tissue is not altered by surgical biopsy, monitoring the response to treatment with topical and light based skin cancer therapies may be easier. Just as these vascular patterns are useful in making a positive diagnosis, the loss of characteristic vascular pattern is also useful in providing dermatoscopic evidence of cure after therapy (*Micantonio et al., 2007*).

Several previous studies, of limited size, have described some dermatoscopic features of IEC, sBCC, and psoriasis. The most significant dermatoscopic features of IEC were a clustered vascular pattern, glomerular vessels, and hyperkeratosis. When all 3 features were observed together, the diagnostic probability for IEC was 98% (*Argenziano et al., 2004; Malvey et al., 2006*). sBCCs were characterized by a scattered vascular pattern, arborizing microvessels, telangiectatic or atypical vessels, milky-pink background, and brown dots/globules; the diagnostic probability was 99% if 4 of these 6 features were identified (*Giacomet and Zalaudek, 2005; Argenziano et al., 2004*). For psoriasis, the significant features identified were a homogenous vascular pattern, red dots, and light-red background, yielding a diagnostic probability of 99% if all 3 features were present (*Pan et al., 2008*).



Aim of the Work

The aim of the current work is to evaluate the efficacy of dermoscopy in diagnosing scaly erythematous patches and plaques (eg. psoriasis, psoriasiform lesions) comparing dermoscopic diagnosis with histopathological results, as well as mentioning the dermoscopic features of each disease.

Chapter (1): **Dermoscopy**

Dermoscopy has gained popularity in recent years as an aid to the clinical diagnosis of many pigmented skin lesions (PSL) and non-pigmented skin lesions (non-PSL). The improvement in diagnostic accuracy of PSL has been well established (*Argenziano et al., 2003*) but recent work has also suggested an improved diagnosis of lesions that are typically non-pigmented using this technique (*Zalaudek et al., 2005a*). This is because dermoscopy allows the uncovering of key structures in non-PSL, including vascular patterns that are usually not visible to the naked eye (*Zalaudek et al., 2006a*).

Historical background

The 1980s can be considered as the heyday of dermoscopy, with the definition of criteria for dermoscopy and the first Consensus Conference on Skin Surface Microscopy (*Bahmer et al., 1990*).

However, the origin of the dermoscopic technique goes back as far as the 17th century, when Kohlhaus in 1663 first examined ungual matrix vessels under the microscope (*Gilje et al., 1953*).

In 1878 Abbe improved the technique of skin surface microscopy by using immersion oil between the lens and the skin to improve the image clarity (*Carli et al., 2001b*).