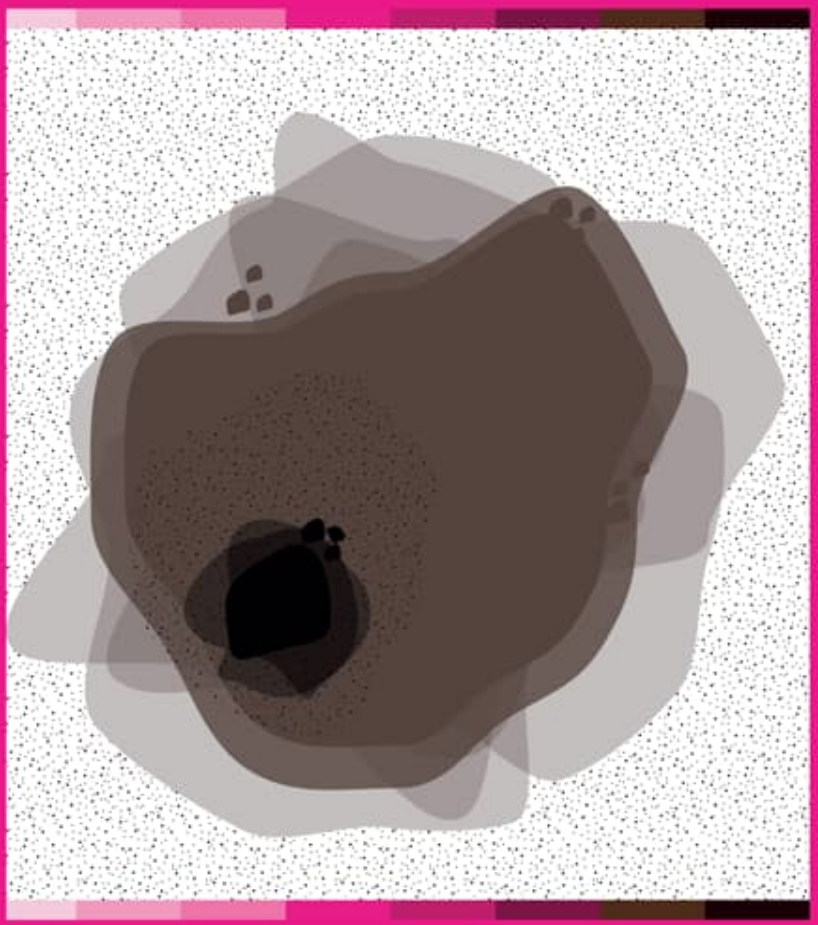
Giovanni Di Lorenzo

Clinical Dermoscopic Atlas



Officina Editoriale Oltrarno

CLINICAL DERMOSCOPIC ATLAS

Graphic project by:
Davide Di Maggio

Layout and cover page by:
Giuseppe Di Carlo

Translation by:
Miriam Friedman

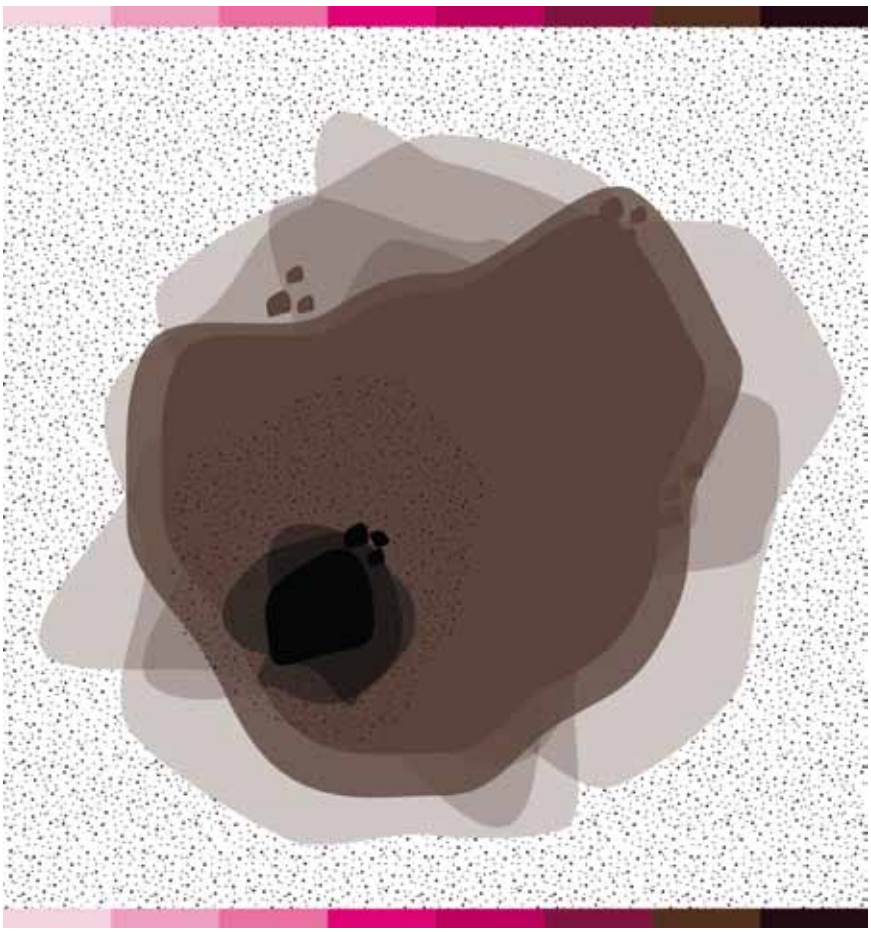
Photos by:
Giovanni Di Lorenzo

Printed in March 2015 by
Cartografica Toscana S.r.l. - Ponte Buggianese

Officina Editoriale Oltrarno S.r.l. - Firenze
web: www.oeofirenze.it
e.mail: info@oeofirenze.com

Giovanni Di Lorenzo

Clinical Dermoscopic Atlas



Officina Editoriale Oltrarno

Preface

The radical excision of a skin growth considered atypical, according to codified criteria, or else the conservative surgical removal of growths believed to be benign, especially in regions with high esthetic impact, has always meant an unavoidable and consolidated procedure for the surgeon.

With this goal in mind, to improve diagnostic accuracy and to allow correct surgical management, the author feels the need to correlate the clinical appearance of a growth with "sub-macroscopic" images using a noninvasive diagnostic technique able to reveal criteria and morphological patterns that are not visible to the naked eye.

Thus many years ago this educational journey and clinical professional experience came about (necessary for the plastic surgeon, who also deals with these pathologies), represented by the knowledge and use of dermoscopy, a simple routine technique for managing the diagnostics of diseases of the skin and others, and which today still continues to hold new attainments but also surprises.

Ten years later the author has collected in this treatise on clinical dermoscopy a prevalently illustrative series of skin neoplasms with essential dermoscopic references, specific for each chapter, even if there are some cases that are difficult from a diagnostic-clinical and histopathological point of view.

Dr. Giovanni Di Lorenzo

Presentation

I have accepted with great pleasure to present this work by my friend and colleague, Giovanni Di Lorenzo.

The richness and high quality of the images justify the effort, love and competence given by the author in accomplishing this activity.

I have personally participated in the construction of this experience over the years, supplying support in histopathology.

Over time the two activities have been refined and where possible diagnostic evaluations have coincided more and more.

I thank him for having invited me to write these lines since it gives me the chance to reaffirm that despite all, morphology maintains its role as the backbone of medical knowledge and that this is what we continue to consult in order to validate the results of "progress".

However, let us not forget that "the eye sees what the mind knows" (Wolfgang Goethe).

Prof. Marcello Filotico
Specialist in Anatomy and Pathologic Histology
Former Chief at the V. Fazzi Hospital, Lecce

Acknowledgements

The author wishes to thank his many colleagues, scholars in this subject, from whom he learned this method during various courses and conferences.

The author thanks those who have collaborated and supported his work, his friends and colleagues Marcello Filotico, Valerio Cirfera, Lorenzo Polo, Lizart Hako, Giuseppe De Maria and Angelo Congedo who have contributed to formulating the introductory notes to the individual chapters.

Author

Dr. GIOVANNI DI LORENZO

Specialist in reconstructive and esthetic plastic surgery
Former Managing Director of the operating facilities of dermasurgery
Hospital of Santa Caterina Novella, Galatina (LE)

Contents

Introduction

ASPECTS OF THE DERMATO-ONCOLOGICAL DIAGNOSTIC PATHWAY DERMOSCOPY AND EPILUMINESCENCE

In the face of an increase in skin tumors and in particular of melanomas, today we are witnessing a continuous flourishing of noninvasive diagnostic methods aimed at making diagnosis as precocious and reliable as possible.

Pigmented lesions of the skin lend themselves well to examination with these methods which include dermoscopy, certainly the most interesting one, for its practicality, immediateness and relative simplicity of execution as well as from a scientific point of view as it allows examination of the disposition within the lesion, specifying whether it is melanocytic or not.

Any pigmented lesion analyzed with this procedure will reveal morphological characteristics that are not noticeable with the naked eye, for which it is correct to state that dermoscopy consists of a "bridge" between clinical practice and histology.

We can use a simple dermoscope, with x10 magnification with illumination, still considered the standard instrument for performing dermoscopy, or a videodermoscope, which is a high-resolution color video camera that visualizes the image on a computer monitor and can be archived according to the suggested objectives.

With this method lesions can be observed live and with a greater magnification compared to a simple dermoscopy, up to X 30-50-80, giving a more detailed analysis of the lesion.

The use of epiluminescence for analyzing skin dates back to the XVII century when Kolhause observed the blood vessels of the nail matrix, but it is only in 1916 that Carl Zeiss made the first dermoscope and only in 1981 was differentiation of benign and malignant melanocyte lesions introduced, based on the different patterns in their pigmentation.

Synonyms
- Dermoscopy,
- epiluminescence microscopy,
- reflected light microscopy,
- skin surface microscopy.

Basic criteria of dermoscopy
Close examination of a pigmented lesion proceeds by degree:
1. study of the global aspects of the lesion, overall view
2. study of the specific local aspects, detailed view.

Global aspects
This refers to the overall structure of the lesion that can have different patterns:

Reticular pattern:
This is the most frequent global aspect of melanocytic lesions and is characterized by the presence in the growth of a set of thinner or thicker pigmented lines, generally brown, which crisscross each other to form a pigment network. This pattern is characteristic of the acquired melanocytic nevus and the lentigo.

Globular pattern:
This is characterized by the presence inside the lesion of numerous rounded or oval pigment structures varying from brown to gray-black in color. It is frequently found in the compound or dermal melanocytic nevus. The cobblestone pattern is similar to the globular one with the difference that the globules are larger.
Homogeneous pattern:
Characterized by the absence of the pigment network and by the presence of a diffused and rather homogeneous pigmentation, with color varying from brown to blue-gray and black. This pattern is found in:
- blue nevus (bluish color),
- nodular melanoma (black color),
- hemangioma (reddish-bluish coloring).

Starburst pattern:
Characterized by the presence of pigment streaks distributed radially to the border of the lesion with a fingerlike or drumstick appearance. This is found basically in the Reed-Spitz nevus and in melanoma.

Parallel pattern:
Found on the palms and soles and characterized by the arrangement of the pigment along the furrows and ridges. There are numerous morphological variations in relation to the specific local aspects. The parallel furrow pattern and its variations are found in benign melanocyte lesions. The parallel ridge pattern is typical of melanoma.

Polymorphous pattern:
Characterized by the presence of three or more dermoscopic structures (pigment network associated with an accumulation of globules with hyper-hypopigmented zones). This is found essentially in melanoma and in pigmented basal cell epithelioma.

Lacunar pattern:
A round or oval structure, with regular outline and reddish-bluish in color (red lacunae) in the absence of a pigment network. It is typical of hemangioma and angiokeratoma.

Aspecific pattern:
Generally found in non-pigmented growths and characterized by the absence of the patterns described above. It is found in amelanotic melanoma.

Local aspects:
After the first overall morphological approach careful observation of the local characteristics that make up a certain type of pattern allows for a better definition of the benign nature of the growth or else suspicion of a diagnosis of an atypical or malignant growth.

Pigment network:
In observing the pigmented lines that make up the network the pigment crisscrossing must be examined for color, thickness and location. This lets us understand if we have a typical crisscross (tight, equal meshing, with regular distribution in benign melanocyte growths) or an atypical mesh (darker, thicker and with irregular distribution in malignant growths).

Dots and globules:
Are pigment structures of different sizes, either round or oval, varying in color (black, brown, gray, blue, in relation to the epidermal-dermal location), with a regular distribution in the center of benign melanocytic growths and an irregular arrangement at the border in malignant growths.

Streaks and pseudopods:
Are linear pigmented structures, digitiform or bulbous, distributed radially and at the border, with a regular arrangement in benign melanocytic growths and an irregular and asymmetrical arrangement in malignant growths.

Diffused pigmentation:
This term is used to describe a hyperpigmented area, from brown to black, extend often within the entire lesion or else with a multifocal (blotches) or localized distribution. In benign melanocytic growths these blotches of pigmentation are localized in the center with even coloring and regular outlines while in malignant growths they often have an asymmetrical localization at the border and vary in color.

Hypopigmentation:
Represents in a pigmented growth a particular local aspect characterized by a decrease in or absence of pigment. These areas are usually located in the center with coloring similar to the peri-lesion skin in benign growths while in malignant ones they are found at the border and are generally lighter than the surrounding skin.

Regression structures:
This term includes different dermoscopic aspects characterized by pigment regression. Thus the whitish scar-like areas, an expression of dermal fibrosis, are frequently observed in melanoma with surface development while the gray-blue veil or the gray-blue areas, an expression of dermal fibrosis with hyperpigmented and melanophage melanocytes, are found more often in melanoma. This also includes peppering, a dermoscopic aspect characterized by numerous gray-blue dots in the regression area.

Blue-whitish veil:
Frequently observed in melanoma, with the hue varying from dirty white to light blue, it is made of hyperpigmented melanocytes in the dermis. It is also found in pigmented basal cell epithelioma.

Vascular structures:
Dermoscopic observation of the vessels allow us to distinguish different morphological aspects:
- comma vessels in the dermal nevus,
- wreathlike vessels in sebaceous hyperplasia,
- arborizing vessels in basal cell epithelioma,
- hairpin vessels with a whitish ring in growths with a keratinocyte origin (epithelioma, keratoacanthoma, actinic keratosis),
- hairpin vessels without the whitish ring and with an irregular shape in melanoma,
- dotted vessels in Spitz nevus, in actinic and seborrheic keratosis, but also in melanoma.

Dr. Valerio Cirfera
Specialist in Dermatology and Venereology
President CeSIDeL "Vanni Labrini"
Italian Center for Studies of Legal Dermatology