

Histopathology of the Skin

HISTOPATHOLOGY OF THE SKIN

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In Memory of My Father
DR. ALEXANDER LEVER
1877-1946
My First Teacher in Dermatology

Preface to the Third Edition

Numerous new observations have been made in the field of dermatopathology in the 7 years that have passed since the publication of the second edition of this book. This has necessitated a thorough rewriting. In the rewriting, histochemical findings have been given more space than previously because of their importance in understanding the histogenesis of many diseases.

The description of numerous diseases—for instance, of the deep fungal infections—has been rewritten almost completely because of important changes in the concept of their pathogenesis. Since publication of the last edition 10 new dermatologic entities with characteristic clinical and histologic manifestations have found general recognition and, consequently, have been included. They are subcorneal pustular dermatosis, alopecia mucinosa, elastosis perforans serpiginosa, lymphocytic infiltration of the skin, papulosis atrophicans maligna and the following types of tumors: warty dyskeratoma, keratoacanthoma, premalignant fibro-epithelial tumor, eccrine spiradenoma and eccrine poroma. Several previously known diseases have been incorporated because of their increased interest to dermatologists. Among them are erythema toxicum neonatorum, thrombotic thrombocytopenic purpura, lethal mid-line granuloma, South American blastomycosis and erythremic myelosis.

The bibliography following each chapter has been brought up to date. Forty-seven photomicrographs have been added, and 5 of the old photomicrographs have been replaced by better ones.

I am most grateful to Mr. Richard W. St. Clair for having produced the photomicrographs with his usual great skill. I also wish to thank Mr. Brooks Stewart, Medical Editor of J. B. Lippincott Company, for his help and co-operation.

WALTER F. LEVER

Preface to the First Edition

This book is based on the courses of dermatopathology which I have been giving in recent years to graduate students of dermatology enrolled at Harvard Medical School and Massachusetts General Hospital. The book is written primarily for dermatologists; I hope, however, that it may be useful also to pathologists, since dermatopathology is given little consideration in most textbooks of pathology.

I have attempted to keep this book short. Emphasis has been placed on the essential histologic features. Minor details and rare aberrations from the typical histologic picture have been omitted. I have allotted more space to the cutaneous diseases in which histologic examination is of diagnostic value than to those in which the histologic picture is not characteristic. In spite of my striving for brevity I have discussed the histogenesis of several dermatoses, because knowledge of the histogenesis often is of great value for the understanding of the pathologic process.

Primarily for the benefit of pathologists who usually are not too familiar with dermatologic diseases, I have preceded the histologic discussion of each disease with a short description of the clinical features.

A fairly extensive bibliography has been supplied for readers who are interested in obtaining additional information. In the selection of articles for the bibliography preference has been given, whenever possible, to those written in English.

I wish to express my deep gratitude to Dr. Tracy B. Mallory and Dr. Benjamin Castleman of the Pathology Laboratory at the Massachusetts General Hospital for the training in pathology they have given me. It has been invaluable to me. Their teaching is reflected in this book. Furthermore, I wish to thank Mr. Richard W. St. Clair, who with great skill and patience produced all the photomicrographs in this book.

WALTER F. LEVER

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Introduction

TECHNIC FOR BIOPSY

It is important to select a proper site for biopsy. In most instances, histologic examination of a fully developed lesion will give more information than examination of an early or an involuting lesion. An exception to this rule represents vesicular, bullous and pustular lesions. For their histologic examination, a very early lesion is required; otherwise, secondary changes (such as regeneration, degeneration or secondary infection) may obscure essential features and make recognition of their mode of formation impossible. Generally, it is inadvisable to include normal tissue in the biopsy specimen, unless a large specimen is taken or the physician personally supervises the processing of the specimen, because improper sectioning by the technician may result in only normal skin being seen in the section. The specimen should include subcutaneous fat, because, in many dermatoses, characteristic histologic features are found in the lower dermis or in the subcutaneous fat. If several types of lesions are present and the diagnosis hinges on the histologic findings, much time may be saved by taking specimens for biopsy from more than one lesion.

In the author's experience, a specimen obtained with a 6-mm. biopsy punch nearly always has proved to be adequate for histologic study. In many instances, a specimen obtained with even a 3- or a 4-mm. punch is adequate. After use of the 3-mm. punch, usually no suturing is required, an adhesive plaster to approximate the wound edges being sufficient; after use of the 4-mm. punch, one suture is adequate to close the wound; and after use of the 6-mm. punch, two sutures are recommended.

The specimen removed for biopsy should be placed on a piece of paper and smoothed out with gentle pressure so that it will not roll up. It should be allowed to dry onto the paper for about a minute and then placed in the fixative with the piece of paper attached to it.

As fixative, 10 per cent formalin can be used in nearly all instances (see p. 34). If any special stains are desired, this should be indicated at the time that the specimen is being sent to the laboratory. If, for instance, a stain for lipids is to be carried out, the

specimen must not be sent through the Autotechnicon (see Table 1, p. 35).

LIMITATIONS OF HISTOLOGIC DIAGNOSIS

Although histologic study is one of the most valuable means of diagnosis in dermatology, it has its limitations. Often, no definitive diagnosis can be made. The reason for this is that few dermatoses, aside from the tumors, are associated regularly with a diagnostic histologic picture. Instead, the histologic features may be merely suggestive of a diagnosis or may be entirely nonspecific. Even in the case of tumors, difficulties in diagnosis may arise. For instance, distinction of squamous-cell carcinoma from pseudocarcinomatous hyperplasia or from keratoacanthoma is not always possible. In cases of infectious granulomas, such as syphilis, tuberculosis and the deep mycoses, a specific diagnosis often cannot be made unless the causative organism can be demonstrated. Great difficulties may also be encountered in the histologic study of the large group of non-infectious inflammatory dermatoses. In some diseases of this group, such as psoriasis, lichen planus and lupus erythematosus, in which the histologic picture is diagnostic as a rule, it may be merely suggestive, especially in cases in which the clinical picture is not typical. In other diseases of this group, such as the various types of dermatitis or eczema, the histologic picture is, at best, only suggestive. In still others, such as pityriasis rosea and parapsoriasis, it is always nonspecific. Nevertheless, frequently, when the histologic picture is not diagnostic, correlation of the histologic with the clinical findings will make a diagnosis possible.

In many instances, the chief value of histopathologic study lies in corroborating the clinical diagnosis or in ruling out possible diseases that are being considered on the basis of clinical appearance. It is obvious that the histopathologist can give the clinician a maximum amount of information only if every specimen submitted for histologic diagnosis is accompanied by detailed clinical information, including a differential diagnosis.