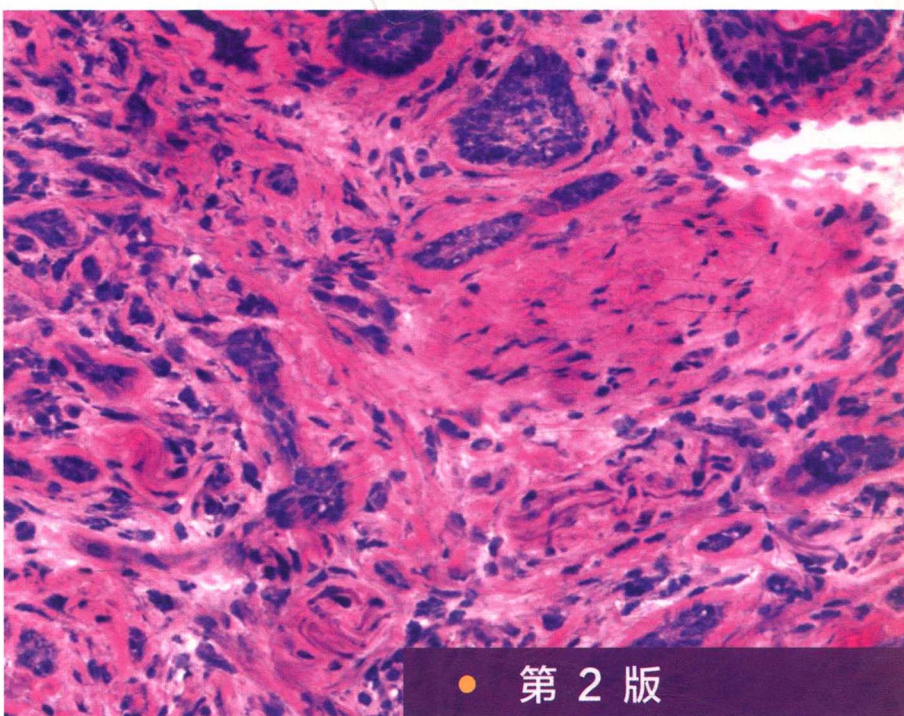


# MANUAL OF SKIN SURGERY

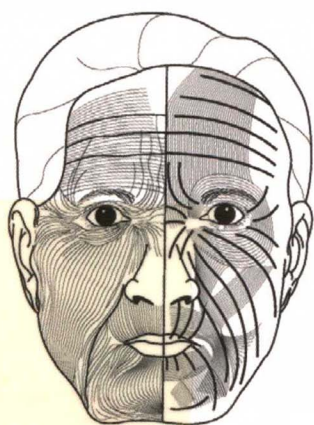
英文原版

## 皮肤外科手册：皮肤科治疗实践指导

*A Practical Guide to  
Dermatologic Procedures*



• 第 2 版



**DAVID J. LEFFELL**

MARC D. BROWN



人民卫生出版社  
PEOPLE'S MEDICAL PUBLISHING HOUSE





英文原版

# MANUAL OF SKIN SURGERY

---

## A Practical Guide to Dermatologic Procedures

## 皮肤外科手册：皮肤科治疗实践指导

第2版

**David J. Leffell, M.D.**

David Paige Smith Professor of Dermatology, Plastic Surgery  
and Otolaryngology

Chief, Section of Dermatologic Surgery and Cutaneous Oncology

Department of Dermatology

Yale University School of Medicine

New Haven, Connecticut

**Marc D. Brown, M.D.**

Professor of Dermatology

University of Rochester Medical Center

Rochester, New York



人民卫生出版社

PEOPLE'S MEDICAL PUBLISHING HOUSE

English reprinted edition of MANUAL OF SKIN SURGERY: A Practical Guide to Dermatologic Procedures, 2nd edition by David J. Leffell and Marc D. Brown

The original English language work has been published by People's Medical Publishing House-USA, Ltd.

© 2011 PMPH-USA, Ltd.

Reprinted by People's Medical Publishing House

© 2017 People's Medical Publishing House

Beijing, China

### 图书在版编目 (CIP) 数据

皮肤外科手册: 皮肤科治疗实践指导 = MANUAL OF SKIN SURGERY: A Practical Guide to Dermatologic Procedures, 2/e: 英文 / (美) 大卫·J. 莱费尔 (David J. Leffell) 主编. —北京: 人民卫生出版社, 2017

ISBN 978-7-117-25841-8

I. ①皮… II. ①大… III. ①皮肤病-外科学-手册-英文 IV. ①R751.05-62

中国版本图书馆CIP数据核字 (2017) 第312621号

人卫智网	<a href="http://www.ipmph.com">www.ipmph.com</a>	医学教育、学术、考试、健康, 购书智慧智能综合服务平台
人卫官网	<a href="http://www.pmph.com">www.pmph.com</a>	人卫官方资讯发布平台

版权所有, 侵权必究!

皮肤外科手册: 皮肤科治疗实践指导 (英文版)

主 编: David J. Leffell

出版发行: 人民卫生出版社 (中继线 010-59780011)

地 址: 北京市朝阳区潘家园南里 19 号

邮 编: 100021

E - mail: [pmph@pmph.com](mailto:pmph@pmph.com)

购书热线: 010-59787592 010-59787584 010-65264830

印 刷: 北京汇林印务有限公司

经 销: 新华书店

开 本: 710×1000 1/8 印张: 25.5

字 数: 404 千字

版 次: 2017 年 12 月第 1 版 2017 年 12 月第 1 版第 1 次印刷

标准书号: ISBN 978-7-117-25841-8/R · 25842

定 价: 262.00 元

打击盗版举报电话: 010-59787491 E-mail: [WQ@pmph.com](mailto:WQ@pmph.com)

(凡属印装质量问题请与本社市场营销中心联系退换)

*To our wives, Cindy and Susan, and  
to our children,  
Alexander and Dahlia,  
and  
Marian and David*



# Preface to the Second Edition

---

It has been 15 years since *Manual of Skin Surgery* was originally published. At that time dermatologic surgery as a subspecialty of dermatology had developed its sea-legs, and dermatology residency programs throughout the country were including skin surgery as a critical component of the curriculum. In the intervening period, interest in therapeutic and cosmetic skin surgery has grown enormously. Diagnosis and management of skin cancer has expanded with the incidence of the disease in the population. Care of skin disease is not limited to dermatologists but of necessity is practiced by a range of physicians and care providers: family practice doctors, internists, plastic surgeons, general surgeons, and others. One important change in the delivery of clinical care has been the increasing role of physician assistants and associates in the office practice of dermatology and related fields. The information in this book should be of interest to this expanding and important group of care providers.

When we wrote the manual in 1997 we intended for it to be a practical guide to the fundamentals of dermatologic surgery. To the extent that it focuses on essential elements of the field, the content remains the same. We have updated where necessary but believe that the book continues to be a resource that is accessible and usable. We hope it serves its purpose in helping you develop and improve your skin surgery skills.



# Preface to the First Edition

---

At a time when the medical marketplace is inundated with textbooks on all aspects of health care, one might ask how a new volume on a well-known subject can be justified. In surveying the literature in dermatology, it is clear that the expanding field of dermatologic surgery is probably not comprehensively served at the introductory level. Specifically, there is no single volume which, in a brief and graphically engaging fashion, provides essential information necessary to develop skills in basic skin surgery.

Skin surgery, in its broadest sense, is a discipline that transcends specialties. Primary-care physicians—including general practice physicians; internists; pediatricians and dermatologists; ear, nose, and throat surgeons; plastic surgeons; general surgeons; and others—all perform skin surgery. The skin is the most accessible organ and therefore the one that is most readily operated upon when needed.

The purpose of this book is to consolidate in one location the best practical teaching that is available regarding excisional cutaneous surgery. It is written from the vantage point of the authors who are schooled in dermatology. Our perspective on surgery of the skin is necessarily different from that of individuals raised in the surgical specialties. However, cutaneous surgery represents a substantial component of any dermatologist's practice, and dermatology has been a growing surgical specialty for many years. It is in this context that dermatologists have combined their special knowledge of the biology and pathology of the skin and their surgical skills to allow for conservative, reasoned, and efficient surgical procedures.

Because dermatology is primarily an office-based specialty, we are able to present to you information in this text that will allow you to become an efficient office skin surgeon. In this era of constrained medical resources, when every government agency is clamoring for more efficient office-based care, we believe that this book can serve as your passport to that world of medicine that is increasingly in demand. We have attempted to make the information in this book lively, easy to read, and easy to reference in an ongoing fashion. Much of the scientific basis of the knowledge presented here is available elsewhere. This book is intended to be a very practical "how-to" manual and presumes the reader is knowledgeable in the substantiating science.

In many ways, this book represents the culmination of one aspect of our professional development. We would like, therefore, to thank one individual who played a very special role in that process.



Neil A. Swanson, M.D., chairman of dermatology at the University of Oregon, trained both of us in surgical dermatology in the late 1980s. He is not only a superb teacher and devoted mentor, but an individual with whom we have developed a long, close, and rewarding relationship. Were we not married with families, we would have dedicated this book to him. We urge you to review his *Atlas of Cutaneous Surgery* as it was the first to present a systematic method for learning procedures described in this book. In addition, the texts by Bennett and by Salasche are landmarks in defining the specialty of cutaneous surgery. The authors have graciously given permission for us to use many of their figures in this book, and for this we thank them.

This volume represents the information we have developed and passed on to medical students, residents, and other physicians who have been interested in learning approaches to skin surgery. The elliptical excision is the workhorse of skin surgery and is the central focus and *raison d'être* of this text. Some basic diagnostic information is provided and anatomy is briefly reviewed in a very pragmatic fashion. Patient preparation, surgical suite set-up, wound care, and complications are all addressed in the context of the fusiform excision. The principles that underly this ubiquitous procedure are applicable both to advanced procedures like flaps and grafts and to simpler procedures like skin biopsy.

We hope that you will find the information in this text helpful and that it will allow you to progress with skin surgery to a rewarding degree. Please communicate with us any suggestions regarding improvements or changes.

DAVID J. LEFFELL, M.D.  
*New Haven, Connecticut*  
MARC D. BROWN, M.D.  
*Rochester, New York*

# Acknowledgments

---

In our chapters, we repeatedly emphasize the importance of attending to all the patient's needs. Although some would consider skin surgery relatively minor, the degree of anxiety that patients have highlights the importance of listening to the patient and addressing all concerns. No individuals have been better teachers in this regard, nor better colleagues, than the nurses and staff with whom we have had the good fortune to work over the years. To see a list of our staff at Yale go to <http://dermatology.yale.edu/dermsurg/patient/administration.aspx>

This book was written for the student, resident, and physician who would like to explore excisional skin surgery. It is to our students, residents and fellows that we owe a special debt of appreciation. Through ongoing inquiry and curiosity, and a refusal to accept our teaching as dogma, our residents keep us honest and force us always to question our assumptions. Our personal appreciation is also due to the many dermatologists, surgeons, and primary care physicians of Connecticut, upstate New York, and the surrounding regions, who, through their kind referral of patients, have made it possible for us to care for them, and teach additional generations of physicians.





# **Manual of Skin Surgery**

# Contents

---

**Preface to the Second Edition ix**

**Preface to the First Edition xi**

**1 Introduction 1**

**2 Diagnosis 3**

Defining the Lesion 3

Studying the Lesion 11

Common Skin Lesions 12

**3 Practical Anatomy 23**

Relaxed Skin Tension Lines 24

Regional Considerations 26

Superficial Anatomy 30

**4 Wound Healing 39**

Phases 39

**5 Skin Biopsy 47**

Incisional versus Excisional Biopsy 47

Shave Biopsy 48

Curette Biopsy 52

Scissors Biopsy 55

Punch Biopsy 55

Excisional Biopsy Technique 58

Special Considerations 58

Biopsy Record Keeping 64

**6 Local Anesthesia 65**

Chemistry and Classification 65

Local Additives 66

Allergic Reactions 67

Adverse Effects and Drug Interactions 68

Local Anesthesia Technique 68

Topical Anesthesia 72

Tumescent Anesthesia 74

**7 Surgical Instruments 75**

Scalpels 75

Needle Holders 77

Forceps 80

Skin Hooks 81

Hemostats 82

Scissors 83

Curette 84

Miscellaneous Instruments 85

Instrument Care 86

The Surgical Suite 87

**8 Wound Closure**

**Materials 91**

Absorbable Sutures 93

Nonabsorbable Sutures 95

Needles 96

Staples 98



## **9 Patient Preparation 99**

Indications 99  
Medical History 100  
Patient Evaluation 102  
Prophylaxis 105  
Pacemakers 106  
Blood Thinners 107  
Dressings 108

## **10 Basic Excisional Surgery 111**

Planning the Excision 111  
Marking the Lesion 112  
The Ellipse 113  
Anesthesia 114  
Drape and Preparation 115  
Procedure 116  
Wound Closure 121  
Lazy S Repair 130

## **11 Surgical Complications 137**

Bleeding 137  
Infection 143  
Necrosis 147  
Dehiscence 148  
Other Postoperative Problems 149

## **12 Special Topics in Dermatologic Surgery 155**

Melanoma 155  
Lentigo Maligna 157  
Nevi 158  
Skin Cancer 158  
Mohs Surgery 160  
Cysts 162  
Keloids and Scars 163  
Lipomas 164  
When to Refer 164

## **13 Risk Management 167**

Informed Consent 167  
Documentation 169  
Confidentiality 171

## **Appendix I Action Guides 173**

Skin Biopsy 174  
Pigmented Lesions 175  
Basal Cell Cancer 176  
Squamous Cell Cancer 177  
Complications 178

## **Appendix II Vendors for Dermatologic Surgery Suite 179**

## **Index 181**

# Introduction

C H A P T E R

# 1

As the population ages, the incidence of dermatologic disease requiring surgical intervention increases. For example, the incidence of malignant melanoma, a cancer easily treated in the office in its early stages, rose from 13.2 per 100,000 in 1991 to 20.1 per 100,000 based on 2004–2007 SEER data. Although the disease affects younger people to an increasing degree, malignant melanoma is still a cancer of older patients. It is estimated that in 2010 there will be approximately 68,720 new cases of melanoma and over 8650 deaths from the disease. The incidence of non-melanoma skin cancer (basal cell cancer and squamous cell cancer) is estimated at 3,500,000 cases annually. The management of melanoma, nonmelanoma skin malignancies, and benign tumors of the skin will continue to fall to the dermatologist and other office-based physicians who can provide surgical services in the most cost-effective fashion. For these reasons, there is an almost unquenchable thirst for information on how to perform office skin surgery safely, effectively, creatively, and most importantly, competently. It is quite likely that in the United States, health insurance reform will continue to drive cost-efficient practice and quality. Office-based dermatologic surgery is especially suited to achieve both goals.

This volume has two modest purposes: first, to teach the elements of excisional skin surgery in a practical fashion to the medical student, resident, and practicing physician; and second, to convey subtleties of the field of cutaneous surgery that are already known to serious practitioners of the art. To achieve this end, the book has been structured in a relatively traditional fashion but includes technical sidebars known as “pearls.” These pearls are really helpful tips and tricks of the trade that have become part of the oral tradition of dermatologic surgeons. We hope you will find it possible to pick up this book even for a moment and come away with information about excisional surgery that will enhance the care of your patients. Initial chapters on diagnosis, pertinent anatomy (which is always hard to make exciting), and wound healing give way, in logical sequence, to chapters including perioperative preparation and assessment, operative technique, and postoperative care.



While this book is primarily about technique and is intended to allow you to get up to speed quickly, dermatology has always been more global than just a therapeutic or diagnostic specialty. What distinguishes dermatologic surgery from its close cousins such as plastic surgery is the special emphasis placed on diagnosis and an understanding that the procedure performed on the patient depends on the clinical diagnosis. For this reason, a richly illustrated chapter on diagnosis is included. It concentrates on those conditions amenable to surgical intervention.

In this day and age of specialization, as a host of procedures now reflect back on the office-based physician, it is time to consolidate those aspects of technique and care that specialists have perfected for the benefit of the patient through their commitment, skills of observation, and creativity. A section on special topics in dermatologic surgery includes a practical guide to the management and workup of melanoma, the indications for Mohs surgery, and the approaches to common dermatologic ailments that have surgical solutions. In the appendix, clinical pathways are provided as flow diagrams to help you approach each clinical situation in a comprehensive and efficient fashion.

We hope that this manual will serve as a repository of information that is truly new to the reader and of great practical help. In the end, this book aims to improve the care you provide to your patients. As more and more is required of all physicians, we must become more demanding about our sources of information. This manual seeks to provide all that is good in dermatologic surgery, but it is important to attend courses on continuing medical education and, ideally, to study in the office or surgery suite along with experienced dermatologic surgeons. Our field is a peripatetic one: we borrow techniques, knowledge, and our understanding of the biologic processes from all quarters of the expansive field of medicine. Each time we operate on a patient, we rely on new information developed by basic scientists, clinical researchers, and biomedical engineers. Importantly, surgery of the skin is the domain of no one specialty. It is the province of the skilled practitioner whether a dermatologist, family physician, plastic surgeon, or general surgeon.

As you proceed to develop skill and judgment in excisional dermatologic surgery, it is essential to remember always that the patient comes first. Whatever the distractions of modern daily practice, whatever the disappointments and frustrations of practice administration, whatever the stresses of fear of litigation, and whatever the concerns about the future of your professional life, you will be an excellent surgeon if you are first a superb doctor.

There is no doubt that skill can vary substantially from physician to physician. Surgical success in particular is dependent on a range of factors including hand-eye coordination, dexterity, ability to handle tissue, and most importantly and beyond our control, the native healing tendencies of the patient. The most critical factors for successful practice in office surgery, as in every other aspect of medicine, are judgment and availability. Beyond that, compassion, empathy, and the ability to put yourself in the patient's position while he or she is in your office is what will distinguish the reader of this book from his or her colleagues.

Our goal has been to help you build a solid foundation in the pursuit of clinical excellence in an exciting and fulfilling branch of dermatology. We hope we have done that challenge justice.

The skills of skin surgery are geared to two specific goals: first, the accurate diagnosis of specific skin lesions, and second, the treatment when necessary of those particular skin lesions. To develop optimal surgical skills, it is important to have a thorough understanding of the terminology, microscopic and clinical presentation, and behavior of the skin lesions you are likely to see in practice.

Historically, dermatology was a field that relied heavily on the descriptive strength of Latin. Often it was alleged that the complexity of the language was merely a veil that concealed our lack of understanding of the diseases so described. In fact, the science of dermatology has progressed substantially in the past 20–30 years, but the language or “lexicon” of dermatology remains firmly planted in its Latin roots. It is critical in our conversations with colleagues that we are certain we are all speaking the same language. In this chapter, we review terminology and provide clinical examples of the common lesions that you are likely to encounter. Often the biopsy technique and treatment you select will depend on your appraisal of the lesion under consideration.

## DEFINING THE LESION

All skin lesions have specific correlates with microscopic depth. An image of the microscopic cutaway of the skin is important to keep in mind as the terminology used to describe lesions is approached (Figure 2-1). For descriptive purposes, lesions are either confined to the epidermis, extend into the dermis, or involve the subcutis (fat). Following are the basic descriptive terms used in dermatology accompanied by clinical examples.

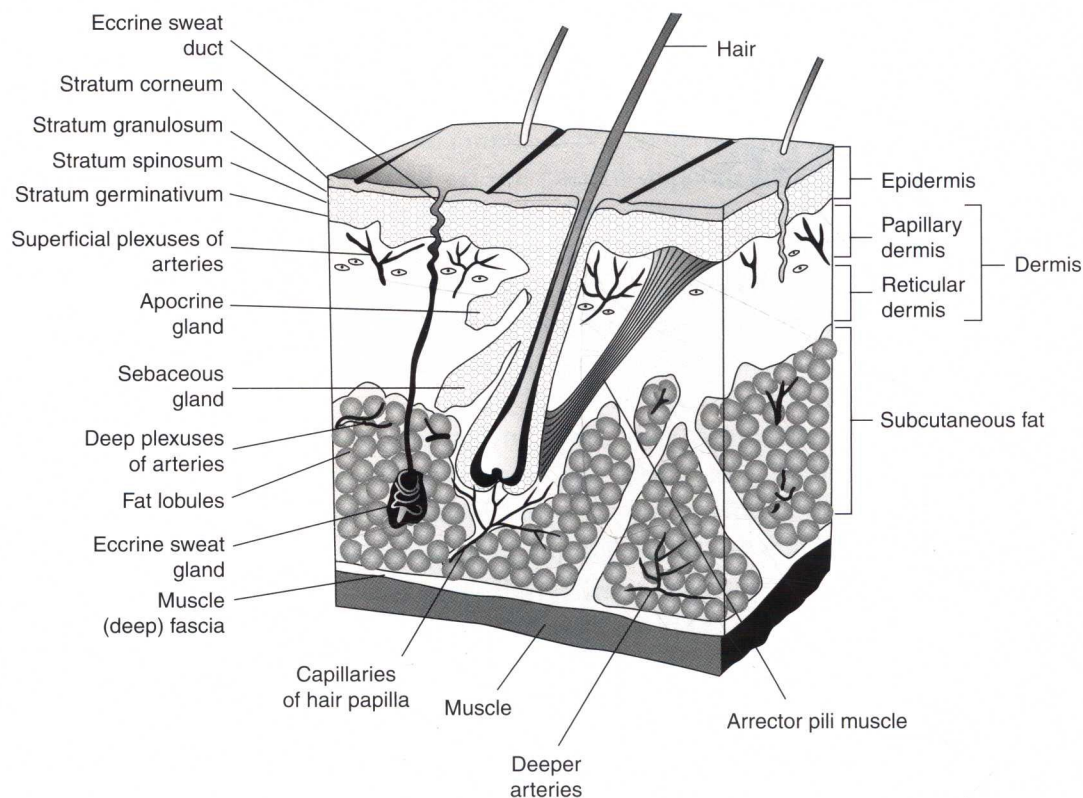
**MACULE.** A small flat skin lesion that is observed (but not felt) because of a color change and is usually less than 1 cm in largest diameter. An example is a sun spot (Figure 2-2).

*Brown macules.* Actinic lentigo, lentigo maligna, Becker’s nevus, cafe au lait spot, lentigo, nevi, freckle, melasma.



### FIGURE 2-1. Skin Cross Section

The skin represents a complex multilayer structure organized to permit rapid and effective healing upon injury. The epidermis consists of a layer of basal cells that give rise sequentially to more squamous-appearing cells. The horny layer of the epidermis represents dead keratinized cells and keratin, a protein product of squamous cells. The vascular supply of the skin terminates in fine capillaries that perforate the papillary dermis and supply the complete organ.



### FIGURE 2-2. Solar Lentigo

Some of the solar lentigos on the forehead of this elderly man represent macules. They are variegated in color and flush with the surrounding skin. Macules are generally smaller than 1 cm. These are distinct from patches which are larger than 1 cm and are flat.





*Brown macules on palms and soles.* Acral lentiginous melanoma, junctional nevus, talon noir (Figure 2-3).

*Hypopigmented macules.* Vitiligo, halo nevus (Figure 2-4), postinflammatory hypopigmentation. This latter entity is important to recognize as it may develop following various surgical interventions.

*Blue macules.* Mongolian spot, nevus of Ota (Figure 2-5) or Ito—these are congenital. Acquired conditions: blue nevus, malignant melanoma, tattoo.

*Red macules.* Usually represent exanthems and are not pursued surgically except for biopsy or if they represent precancerous lesions.

**PATCH.** A macule greater than 1 cm.

**PAPULE.** A lesion that is raised above the surface of the skin, usually less than 1 cm.

**PLAQUE.** A papule greater than 1 cm. The surface may be smooth or irregular (Figure 2-6).

*Flesh-colored papules.* Nevi (Figure 2-7) skin tags, condyloma (Figure 2-8), comedone, molluscum contagiosum, basal cell cancer, keloids, warts, pigmented basal cell carcinomas.

*Brown papules.* Nevi, seborrheic keratoses (Figure 2-9), inflamed seborrheic keratosis (Figure 2-10), dermatofibroma, malignant melanoma (note that a melanoma can be a flat macule or a raised papule or nodule).

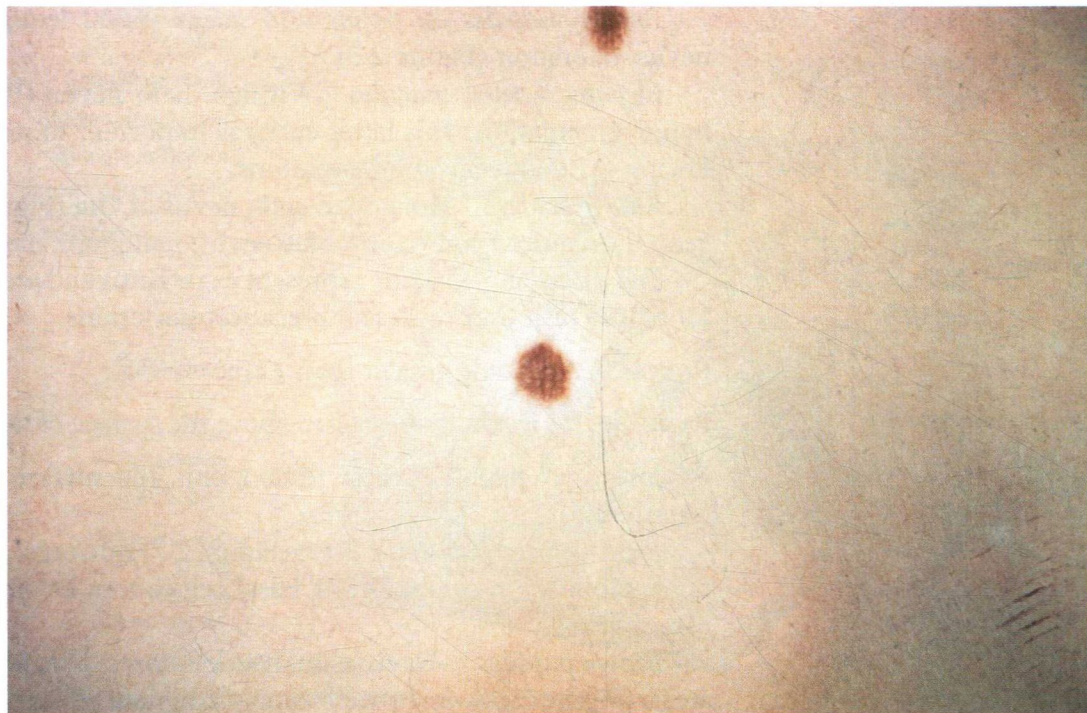
### FIGURE 2-3. Talon Noir

Black nail must raise the suspicion of melanoma. The majority of talon noir are secondary to trauma and represent the by-products of the degradation of extravasated blood.



**FIGURE 2-4. Halo Nevus**

This benign nevus is characterized by central pigmentation surrounded by an area of depigmentation. It may be considered a variegated pigmented macule. Its significance lies in the fact that the area of depigmentation most likely represents an inflammatory reaction by the body in an attempt to destroy nevus cells that may be transforming. Note the superior normal-appearing nevus lacks the halo.



**FIGURE 2-5. Nevus of Ota**

Diffuse pigmentation is represented and is best described as a patch of pigmentation. The color is slate gray.

