
**Cancer
Dermatology**

Frederick Helm

003503

R_{739.5}
15

Cancer Dermatology

Frederick Helm, M.D., F.A.C.P., F.R.C.P. (C)

Assistant Clinical Professor in Medicine (Dermatology),

State University of New York at Buffalo;

Chief, Dermatology Section,

Millard Fillmore Hospital;

Cancer Research Dermatologist, Department of Dermatology,

Roswell Park Memorial Institute,

Buffalo, New York



Lea & Febiger • Philadelphia 1979

Library of Congress Cataloging in Publication Data

Main entry under title:

Cancer dermatology.

Bibliography.

Includes index.

1. Skin—Cancer. 2. Dermatology. I. Helm, Frederick. [DNLM: 1. Skin neoplasms.
WR500 C213] RC280.S5C34 1979 616.9'94'77 78-10586
ISBN 0-8121-0602-4

Copyright © 1979 by Lea & Febiger. Copyright under the International Copyright Union.
All rights reserved. This book is protected by copyright. *No part of it may be reproduced
in any manner or by any means without written permission from the publisher.*

Published in Great Britain by Henry Kimpton Publishers, London

PRINTED IN THE UNITED STATES OF AMERICA

Print number: 3 2 1

Cancer Dermatology

Dedication

With great admiration and affection this book is dedicated to the memory of my parents and of Herbert L. Traenkle, who for many years was Chief of the Department of Dermatology at Roswell Park Memorial Institute in Buffalo, and the major source of inspiration for this book. He was not only a dedicated physician and scientist and an excellent teacher, but also a dear friend.

Foreword

This collective effort was undertaken by members and former members of the medical staff of the Roswell Park Memorial Institute to make available a clinical guide to aid in the diagnosis and treatment of the malignant diseases afflicting the human integument. This is not intended to be a textbook, nor an encyclopedic work restricted to the reference library, but rather a concise manual to be readily available and easily used when needed.

However, even on the most pragmatic level, merely didactic methodology is not enough. Our concern must include concepts, no matter how briefly stated. Thus condensed discussions of the various facets of such large complex fields of inquiry as carcinogenesis, brief descriptive profiles of the more important cutaneous neoplasms, and consideration of neoplasms of other organs that invade or influence the skin are provided to help the therapist attain understanding as well as skill. To extend the horizon further, most of the chapters present carefully selected references for the reader who wishes to probe deeper and more broadly.

Part III is essentially a descriptive summary of the actual techniques used by

each member of a team composed of different specialties working in our busy cancer clinic. The unusual opportunity for cooperative and easy exchange of consultations among the various specialists, dermatologists, radiologists, surgeons, chemotherapists, pathologists, cytologists, and others have been a catalyst of incalculable value in potentiating the very rich personal experience of the individual therapist. This is transmitted not only into better patient care, but also into better research.

In any undertaking of multiple authorship, some overlap of discussion is inevitable. On the other hand, this very feature has the advantage of bringing into focus differences of emphasis from the perspective of more than one area of interest.

It is hoped that this book will fulfill the expectation of the reader by expanding his awareness of diagnostic possibilities and helping him weigh the advantages and disadvantages of available therapeutic options, as well as provide some guidance in the employment of the modality he has chosen.

The editor is to be commended on the judicious selection of topics, which for the most part encompass the whole spectrum of cancer dermatology.

GERALD P. MURPHY, M.D., D.S.C.
Director
Roswell Park Memorial Institute

Preface

More malignant neoplasms occur on the skin of man than on any other anatomic site. It is estimated that from 300,000 to 600,000 skin cancers develop each year in the United States alone. The skin is a site most amenable to therapy; however, an accurate diagnosis and a proper assessment of the circumstances are necessary. In addition, neoplasms on the skin can serve as a model system because of their accessibility and thereby increase our knowledge about the broader aspects of tumor biology.

This book stresses a team approach to the management of skin cancer. As practiced at Roswell Park Memorial Institute in Buffalo, the concept has worked well for both the patient and the physician. Access to immediate consultation with all specialties concerned in the treatment of cancer (dermatology, pathology, plastic surgery, radiology, and oncology) not only helps to quickly establish a diagnosis, but also to outline a plan of early treatment. The dermatologist has a great advantage, in that he is not only trained to make a correct diagnosis based on the clinical appearance and histologic examination, but he is also acquainted with all treatment modalities, without necessarily using them himself. Therefore without bias, he is better qualified to refer patients for the appropriate therapy.

Buffalo, New York FREDERICK HELM, M.D.

Acknowledgments

A considerable amount of work went into the writing of this book. Without the cooperation of all the co-authors and the publisher, we would not have been able to complete the task. It is a pleasure to acknowledge the assistance of many colleagues, especially Dr. Thomas Butterworth, Dr. Untae Kim, Dr. Alfred W. Kopf, and Dr. Howard L. Stoll, Jr., who helped with advice and criticism in the preparation of the manuscript. Dr. Ole A. Holterman, Chief, Department of Dermatology, Roswell Park Memorial Institute, gave me a great deal of encouragement and without his generous support this book could not have been written.

I also wish to express my appreciation for the technical assistance and secretarial efforts of many persons.

All pictures, when not otherwise marked, are from the collection of the Department of Dermatology at Roswell Park Memorial Institute, Buffalo, New York.

Contributors

A. Bernard Ackerman, M.D.
Professor of Dermatology and Pathology and
Director of Dermatopathology,
New York University School of Medicine;
Consultant Dermatopathologist, Department of
Pathology,
Memorial Sloan-Kettering Cancer Center,
New York, New York.

Stevan Adler, M.D.
Assistant Staff, Department of Medicine
Section on Oncology,
Morristown Memorial Hospital,
Morristown, New Jersey.

Pierluigi E. Bigazzi, M.D.
Associate Professor of Pathology,
Department of Pathology,
University of Connecticut Health Center,
Farmington, Connecticut.

Fred G. Bock, Ph.D.
Director, Orchard Park Laboratories,
Roswell Park Memorial Institute,
Buffalo, New York.

Gordon H. Burgess, M.D.
Assistant Clinical Professor of Dermatology,
School of Medicine,
State University of New York at Buffalo;
Cancer Research Dermatologist, Department of
Dermatology,
Roswell Park Memorial Institute,
Buffalo, New York.

Peter M. Calamel, M.D.
Associate Chief,
Department of Head and Neck and Reconstructive
Surgery,
Roswell Park Memorial Institute;
Attending Surgeon, Buffalo General Hospital and
Kenmore Mercy Hospital, Buffalo, New York;
Clinical Associate Professor in Plastic Surgery,
University of Rochester School of Medicine and
Dentistry,
Rochester, New York.

William Carl, D.D.S.
Associate Professor of Fixed Prosthetics,
School of Dentistry,
State University of New York at Buffalo;
Senior Cancer Dental Surgeon
Department of Dentistry and Maxillofacial
Prosthetics,
Roswell Park Memorial Institute,
Buffalo, New York.

The Reverend Paul N. Carnes, D.D.
President, Unitarian Universalist Association of
North America, Boston, Massachusetts.

Richard C. Connors, M.D.
Clinical Instructor in Dermatology,
New York University School of Medicine;
Assistant Physician, Department of Dermatology,
New York University Medical Center, New York.

John T. Crissey, M.D.
Associate Professor of Dermatology,
School of Medicine,
University of Southern California,
Los Angeles, California.

Mukund S. Didolkar, M.D., M.S.
Assistant Professor of Surgery,
University of Maryland;
Attending Surgeon and Surgical Oncologist,
University of Maryland Hospital,
Baltimore, Maryland.

Richard L. Dobson, M.D.
Professor and Chairman, Department of
Dermatology,
School of Medicine,
State University of New York at Buffalo;
Head, Department of Dermatology,
Buffalo General Hospital
and E. J. Meyer Memorial Hospital,
Buffalo, New York.

Rafael Fleminger, M.D.
Department of Oncology,
Beilinson Hospital,
Petah-Tikwa, Israel.

Moshe Friedman, M.D.
Associate Clinical Professor, Department of
Radiology,
School of Medicine,
State University of New York at Buffalo;
Associate Chief, Department of Radiation Therapy,
Roswell Park Memorial Institute,
Buffalo, New York.

John F. Gaeta, M.D.
Associate Clinical Professor of Pathology,
School of Medicine,
State University of New York at Buffalo;
Head, Surgical Pathology,
Buffalo General Hospital,
Buffalo, New York.

Maria C. Gamarra, M.D.
Assistant Clinical Professor,
School of Medicine,
State University of New York at Buffalo;
Head, Cytopathology Section, Department of
Pathology,
Roswell Park Memorial Institute,
Buffalo, New York.

Kenneth Hashimoto, M.D.
Professor of Dermatology and Anatomy,
Wright State University School of Medicine;
Chief, Section of Dermatology,
Veterans Administration Hospital,
Dayton, Ohio.

Frederick Helm, M.D.
Assistant Clinical Professor of Medicine
(Dermatology),
State University of New York at Buffalo;
Chief, Dermatology Section,
Millard Fillmore Hospital;
Cancer Research Dermatologist, Department of
Dermatology,
Roswell Park Memorial Institute,
Buffalo, New York.

Juta Helm, M.D.
Dermatologist,
Buffalo, New York.

Karl Holubar, M.D.
Professor of Dermatology,
University of Vienna, Austria.

Blair V. Jager, M.D.
Senior Cancer Research Fellow,
Roswell Park Memorial Institute,
Buffalo, New York.

Edmund Klein, M.D.
Associate Chief, Department of Dermatology,
Roswell Park Memorial Institute;
Research Professor of Medicine (Dermatology),
State University of New York at Buffalo;
Research Professor of Experimental Pathology,
State University of New York at Buffalo;
Director, Tumor Immunology Treatment and
Research Center,
Roswell Park Memorial Institute;
Member, The Center for Immunology,
State University of New York at Buffalo,
Buffalo, New York;
Guest Professor of Biomedical Engineering,
Northeastern University,
Boston, Massachusetts.

Msgr. Dino J. Lorenzetti
Pastor, Our Lady of Sacred Heart Church
Orchard Park, New York;
Spiritual Advisor,
The National Federation of Catholic Physicians'
Guilds;
Ecclesiastical Assistant, Federation Internationale de
Associations Medicales Catholiques.

Peter J. Lynch, M.D.
Professor and Chief, Division of Dermatology and
Associate Head, Department of Internal Medicine,
University of Arizona Health Sciences Center,
Tucson, Arizona.

Bernard F. McEvoy, M.D.
Assistant Clinical Professor of Dermatology,
Albany Medical College,
State University of New York at Albany;
Assistant Attending Dermatologist,
Albany Medical Center Hospital,
Albany, New York;
Attending Physician, Ellis Hospital and St. Clare's
Hospital;
Consultant, Bellevue Maternity Hospital,
Schenectady, New York;
Sunnyview Hospital and Rehabilitation Institute and
St. Mary's Hospital,
Amsterdam, New York.

John C. Maize, M.D.
Associate Clinical Professor of Dermatology,
School of Medicine,
University of New York at Buffalo,
Buffalo, New York.

Halina Milgrom, M.D.
Cancer Research Dermatologist,
Roswell Park Memorial Institute,
Buffalo, New York.

Walter T. Murphy, M.D.
Emeritus Clinical Professor of Radiology,
School of Medicine,
State University of New York at Buffalo;
Clinical Professor of Radiology,
University of Miami, Florida;
Consultant in Radiation Oncology,
Roswell Park Memorial Institute,
Buffalo General Hospital,
and E. D. Meyer Memorial Hospital,
Buffalo, New York;
Jackson Memorial Hospital,
Miami, Florida.

Sigmund H. Nadler, M.D.
Assistant Clinical Professor of Surgery,
School of Medicine,
State University of New York at Buffalo,
Buffalo, New York.

Suwapang Pattummadith, M.D.
Clinical Fellow, Department of Dermatology,
Roswell Park Memorial Institute,
Buffalo, New York.

John I. Pearce, M.S.
Research Associate, State University of New York at
Buffalo;
Radiation Physicist, Department of Radiation
Medicine,
Roswell Park Memorial Institute,
Buffalo, New York.

John T. Phelan, M.D.
Associate Professor of Surgery,
School of Medicine,
State University of New York at Buffalo;
Associate Chief Cancer Research Clinician,
Roswell Park Memorial Institute,
Buffalo, New York.

James E. Rasmussen, M.D.
Associate Professor of Dermatology,
School of Medicine,
State University of New York at Buffalo;
Director, Department of Dermatology,
Children's Hospital,
Buffalo, New York.

Kumao Sako, M.D.
Assistant Research Professor of Surgery,
School of Medicine,
State University of New York at Buffalo;
Associate Chief, Department of Head and Neck
Surgery and Oncology,
Roswell Park Memorial Institute,
Buffalo, New York.

Howard L. Stoll, Jr., M.D.
Associate Clinical Professor of Dermatology,
School of Medicine,
State University of New York at Buffalo;
Associate Chief, Department of Dermatology,
Roswell Park Memorial Institute,
Buffalo, New York.

Leon Stutzman, M.D.
Research Professor of Medicine,
School of Medicine,
State University of New York at Buffalo;
Associate Chief, Department of Medicine,
Roswell Park Memorial Institute,
Buffalo, New York.

Herbert L. Traenkle, M.D.†
Former Associate Clinical Professor of Dermatology,
School of Medicine,
State University of New York at Buffalo;
Former Acting Chief, Department of Dermatology,
Roswell Park Memorial Institute,
Buffalo, New York.

Josef Vana, M.D., Ph.D.
Associate Research Professor, School of Medicine,
State University of New York at Buffalo;
Head, Department of Epidemiology,
Roswell Park Memorial Institute,
Buffalo, New York.

Robert H. Wood, D.D.S.
Assistant Professor, Department of Fixed
Prosthodontics,
School of Dentistry,
State University of New York at Buffalo;
Dental Consultant, Department of Dentistry and
Maxillofacial Prosthetics,
Roswell Park Memorial Institute,
Buffalo, New York.

†Deceased.

Contents

PART I. ETIOLOGY OF NEOPLASMS OF SKIN

1. Epidemiology	3
Josef Vana	
2. Carcinogenesis	
1. Clinical Carcinogenesis	17
Richard L. Dobson	
2. Experimental Carcinogenesis	20
Fred G. Bock	
3. Epithelioma from Single Trauma	25
Howard L. Stoll, Jr., and John T. Crissey	
4. Late Radiation Injury and Cutaneous Neoplasia ...	31
Herbert L. Traenklet†	
5. Genodermatoses Associated with Malignancies ...	39
Bernard F. McEvoy	

PART II. NEOPLASMS OF THE SKIN

6. Precancerous Lesions	59
John C. Maize and James E. Rasmussen	
7. Intraepidermal Epithelioma of Borst and Jadassohn	81
Karl Holubar	
8. Basal Cell Epithelioma	91
Gordon H. Burgess and Blair V. Jager	
9. Malignant Tumors of Skin Appendages	103
Kenneth Hashimoto	
10. Squamous Cell Carcinoma	113
Howard L. Stoll, Jr.	
11. Keratoacanthoma	133
Gordon H. Burgess	

†Deceased

12. Malignant Melanoma	141
Stevan Adler and John F. Gaeta	
13. Soft Tissue Sarcomas	159
Mukund S. Didolkar and Sigmund H. Nadler	
1. Dermatofibrosarcoma Protuberans	174
Suwapang Pattummadith	
14. Kaposi's Hemorrhagic Sarcoma	177
Frederick Helm and Gordon Burgess	
15. Malignant Tumors of Blood and Lymph Vessels ..	185
Frederick Helm	
16. Lymphoma Cutis	191
Leon Stutzman and Stevan Adler	
17. Mycosis Fungoides	205
Frederick Helm	
18. The Sézary Syndrome	225
Leon Stutzman	
19. Cutaneous Lesions in Multiple Myeloma	229
Peter J. Lynch	
20. Malignant Tumors of the Oral Cavity	235
William Carl, Kumao Sako, and Robert H. Wood	
21. Cutaneous Markers of Internal Malignancies	247
Frederick Helm and Jutta Helm	
22. Pseudomalignancies	285
Richard C. Connors and A. Bernard Ackerman	

PART III. MANAGEMENT OF SKIN CANCER

23. Prevention of Skin Malignancies	313
James E. Rasmussen	
24. Diagnostic Procedures	317
1. Cytodiagnosis of Malignant Skin Lesions	
Maria C. Gamarra	317
2. Skin Biopsy	322
John F. Gaeta	
25. Surgery	325
Peter M. Calamel	
26. Ionizing Radiation	365
1. X-ray Therapy	365
Walter Murphy	
2. Electron Beam Therapy	404
Moshe Friedman and John I. Pearce	
27. Electrosurgery	411
Frederick Helm	

CONTENTS

xvii

28. Cryosurgery	421
Gordon H. Burgess	
29. Mohs' Chemosurgical Technique	425
John T. Phelan and Halina Milgrom	
30. Chemotherapy	435
1. Topical Chemotherapy	435
Howard L. Stoll, Jr.	
2. Systemic Chemotherapy	450
Stevan Adler and Leon Stutzman	
3. Chemotherapeutic Agents	459
Raphael Fleminger and Leon Stutzman	
31. Introduction to Tumor Immunotherapy	471
Pierluigi E. Bigazzi, Edmund Klein, and Frederick Helm	
32. Comparison of Different Methods of Treatment ...	481
Frederick Helm	

APPENDIXES

Living with Lymphoma	489
Paul N. Carnes	
Counseling the Patient	493
Msgr. Dino J. Lorenzetti	

INDEX	495
-------------	-----

Part I

Etiology of Neoplasms of Skin

1 Epidemiology

Josef Vana

Cancers of the skin are the most common malignant tumors of man, at least of white man. It is surprising, therefore, that they have received so little attention from the epidemiologist. Their high frequency, relatively easy diagnosis, and suitability for detection by screening techniques should render these tumors highly relevant for epidemiologic study. There are, however, significant obstacles in data collection. It is difficult to obtain complete and reliable information on all skin cancers occurring in a defined population during a specified period of time. Most skin cancer patients are treated in physicians' offices or clinics, and histologic diagnosis is not always made. Data on such patients are not systematically recorded in registries, hospital charts, or records of pathology laboratories or outpatient facilities. These difficulties are aggravated both in countries with a large sector of private medical practice and in countries with underdeveloped health services.

Epidemiologic cancer research has been greatly facilitated in the past 20 years by the growing network of regional, national, and international cancer registries. Al-

though useful in providing information on many neoplasms, cancer registries are notably unsuccessful in compiling data on malignant skin tumors.⁷⁶ Many registries that began by including all malignant tumors have dropped the obligatory reporting of skin cancer, except melanoma, because of the difficulties in obtaining complete data. In some instances ad hoc population surveys in registry populations have confirmed how selective and fragmentary the registry data on skin cancer were.

In recognition of these obstacles in data collection, research workers have turned away from nationwide efforts to ad hoc surveys in selected areas to obtain the true prevalence or incidence of skin cancer in the population. Recent studies of this type have shown that the real extent of skin cancer is much higher than that indicated by national statistical estimates or registry data.^{49,68,80} In one such study in Victoria, Australia, for every four known and treated cases, roughly three untreated cases were detected.⁷³ In the Third National Cancer Survey conducted by the U.S. National Cancer Institute in 1969–71, superficial skin cancers were found to be