Malignant Melanoma

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MALIGNANT MELANOMA

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Dr. George T. Pack (1898–1969)
for his outstanding contributions to clinical cancer,
particularly malignant melanoma

and

Harold S. Brady (1909–1976)
for his dedicated devotion to medical research and education.

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PREFACE

The magnificent melanocyte and the maleficent melanoma are discussed in this volume. The melanocyte present throughout most of the animal kingdom is a truly remarkable cell. Its protective function varies from instantaneous camouflage, as in the chameleon, to inherited pigmentary characteristics developed as part of the evolutionary development of a given species, to its production of protective pigmentary changes for protection as occurs by tanning in the human after exposure to solar radiation.

Although the number of melanocytes are more or less equal for the different races, the genetic transfer of the amount of pigmentary granules produced by these melanocytes has resulted in different skin coloration varying from the Caucasian to the Negro. The social implications of this melanocyte function are universally evident.

The melanocytes arise from the precursor melanoblast during embryonic development within the neural crest and migrate throughout the body (skin, mucous membrane, nervous system, eye, and other locations). All except those of the retinal pigment can undergo malignant transformation and form a malignant melanoma. The skin is the most frequent site. The actual number of melanocytes in a given individual or in different locations in the same individual does not seem to influence the formation of a melanoma. The amount of pigment produced, the eumelanins, do influence the development of malignancy. Darker-pigmented individuals have a much lower incidence of malignant melanoma (Chapter 2).

Just as the term *cancer* is meaningless inasmuch as certain lesions called *cancer* can be cured by conservative measures (basal cell carcinoma) whereas others spell a death sentence with the diagnosis, so the term melanoma is losing its sting as certain subdivisions of the generic term have different meanings. The clinician is deeply indebted to certain pathologists and dermatologists for their painstaking researches describing malignant melanoma as a multifaceted disease with subclassifications requiring different forms of treatment and having different prognoses. Some of these evolutionary changes in the natural history of melanoma have been published in the excellent book by W. E. Clark, Jr., Leonard I. Goldman, and Michael J. Mastrangelo, and also one by Alfred W. Kopf.

This volume focuses upon the diagnosis, treatment techniques, and accomplishments in curing malignant melanoma. Many of the chapters express the clinical story of patients with malignant melanoma treated by surgeons at the Pack Medical Group during the years between 1935 and 1972.

Although the classification of levels of invasion (Clark et al.) or thickness of the lesion (Breslow—Chapter 6) were not available during the study, the cases were classified as superficial or invasive. We do not consider level I as a metastasizing melanoma and it is not included in the presentation. Level III (Clark's classification) is somewhat ambiguous. Great strides have been made in staging, but strict adherence to mechanistic parameters may be too simplistic as the formation growth and spread of melanoma involve many metabolic interactions which include genetic, chronologic, sexual, hormonal, and immunologic factors. Considerations of the histologic, immunologic and other markers are necessary to define better the clinical conduct of a patient with malignant melanoma.

The vast majority of our patients during 1935 to 1972 suffered from infiltrating melanomas suggesting a late stage of involvement. The clinical climate is different now since earlier diagnoses are being made due to lay education and professional awareness.

This volume commences with general considerations discussing the role of the ubiqui-

tous mole and the iniquitous melanoma; discussions regarding the suggestive causes of melanoma; the universality, incidence, and epidemiology of malignant melanoma. Then Chapter 4 deals with the pathology of melanoma, written by a great student and authority on melanoma, Dr. Marianne Wolff. Drs. Myron Arlen, Ariel Hollinshead, and Joseph Scherrer in Chapter 8 discuss the strides rapidly being made in investigating how melanoma is influenced by the immune system of the host.

Besides the histologic characteristics of different melanomas with the identification of the juvenile melanoma (Spitz nevus) and the B.K. mole, certain biochemical markers illustrating metabolic pathways are discussed by Doctors Vernon Riley and Phillip Banda (Chapter 9).

Principles of clinical evaluation, prognostic indices, routes of lymphatic spread, and the dynamics of lymphatic spread are also discussed. The role of chemotherapy, endolymphatic isotope therapy, and the accomplishments of treating melanoma as a community disease in a location with the highest incidence of melanoma—Queensland, Australia—are presented.

Once a diagnosis of melanoma is established, definitive treatment often depends on the anatomic setting; in fact, melanoma in different locations will be referred to doctors of different specialties. The second section of the volume is presented according to the specific anatomic sites. Melanoma of the head and neck, including mucous membranes, are presented by Doctors Hamaker and Conley, largely from the Pack Medical Group series. Melanoma of the eye and orbit, an important site from the standpoint of etiology, therapy, and immunology, is discussed by Drs. Ira Jones and Laurence Desjardins, authorities in this field. The delay of 10 to 25 years for metastases to present in the liver after enucleation of an eye melanoma evokes speculation regarding the immune mechanisms involved.

In later chapters, the trunk is divided into those melanomas arising from the thorax and those from the skin of the abdomen, because of the lymphatic vessels which are at risk.

Subungual melanomas are treated in a separate chapter stressing the clinical picture and treatment policies of this unique site for melanoma formation.

Melanomas arising at various rare sites are presented for the sake of completeness, such as those arising from the gastrointestinal tract, genitalia, and central nervous system.

The volume closes with a chapter describing the diagnosis of a pulmonary mass in a patient treated previously for melanoma and the conduct of treating such a patient.

There is an ebb and flow in the growth of melanoma and reaction of the host as evidenced by increased pigmentation and size (growth), redness (inflammation), interspacing white areas (host-reaction-destroying melanoma). There is an increased incidence of melanoma but a decrease in deaths as earlier diagnoses are made and adequate therapy instituted.

The authors paradoxically hope that the techniques herein described may soon become obsolete and that preventive early conservative treatment be instituted before the full malignancy of the lesion develops, preferably by instituting immune techniques in preventing and/or treating melanoma. In the meantime this volume offers techniques and accomplishments in treating the patient with infiltrating melanoma today. Further study is needed to define the best treatment for patients with superficial melanomas, level II (Clark), or less than 0.75 mm thickness (Breslow).

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PART ONE

GENERAL CONSIDERATIONS