Immunocompromised patients are often some of the sickest patients in the hospital. Dermatologists who focus on inpatient consultations and caring for hospitalized patients are often faced with the severely immunocompromised patient who presents with cutaneous lesions that are a mystery to the primary team and the other involved subspecialty consultants. More often than not, these lesions are a sign of an infection, typically one that is potentially life-threatening. Infections in the immunocompromised host often lead to rapid demise, making early recognition of the infectious process crucial to the patient’s survival. The dermatologist plays a central role in identifying the pathogenic organism, implementing the appropriate therapy and prolonging or saving a life. That is the crux of this book. We have combed the literature carefully and combined what we have read with our experience in caring for these very sick, complex patients to present the cutaneous manifestations of infection in the immunocompromised host.

This textbook centralizes the available literature on the cutaneous manifestations of infection in the immunocompromised host. The book is a collection of well-documented references (confirmed by biopsy and culture) on specific skin lesions of infection that illustrates cutaneous lesions of routine and rare infectious organisms, demonstrates the evolution of skin lesions over time, – with immune reconstitution or with the recovery of neutrophils – and highlights recognizable patterns of infection and likely causes in different clinical settings (human immunodeficiency virus/acquired immune deficiency syndrome [HIV/AIDS] vs. post solid organ transplantation vs. neutropenia post chemotherapy vs. bone marrow recovery post hematopoietic stem cell transplantation).

We have given particular attention to the pattern of disease produced by routine and opportunistic pathogens to simplify the expanding list of infectious disease possibilities and recognize the most likely organism for a given clinical situation (e.g., fever, pneumonia and rash or fever, meningitis and rash). Starting with the skin lesion (e.g., acral hemorrhagic bullae or subcutaneous nodules), we present an evidence-based tiered differential diagnosis based on a literature review, well-documented case reports and the probability of a specific organism manifesting as a specific pattern of infection in the immunocompromised patient. This approach to skin lesions in the immunocompromised host has resulted in a unique textbook with bold illustrations that can be used as a bedside guide for diagnosis.

The text has been thoroughly updated and expanded since the first edition to reflect emerging trends in infectious organisms that cause disease in each subgroup of immunosuppressed patients. A new chapter discussing the role of viruses in potentiating malignancies in the immunocompromised patient has been added. The collection of images presented here is a rare and precious anthology gathered from our work in the “hospital trenches.”

This book is written by dermatologists but intended for all physicians who care for immunocompromised patients, including, but not limited to, internists, transplant surgeons, infectious disease specialists, pediatricians, rheumatologists, and hematologist-oncologists. It is intended to be a diagnostic tool for the clinician, as well as a teaching syllabus for medical students and house staff.
Preface to the First Edition

In 1979, after training in internal medicine at the Hospital of the University of Pennsylvania and in dermatology at Columbia-Presbyterian Medical Center, I began performing an in-hospital dermatology consultation service at Columbia. I relished the challenge of treating the sickest patients with the worst rashes. I was often rewarded for a compulsively complete skin examination by finding the subtle skin clue which was the diagnostic solution to an otherwise complex clinical problem. The patients I treated were usually members of the population of immunocompromised patients, a population whose numbers have increased logarithmically over the past 16 years because of major advances in cancer chemotherapy, transplantation, treatment of autoimmune diseases and the AIDS epidemic.

The major problem in these compromised patients was often infection. The inflammatory response to the invasive organism was altered by either the primary disease or its treatment. Thus, routine pathogens presented in disguise, and the patient became a living culture plate for opportunistic microorganisms, some of which had never been previously described as human pathogens. Skin lesions had to be evaluated not by the morphology alone, but by the clinical setting in which they occurred. There were no atlases or textbooks available to help me in these critical situations. Nor were there teachers or specialists to depend on for dermatology knowledge and advice in the acute care hospital setting, although the infectious disease experts or intensive care specialists, Harold C. Neu and Glenda Garvey, were always willing to share their considerable expertise and wisdom with me. To find out more about cutaneous lesions in the immunocompromised host, I (or more often the dermatology resident doing consults with me for the month) had to search the literature for case reports which were scattered in all general and subspecialty medical journals. Similarly, the care of the compromised host has been managed by all types of physicians: surgeons, internists, primary care physicians, oncologists, rheumatologists and specialists in AIDS, transplantation, infectious disease and dermatology.

This book is a first attempt to centralize the information on cutaneous lesions of infection in the immunocompromised host; to collect well-documented references (by biopsy or culture) on specific skin lesions of infection; to illustrate cutaneous lesions of routine and rare infectious organisms; to demonstrate the evolution of skin lesions over time or with the recovery of neutrophils; to recognize patterns of infection and likely causes in different clinical settings; and to provide a list of pathogens that may cause a particular skin lesion when the host is immunocompromised.

Lastly, and perhaps most importantly, this book will be used to teach. I am fortunate to have studied under some of the best physician-teachers, both as a medical student and house officer at the University of Pennsylvania Medical Center and as a dermatology resident at the Columbia-Presbyterian Medical Center. I can only try to do as well as those from whom I have learned.

Scarsdale, New York

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Cutaneous Manifestations of Infection in the Immunocompromised Host
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2012, XIX, 309 p., Hardcover
ISBN: 978-1-4419-1577-1