Skin disease is a serious, long-term problem for the recipients of solid organ transplants. The potent systemic immunosuppression therapy necessary to sustain a life-saving solid organ transplant is associated with many adverse cutaneous effects, including significantly increased rates of cutaneous malignancies, difficult-to-treat cutaneous infections, and cutaneous adverse manifestations of multiple medications. Skin Disease in Organ Transplantation is the first scholarly compilation of the knowledge base surrounding the care of solid organ transplant recipients with dermatologic diseases.

Supplemented with dozens of full-color photographs, this work brings together decades of knowledge into a cohesive format and establishes transplant dermatology as an important subspecialty within the field of dermatology and transplant medicine. Skin Disease in Organ Transplantation is an outstanding resource for transplant providers and dermatologists to determine the optimal diagnostic and therapeutic approach to the difficult problems of cutaneous disease in organ transplant recipients.

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Skin Disease in Organ Transplantation

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To our patients, whose suffering inspires this work and whose courage teaches us every day. To my wife, Jill, and our wonderful children, Taylor, Kendall, Grant, and Keller, who are my inspiration. And to Stu Salasche, MD, for his enthusiasm and steadfast support.

– Clark C. Otley, MD

To MaryAnn, my wife and partner in all things; my daughter Emily for encouragement and technical support; my son Roary and his wife Jenny for inspiring me to take on new adventures. To organ transplant patients, their families, my nurses, and staff, who together show how medicine can be so human. And to Stu.

– Thomas Stasko, MD

To our remarkable colleagues, patients, and their families. – Matthew D. Griffin, MB BCH

To my husband, David, who inspires me, to my ever-cheerful children, Jenny and Simon, to my parents, Nuala and Michael, who always encourage me, and especially to my patients, whose courage and optimism motivate me to do my best for them.

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To my patients, who have taught me the meaning of courage and grace. To my patient wife, Mivic, and our two beautiful children, Kentaro and Kyoko, who have taught me the meaning of love.

– Ryutaro Hirose, MD

To the memory of my father, Tong Chin. – Alvin H. Chong, FACD, MMed (Melb), MBBS
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Foreword – Transplant Dermatology: Skin Disease in Organ Transplant Recipients

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It is a singular honor to contribute a foreword to this new and comprehensive textbook on the science, art, and practice of transplant dermatology. As a transplant clinician with over 25 years of experience, I believe it is critical to admit right from the start that this is one area of our formal training that is significantly limited, which is counterintuitive, because among the most common late posttransplant complications are a variety of malignant and premalignant skin lesions. In addition, there are other classes of infection-related as well as non-malignant, noninfectious skin changes that are less well understood and difficult to diagnose without expert dermatological assistance, and, in many instances, biopsy histology.

A key point is that these lesions are caused by a complex mix of patient-specific history including sun exposure, lifestyle, environmental hazards, exogenous toxins, race and ethnicity, as well as the long-term impacts of our immunosuppressive drug regimes. This etiological complexity is greatly magnified, following a decade in which several new immunosuppressive drugs have been introduced and standard practice in dosing and target levels constantly changed. Azathioprine has given way to widespread use of formulations of mycophenolic acid. Induction therapies can include powerful panlymphocyte agents or more selective IL2 receptor blockers. Cyclosporine or FK506 is used in combinations now with rapamycin formulations, and more complicated regimes of initial use of calcineurin inhibitors (CNIs) with mycophenolic acid formulations followed by switching CNIs to rapamycin, are being studied. Thus, even for experienced clinicians, it is near impossible to determine the exact correlations of any specific component to the appearance of a dermatological complication, especially a malignancy.

In parallel with the etiological challenges, there is little standardization in the postcomplication management of these same patients. In general, when faced with a really serious posttransplant malignancy requiring surgical and medical therapy, we reduce the immunosuppression, but, in the absence of objective metrics for the level of immunosuppression, this is obviously based on best judgment and experience. However, of less certainty is the management of the many patients who are seen by dermatologists for uncomplicated, surgically treated skin malignancies. Although I might reduce immunosuppression slightly in these patients, an important open question is what the best approach is for the current immunosuppressive drug regimes or whether that is even appropriate given the potential impact of lowering immunosuppression on long-term graft survival and chronic rejection.

For all these reasons and others detailed in this new textbook, it is critical to consider the importance of our partnership with experts in dermatology. It is important to encourage their participation in our regular clinical practice, to encourage our patients to see a dermatologist yearly after transplantation, to increase the understanding of transplant dermatology in all transplant physicians, and to participate actively in efforts underway and driven by the dermatology community to educate our patients to reduce sun exposure and use the latest generation of sun-blocking agents. Finally, as we continue forward in the constant evolution of transplantation, we need to include transplant dermatology outcome measures and ongoing analysis in our next generation of clinical trials.

May 23, 2006
The human body is a wonderful instrument. It has a huge number of complex integrated and interactive systems, all working together to comprise a fully functioning corpus. It is capable of surviving by adapting to change in the environmental circumstances in which it finds itself.

Like most other complex instruments, its flexibility and ability to respond to demand, and hence survive, is dependent on a fine balance. Although the balance is generally between opposites, the outcome is seen as an overall steady state with fine changes occurring all the time to maintain the balance.

All components of organ transplantation in humans reflect the general principles of life being a matter of balance. The various diseases that lead to the organ failure, and thus the need for organ transplantation, are a manifestation of either an acute or a chronic loss of balance that is life threatening. The process of replacing the failed organ requires a deliberate or medically-induced change in balance in the ability of the corpus to protect itself from an environmental challenge. This applies particularly to an immunological response to the organ transplanted. One could predict that a chronic imbalance, such as the immunosuppression required for organ transplantation, would inevitably lead to disease. Hence the need for this book.

The book concentrates on the diseases consequent upon an organ transplantation, rather than diseases resulting in the need for it. There are many changes manifest on the skin in patients who have had organ transplantation, as can be seen in the variety of chapters in the book and the composition of each of them. The fact that there are so many changes, and so much effort is required to cope with the result, clearly reflects how important balance is in maintenance of the normal corpus.

Although transplant immunologists may not agree, all these unwanted effects of organ transplantation are also a reflection of our relatively crude way of dealing with organ failure. But, having said that, there is no doubt that the ability to change the balance in favor of maintenance of the transplanted organ, and the provision of a satisfactory life that most people lead following organ transplantation, is a reflection that we have come a long way.

Much can be done now. Much more remains to be done in the future. Organ transplantation offers a substantial improvement in outlook for those people with organ failure of various types. This textbook goes a long way to assisting those who are charged with the responsibility of dealing with the potential risks associated with our current solution to that problem.
The International Transplant Nurses Society is committed to the promotion of excellence in transplant clinical nursing, through the provision of educational and professional growth opportunities, interdisciplinary networking, and collaborative activities, as well as transplant nursing research. Organ transplantation remains one of the more exciting and scientifically interesting success stories in medicine that has evolved during the 20th century. Transplantation has a short history dating back to 1954, when the first kidney transplant between identical twins was performed successfully. Remarkable understanding of the immunology of transplantation and the development of immunosuppressive drugs has allowed tremendous strides in solid organ transplantation.

Although there is considerable optimism, problems exist for many of our transplant patients who have achieved extended graft survival. Skin cancer has emerged as a significant and life-threatening issue. In Skin Disease in Organ Transplantation, world experts provide state-of-the-art information and practical management guidance for all physicians, nurses, and transplant coordinators involved in the care of transplant patients.

The future of transplantation remains bright, as areas such as skin cancer are scrutinized and examined. Transplant nurses play an important role in collaborating with physicians to prevent and manage skin cancer. This text provides a valuable resource for transplant professionals in all roles to decrease the prevalence and significance of skin cancer for transplant patients in the future.
The miracle of successful solid organ transplantation is one of the most inspiring accomplishments of modern medicine and an impressive example of multidisciplinary collaboration. Due to the frequent involvement of the skin of transplant patients by infectious, neoplastic, and systemic diseases, dermatologists have always been an important part of the medical team caring for solid organ transplant recipients. As a by-product of the success in assuring prolonged survival for most organ transplant patients, the chronic and potent systemic immunosuppression has given rise to a new set of challenges for patients and providers alike, manifest by alarming increases in skin cancer and unusual manifestations of skin disease.

Dermatologists are part of a larger community of what we refer to as “non-organ-specific transplant physicians,” composed of providers unbound by allograft-specific considerations. This non-organ-specific community includes infectious disease, endocrinology, bone, metabolism, hypertension, psychiatry, internal medicine, family medicine, and pediatric physicians, as well as general, plastic, head and neck, ophthalmologic, and orthopedic surgical colleagues. Additionally, this community includes nephrologists, cardiologists, hepatologists, and pulmonologists who care for patients with allografts transplanted by other allograft-specific specialists. Closely and critically allied are the transplant coordinators, nurses, dieticians, appointment coordinators, and social services providers who provide and coordinate the majority of care in these complex patients. The transplant patients themselves are a critical and inspiring part of the team, upon which the most critical responsibility rests. This is the family of transplantation, a family of which dermatology is proud to be part.

With the publication of *Skin Disease in Organ Transplantation*, the emerging subspecialty of transplant dermatology has come of age. The emergence of this field was partially driven by necessity; our patients simply needed us to rise to their unique and compelling needs. But the field was also created through the enthusiastic innovation, collaboration, and hard work of many people, particularly the members of the International Transplant Skin Cancer Collaborative, many of whom have contributed their expertise to this book. To these individuals and all of our colleagues mentioned previously, we owe great appreciation. *Skin Disease in Organ Transplantation* represents the consolidation of an enormous body of important clinical experience and critical research that will guide the optimal care of these special patients. With the body of current knowledge coalesced in this work, we now embark upon the more difficult task of expanding the reach of our knowledge and the sophistication of our practice in the future.

We hope that *Skin Disease in Organ Transplantation* will serve as an important resource for multiple constituents in the field of transplantation. Certainly, transplant dermatologists, general dermatologists, and dermatologic surgeons will benefit greatly from the information contained in this book. Transplant physicians and surgeons will likewise benefit from enhancing their knowledge of the important dermatologic manifestations they may be called upon to recognize in many of their patients. Prompt recognition of pathognomonic dermatologic findings, both neoplastic and infectious, can literally provide an opportunity to prevent a lethal outcome. Transplant coordinators and nurses are an incredibly important group of health care providers who are key partners in our goal to promote prevention, early recognition, and treatment of potentially life-altering cutaneous disease in chronically immunosuppressed patients through education and primary prevention strategies. Transplant dermatologists have greatly enjoyed interactions with our other non-organ-specific transplant physicians and colleagues, who we feel will benefit from increased knowledge of the cutaneous diseases they may encounter during their interactions with transplant patients. Our trainees and students can look to this resource as they attempt to master the complexities of the care of these complicated patients. Finally, there may be patients and family members who could benefit from this work, as they attempt to enhance their ability to manage the challenges they confront in conjunction with their life-saving gift.

Welcome to the field of transplant dermatology. We hope you will have as much fun learning about the field as we have had in our journey to improve the lives of these most special patients.
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