Preface

Standard textbooks in Respiratory Medicine do not typically organize their contents to specifically address hematologic abnormalities in acute lung syndromes. However, the main function of the lung is gas exchange at the interface between the external environment and blood. Thus, by definition, blood and its components are an integral part of the lungs and, given the large surface area of the pulmonary vascular beds, the lungs harbor a significant fraction of the circulating blood volume at any one time. While red cells are the vehicles for gas transfer, platelets provide hemostasis, and leukocytes vital for lung homeostasis and immunity, components of the hematopoietic system, can also serve as agents of injury to the lungs in disease states. So, it is not surprising that primary hematologic disorders or disorders secondary to immunopathology can lead to acute lung dysfunction. The purpose of this book is to provide a unique framework for acute lung syndromes that arise from hematologic disorders or is defined by a hematologic abnormality as a key feature. These acute lung processes can present as life-threatening conditions, and as such, the pulmonary physician or critical care physician is often directly involved in their care or called upon to provide expertise.

The book emphasizes the pathogenesis and current understanding of mechanisms and is organized into three parts. It begins with an overview containing the central theme of the lungs as the direct interface between the external environment and blood and a description of individual components of the hematopoietic system, their function, and relevance to the lungs. The overview also discusses the concept of the lungs as an organ site of leukocyte sequestration and a target organ of injury and how cells of hematopoietic origin can serve as agents of injury. The second part of the book focuses upon primary hematologic disorders that can lead to acute pulmonary manifestations. This section is organized by benign and malignant hematologic disorders and the specific clinical entities affecting the lungs associated with these disorders. The third part of the book focuses upon transfusion-related complications occurring in the ICU setting.

These chapters provide a unique framework for discussing unusual clinical entities encountered largely in the acute hospital setting. These acute pulmonary syndromes are typically not organized in such a way for easy reference. However,
recent advances in medicine have allowed for patients with severe comorbidities such as sickle cell anemia, hemophilia, hematologic malignancies, or immunopathologies to survive, and thus many of the syndromes discussed have not had full representation in respiratory medicine textbooks historically. Thus, the book encompasses disease entities that specialists will encounter. The book is written in detail, emphasizing primary literature and pathophysiology, and catered to clinicians who take care of these patients.

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