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# Pathology of the Mediastinum

Edited by  
**Alberto M. Marchevsky, MD**  
Director of Pulmonary and Mediastinal Pathology,  
Department of Pathology and Laboratory Medicine, Cedars-Sinai Medical Center, Los Angeles;  
Clinical Professor of Pathology, David Geffen UCLA School of Medicine, Los Angeles, CA, USA  
**Mark R. Wick, MD**  
Professor of Pathology, Department of Pathology,  
University of Virginia Health System, Charlottesville, VA, USA



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# Contributors

**Serhan Alkan, MD**  
Professor of Pathology; Director of Clinical Pathology; and  
Director of Hematopathology and Personalized Medicine  
Diagnostics,  
Cedars-Sinai Medical Center, Los Angeles, CA, USA

**Bonnie Balzer, MD, PhD**  
Director of Surgical Pathology,  
Dermatopathology and Musculoskeletal Pathology Services,  
Cedars-Sinai Medical Center, Los Angeles, CA, USA

**Frank C. Detterbeck, MD**  
Professor and Chief, Yale Thoracic Surgery,  
Yale University School of Medicine, New Haven, CT, USA

**Gregory A. Fishbein, MD**  
Resident Physician, Anatomic Pathology,  
Department of Pathology and Laboratory Medicine,  
David Geffen UCLA School of Medicine,  
Los Angeles, CA, USA

**Michael C. Fishbein, MD**  
Piansky Professor of Pathology and Medicine;  
Head, Cardiovascular and Autopsy Pathology,  
Department of Pathology and Laboratory Medicine,  
David Geffen UCLA School of Medicine,  
Los Angeles, CA, USA

**Aliya N. Husain, MD**  
Professor of Pathology, University of Chicago,  
Chicago, IL, USA

**Thomas Krausz, MD**  
Professor of Pathology, University of Chicago,  
Chicago, IL, USA

**Kent Lewandrowski, MD**  
Associate Chief of Pathology, Director of Pathology  
Laboratories and Molecular Medicine,  
Massachusetts General Hospital; Professor of  
Pathology, Harvard Medical School, Boston, MA, USA

**Alberto M. Marchevsky, MD**  
Director of Pulmonary and Mediastinal Pathology,  
Department of Pathology and Laboratory Medicine,  
Cedars-Sinai Medical Center, Los Angeles;  
Clinical Professor of Pathology,  
David Geffen UCLA School of Medicine,  
Los Angeles, CA, USA

**Susan Parson, MD**  
Anatomic and Clinical Pathology Resident,  
Cedars-Sinai Medical Center, Los Angeles, CA, USA

**Atsuko Seki, MD**  
Department of Pathology, National Hospital Organization,  
Tokyo Medical Center, Tokyo, Japan

**Ajay Singh, MD**  
Assistant Professor, Department of Radiology,  
Massachusetts General Hospital, Boston, MA, USA

**Saul Suster, MD**  
Professor and Chairman, Department of Pathology and  
Laboratory Medicine, Medical College of Wisconsin,  
Milwaukee, WI, USA

**Thomas M. Ulbright, MD**  
Lawrence M. Roth Professor of Pathology, Department of  
Pathology and Laboratory Medicine, Indiana University  
School of Medicine, Indianapolis, IN, USA

**Xiaoqin Wang, MD**  
Radiology President, Department of Radiology,  
University of Kentucky, Lexington, KY, USA

**Mark R. Wick, MD**  
Professor of Pathology, Department of Pathology,  
University of Virginia Health System,  
Charlottesville, VA, USA

**Sean R. Williamson, MD**  
Senior Staff Pathologist, Department of Pathology  
Henry Ford Hospital, Detroit, MI, USA

## Preface

The mediastinum is an anatomical area of great interest to pathologists, pulmonologists, radiologists, thoracic surgeons, and oncologists as it can be the site of origin of a surprisingly large number of neoplastic and non-neoplastic conditions. The two editors and several other surgical pathologists with many years of experience in the diagnosis of thymic neoplasms, malignant mesothelioma, soft tissue lesions, lymphomas, cardiac lesions, and other mediastinal lesions have collaborated with a multidisciplinary team of physicians that includes an experienced thoracic surgeon, cardiac pathologists, radiologists, and a clinical pathologist to provide a comprehensive review of mediastinal pathology.

The book includes a review of the anatomy of the mediastinum and its various structures and a concise yet informative discussion of the diagnosis of various mediastinal lesions by imaging methods. The embryology, anatomy, and pathophysiology of the thymus are reviewed in detail, followed by a comprehensive and well-illustrated description of the various non-neoplastic conditions that can arise in the thymus.

A significant portion of the book is dedicated to a comprehensive review of the pathology of thymomas, thymic carcinomas, thymic neuroendocrine carcinomas, and other thymic neoplasms. Although thymomas and other thymic neoplasms are relatively uncommon, they have been the subject of great interest because of their association with myasthenia gravis and many other para-neoplastic conditions. In addition, the pathologic classification of thymomas has stimulated heated controversy in the literature with multiple articles extolling the advantages of certain classification systems and strongly criticizing others. Indeed, there has been so much disagreement in the terminology necessary to categorize thymomas that the World Health Organization (WHO) has proposed as a compromise a classification scheme that categorizes thymomas in an unprecedented manner with various letters such as A, B1, B2, and others rather than with descriptive terminology or nomenclature that reflects their histogenesis.

The book includes a novel classification scheme of thymic epithelial malignancies that correlates closely with the WHO system. The two editors, who have been interested in the pathology of thymic neoplasms for over three decades, were fortunate to be able to collaborate with Dr. Saul Suster, one of

the most experienced international experts in the pathology of thymomas, in the development of this classification. It emphasizes that all thymic epithelial neoplasms are malignant and stratifies thymomas and thymic carcinomas into three levels of malignancy, underscoring that certain thymomas share similar prognosis with selected thymic carcinomas. The classification scheme uses simple descriptive terminology that underscores the most important morphological features of each thymic epithelial lesion variant and emphasizes the frequent presence of heterologous morphological features in thymomas and thymic carcinomas. The clinical significance of these and other classifications of thymoma and thymic carcinomas is discussed in detail, followed by a description of the Masaoka-Koga and Moran staging systems and a brief discussion of the treatment of patients with these malignancies.

The pathology of neuroendocrine and germ cell tumors of the tumor is described in detail. Neuroendocrine tumors of the thymus are classified as neuroendocrine carcinomas, a terminology that has become standard in various locations other than the thorax. The fact that mediastinal “carcinoid tumors” have a more aggressive clinical behavior than their counterparts arising from the lungs is discussed together with a critical review of current best evidence underscoring the classification of these lesions into typical and atypical carcinoid tumors by WHO.

The three chapters describing thymic neoplasms are followed by two chapters providing a concise yet comprehensive review of mediastinal germ cell tumors, parathyroid and thyroid lesions, paragangliomas, and pleomorphic adenoma of the mediastinum. Another chapter is devoted to describing in detail the pathology of the multiple non-neoplastic and neoplastic cystic lesions of the mediastinum.

The book does not intend to review the pathology of malignant lymphomas in detail, but it includes a chapter written by an experienced hematopathologist who provides a brief description of the most frequent hematopoietic lesions of the mediastinum and various algorithms to guide general pathologists in the interpretation of these lesions. Likewise, although this is not intended to be a “sarcoma,” cardiac pathology or pleural pathology book, three other chapters provide concise and quite comprehensive review of the pathology of multiple neoplastic and non-neoplastic mesenchymal, cardiac

Preface

and pleural lesions. These chapters provide a comprehensive review of the use of immunohistochemistry in the diagnosis of these lesions.

In summary, the book is intended to provide a concise, comprehensive, and well-illustrated review of mediastinal pathology. We hope that it will provide readers with a practical and extensively illustrated reference that will assist them

during their daily diagnostic work and help surgical pathologists and their clinical colleagues become familiar with the most important aspects of the biology, clinico-radiologic, and therapy of thymomas and many other mediastinal lesions.

*Alberto M. Marchevsky, MD*  
*Mark R. Wick, MD*