Malignant Mesothelioma
Malignant Mesothelioma
Advances in Pathogenesis, Diagnosis, and Translational Therapies

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Editors

With 178 Illustrations
Dedications are insights into the personal lives and motivations of the editors of a book. Because each of us has dedicated so many years of our professional and personal lives to studying and grappling with mesothelioma, we collectively decided to dedicate this book to the amazing and wonderful patients with mesothelioma and their families who have changed each of our lives for the better. Their humanity, compassion, humor, and courage during their unique and heroic battles are beacons that will forever illuminate the path forward.

Personally, we each dedicate the book to special people in our lives:

To Helen, Ally, and Eric Pass, who put up with Poppy becoming completely overwhelmed but still provide him with the love he always needs.

Harvey I. Pass, MD

To my father Reverend Nicholas Vogelzang who at age 85 continues to have intense curiosity, a keen sense of humor, love of family, and dedication to the welfare of others. I love you Dad.

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To my father, Carmine Carbone, Professor of Orthopedics and sixth generation physician in my family, who inspired and in a way forced me to become the seventh generation physician.

Michele Carbone, MD, PhD
Malignant mesothelioma remains one of the sentinel malignancies of oncology. It has a breathtakingly rapid natural history with a median survival of 6 to 8 months when untreated, is environmentally related, and has such economic and social impact that attorneys specialize in representing only mesothelioma patients. Expert witnesses devote full time to testifying, and governments are forced to consider not only the banning of the environmental agent but also a reappraisal of the whole tort system for compensation to injured victims. Furthermore, its presence in certain populations has changed the mindset of whole communities, such as Libby, Montana, Cappadocia, Turkey, Sarnia, and Ontario.

Because of its infrequent occurrence, malignant mesothelioma is considered an orphan disease and managed in an anecdotal fashion in most oncologic practices. Yet this disease has set new scientific paradigms—in the clinic, laboratory, and community.

This book has been assembled to correct an information “disconnect” about this orphan disease and to raise awareness among scientists everywhere about new concepts in the molecular genetics, epidemiology, and carcinogenesis of mesothelioma. We, as editors and authors, work to spread knowledge about mesothelioma and reverse the disproportionately low amount of NCI funding committed to the study of this cancer. Furthermore, we believe that study of this fascinating disease, while occurring in the context of litigation concerns, should proceed along the same paths that all science takes, following the trail of discovery. Legal issues should have no influence—but sadly often do have—on the direction taken by science and medicine.

Over the last ten years, data have accumulated indicating that mesothelioma is a cancer caused by the environmental carcinogens asbestos and erionite, which interact with genetic predisposition and viral infection during carcinogenesis. The outcome of these complex interactions determines who among exposed individuals will develop malignancy. Moreover, mesothelioma has become the ideal model to study how genetics and viral infection influence environmental
carcinogenesis, as well as to discover novel targets for early detection and therapy.

Few cancers have caused so much controversy as mesothelioma. For more than 40 years scientists have argued whether chrysotile asbestos does or does not cause mesothelioma. As if the chrysotile controversy was not enough, a new controversy developed in the field of mesothelioma when two of the editors of this book (HP and MC) reported that SV40, a DNA tumor virus that causes mesothelioma in animals, was present in some human mesotheliomas. Besides these important causality issues, conflict exists regarding the best surgical therapy for the disease and the interpretation of novel trials for mesothelioma. All these volatile issues, including the economic, legal, and most important of all, the scientific aspects, are addressed in various chapters in this book. We encourage the reader to not only digest these topics but to follow these controversies in mesothelioma prospectively as new data are introduced.

The proliferation of mesothelioma-specific knowledge has led to an increase in the number of global conferences devoted to mesothelioma, at which scientists present new and exciting findings. A sufficient quantity of mesothelioma-specific research now stands strong and is no longer the stepchild at meetings devoted to lung cancer or sarcoma. Clinicians and scientists alike are being identified as “mesothelioma experts,” and their advice in preventing and detecting the disease early, as well as in the treatment of the disease, is being solicited not only by other physicians, but by a growing number of E-mails directly from patients and their families.

The editors envisioned a comprehensive text that described the controversies and facts in order to heighten awareness of the mesothelioma epidemic and to aid both clinicians and bench scientists in their efforts to either treat the disease or design new therapeutic options. The complexity of mesothelioma has only recently been realized, and this complexity demands that the disease “graduate” from being just another chapter in an oncology text. Therefore, this book is intended to be used as an authoritative guide by PhDs, primary care physicians, pulmonologists, medical oncologists, radiation oncologists, and surgical oncologists, as well as by fellows in training in these subspecialties. Moreover, because of the economics and legal impact of mesothelioma, this book will have a significant impact in courts of law.

This was truly an international effort, and the North American, European, Middle Eastern, and Australian perspectives on both the clinical and translational aspects of mesothelioma are represented. This fact, in itself, reinforces the global nature of this smoldering epidemic, and emphasizes that a reference source that can potentially be expanded in future editions should be launched at this time. The editors are grateful to all of the authors who took time from their incredibly busy schedules to contribute to this first effort. Their enthusiasm and patience in providing the most up-to-date information regarding their areas of expertise are reflected in their chapters, and the editors are convinced that their efforts will be rewarded with a newer
generation of oncologists and investigators who will approach mesothelioma with knowledge instead of apathy.

Finally, the editors wish to thank Springer for having the foresight to recognize the void in the literature regarding mesothelioma by publishing this book. When the publishing house was first approached about this project, there was never any hint of too small a market or population to endorse or support the project, and Springer has been a wholehearted working partner in this effort. Special thanks go to Beth Campbell, Stephanie Sakson, Barbara Chernow, Brian Drozda, and Laura Gillan diZerega, all of whom stood by this undertaking with unwavering support.

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