

MEDICAL RADIOLOGY

Radiation Oncology

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Advances in Radiation Oncology in Lung Cancer

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With 89 Figures in 133 Separate Illustrations, 50 in Color and 85 Tables

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This book is dedicated

To the memory of my late mother, OLGA,
for initiating the spirit

To my father, BUDIMIR,
for following a path of expression

To my wife, ALEKSANDRA,
for endless love and sacrifice

To my daughter, MARTA,
for making everything worthwhile

Foreword

The volume prepared by Dr. B. Jeremic represents a composite and detailed review of the advances in the management of patients with cancer of the lung. Cancer of the lung is one of the most common primary invasive malignancies seen in oncology practice. In the United States in 2004, 173,770 new cases are anticipated, which represents about 12% of all invasive cancers diagnosed during this time period. The advances in diagnostic technology have more truly identified local versus regional versus distant presentations with more cases being identified and diagnosed as having metastatic disease.

The advances in treatment regimens have had an important impact on survival, but there has been no major or dramatic improvement in long-term survival in cancer of the lung over the last 20 years in spite of more innovative treatment programs in radiation oncology, more innovative treatment programs in medical oncology, the development of new drugs, as well as the refinement of surgical techniques in terms of management.

This volume clearly emphasizes the molecular biology and genetics of lung cancer, the impact of angiogenesis in lung cancer, as well as contemporary issues in staging of lung cancer. Basic treatment considerations are developed with regards to lung cancer surgery, radiation therapy, chemotherapy, as well as combinations of surgery, radiation therapy, and chemotherapy. Strategies in non-small cell cancer are discussed in great length including radiation therapy alone, postoperative radiation therapy, as well as the potential for photodynamic therapy. In locally advanced non-small cell cancers of the lung, the impact of multimodal management is explored in detail and the case made for intraoperative electron beam radiotherapy. The indications for intraluminal brachytherapy programs are also discussed. The treatment of small cell lung cancer is dealt with emphasis on limited disease as well as on the role of prophylactic cranial irradiation.

The volume covers the management of recurrent lung cancer, management in elderly patients, and the advances in supportive and palliative care for lung cancer patients while also considering the toxicities of the various treatment regimens being employed. Future strategies in the management of lung cancer are dealt with in detail, pointing the way toward new and innovative programs in practical management. The volume represents a hallmark statement of the present status of the management of lung cancer.

Philadelphia
Hamburg
Munich

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Preface

If you look at the map of the world and check the incidence rates of cancer, you will find lung cancer as one of the major health problems worldwide. This is irrespective of sex and age, health care systems and current media reports. It is simply a fact that we sometimes forget, but it always comes again as a reminder with every new patient worldwide. This burden is present for decades and although there seems to be stagnation in males, plateau is not reached in females yet. Even then, we would still have to deal with thousands of patients suffering from the deadly disease.

And we deal with it with radiation therapy, a treatment modality being now older than one-hundred years. During that period we have learnt how to fractionate the dose and observe the effects both on tumors and normal tissues. We have also learnt how to combine radiation therapy with other treatment modalities. With the time, we became increasingly capable of documenting dose distribution and to build on computerised-driven technologies to image, verify and record. We also became capable of concentrating on progressively smaller and smaller constituents; from the whole body to organs and tissues and from them to cells and molecules. We use radiation biology and molecular oncology to provide necessary framework for the science of radiation oncology in lung cancer.

And this book is about it; what had been done and what is going on. But much more than that, it is a book of what we have learnt from the past and how successfully we should incorporate it in our future endeavours, all having the same aim, better radiation oncology of lung cancer patients.

I feel privileged of having a distinguished faculty joining me on this task. My dear colleagues who have devoted their professional lives to the fight of lung cancer have made substantial contribution to this field in recent decades. Jointly we have built and steamed towards the same: better understanding of biology and technology in radiation oncology of lung cancer, ultimately ending up in a combination of these two which would lead us towards better treatment for our patients.

I also feel I should thank all of my former and current colleagues with whom I have collaborated during last two decades in sometimes distant, but beautiful places. Their dedication to the cause and timeless efforts made my professional life interesting and rewarding, always opening up new doors of cancer research.

I would also like to express my thanks to the Alexander von Humboldt Foundation, Bonn for support since 1998 as well as to Bund der Freunde of the Technical University Munich, Klinikum rechts der Isar, Munich for support in the year 2002-2003. Special thanks to Ms. Ursula Davis, Mr. Kurt Teichmann and Ms. Christine Schaeffer for their kind and patient, yet effective management of the whole process of preparing the book, without whom this book would not have such fate, I am sure.

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