
Preface

It is recognized that scientific journals and books not only provide current information but also facilitate exchange of information, resulting in rapid progress in the medical field. In this endeavor, the main role of scientific books is to present current information in more details after careful additional evaluation of the investigational results, especially those of new or relatively new therapeutic methods and their potential toxic side-effects.

Although subjects of diagnosis, drug development, therapy and its assessment, and prognosis of tumors of the central nervous system, cancer recurrence, and resistance to chemotherapy are scattered in a vast number of journals and books, there is need of combining these subjects in single volumes. An attempt will be made to accomplish this goal in the projected fourteen-volume series of handbooks.

In the era of cost-effectiveness, my opinion may be minority perspective, but it needs to be recognized that the potential for false-positive or false-negative interpretation on the basis of a single laboratory test in clinical pathology does exist. Interobserver or intraobserver variability in the interpretation of results in pathology is not uncommon. Interpretative differences often are related to the relative importance of the criteria being used.

Generally, no test always performs perfectly. Although there is no perfect remedy to this problem, standardized classifications with written definitions and guidelines will help. Standardization of methods to achieve objectivity is imperative in this effort. The validity of a test should be based on the careful, objective interpretation of the tomographic images, photo-micrographs, and other tests. The interpretation of the results should be explicit rather than implicit. To achieve accurate diagnosis and correct prognosis, the use of molecular criteria and targeted medicine is important. Equally important are the translation of molecular genetics into clinical practice and evidence-based therapy. Translation of medicine from the laboratory to clinical application needs to be carefully expedited. Indeed, molecular medicine has arrived.

This is the twelfth volume in the series, Tumors of the Central Nervous System. As in the case of the eleven previously published volumes, this volume mainly contains information on the diagnosis, therapy, and prognosis of brain and spinal cord tumors. Various aspects of a large number of tumor types, including neuroblastoma, medulloblastoma, meningioma, and chordoma, are discussed. The contents are divided into four subheadings: molecular mechanisms, children's cancer, treatments, and radiosurgery, for the convenience of the readers. Molecular profiling of brain tumors to select

appropriate therapy in clinical trials of brain tumors is discussed in detail. The classification/diagnosis of brain tumors based on function analysis is presented. CDK6 as the molecular regulator of neuronal differentiation in the adult brain, and the role of aquaporins in human brain tumor growth are explained. Children's tumors, including neuroblastoma and medulloblastoma, are discussed. Molecular genetic alterations in medulloblastoma are explained. Survival differences between children and adults with medulloblastoma are pointed out. The use of various types of imaging methods to diagnose brain tumors is explained. Important, effective treatments for patients with brain and spinal tumors are included. Treatments, such as stereotactic radiosurgery, endoscopic neurosurgery, electrochemotherapy, transsphenoidal surgery, focal ablation, whole brain radiation therapy, and craniotomy, are detailed. The remaining volumes in this series will provide additional recent information on these and other aspects of CNS malignancies.

By bringing together a large number of experts (oncologists, neurosurgeons, physicians, research scientists, and pathologists) in various aspects of this medical field, it is my hope that substantial progress will be made against this terrible disease. It would be difficult for a single author to discuss effectively the complexity of diagnosis, therapy, and prognosis of any type of tumor in one volume. Another advantage of involving more than one author is to present different points of view on a specific controversial aspect of the CNS cancer. I hope these goals will be fulfilled in this and other volumes of this series. This volume was written by 92 contributors representing 11 countries. I am grateful to them for their promptness in accepting my suggestions. Their practical experience highlights their writings, which should build and further the endeavors of the reader in this important area of disease. I respect and appreciate the hard work and exceptional insight into the nature of cancer provided by these contributors. The contents of the volume are divided into three subheadings: Pineal Tumors, Pituitary Tumors, and Spinal Tumors for the convenience of the reader.

It is my hope that the current volume will join the preceding volumes of the series for assisting in the more complete understanding of globally relevant cancer syndromes. There exists a tremendous, urgent demand by the public and the scientific community to address to cancer diagnosis, treatment, cure, and hopefully prevention. In the light of existing cancer calamity, financial funding by governments must give priority to eradicating this deadly malignancy over military superiority.

I am thankful to Dr. Dawood Farahi and Philip Connelly for recognizing the importance of medical research and publishing through an institution of higher education. I am also thankful to my students for their contribution to the preparation of this volume.

M.A. Hayat

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