Pediatric Neuro-oncology

Katrin Scheinemann • Eric Bouffet
Editors

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*To our patients and their families who teach
us the essence of life every day:
Do not look back in the past or plan for the future;
live life to the fullest today!*

Foreword

Pediatric Neuro-Oncology is undergoing a rapid transformation within all of its key disciplines. Rapid advances in our understanding in the biology of medulloblastoma, pontine glioma, low-grade and high-grade glioma, ependymoma, embryonal tumors abundant neuropil and true rosettes (ETANER), and atypical rhabdoid teratoid tumor (ATRT) have ushered in a new era of clinical and molecular diagnostics. Modern treatment approaches are being introduced into the clinic based on this advanced understanding of tumor biology, and current treatment approaches are being modified to the clinical and biological risk so as to reduce the long-term toxicity for patients with good prognosis.

Newer imaging techniques along with availability of intraoperative MRI have facilitated surgical resections that one could only have wished for a few decades ago. Sophistication in radiation treatment planning and the gradual availability of proton beam radiation therapy hold the promise of decreased long-term morbidity in children treated with focal radiation therapy.

A better understanding of the pathophysiology of the damage to the developing brain caused by current therapies has allowed neuropsychologists to initiate intervention studies that seek to mitigate the damage and provide the children with coping mechanisms.

Emerging interest in studying the quality of life and symptom burden in this patient population has led to refined end-of-life care. The editors, Drs. Scheinemann and Bouffet, and their Canadian team of coauthors have done an outstanding job of presenting this complex information in a lucid manner—this book is a must-read for the global community of aspiring students and neuro-oncology practitioners.

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Preface

Over the past decades the numbers of long-term survivors of pediatric brain tumors have increased. It was quickly recognized that this was influenced by modified multimodal treatment for which a multidisciplinary team was needed. In lots of large pediatric oncology units, specialized teams focused on pediatric neuro-oncology were created to take care of the complexity of these patients. Survivorship of this group also comes with significant long-term sequelae which have to be taken care of.

The purpose of this book is to provide a comprehensive practical, clinical, and research overview for pediatric neuro-oncology. It also emphasizes the role of national study groups as this book is authored by the members of the Canadian Pediatric Brain Tumor Consortium that involves many disciplines.

We would like to thank our chapter authors for their ideas, time, and knowledge devoted for this project.

We hope that this textbook will provide answers and guidance for health-care professionals in this complex and challenging however fascinating field.

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