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Atlas of Brain Tumors

Light- and Electron-Microscopic Features

With 258 Figures

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To our patients

Foreword

In the many years since the electron-microscopic observation of surgical specimens first began, countless papers on the subject have been published. Because of the large number of the papers and the fact that they are to be found in all kinds of publications, it is difficult fully to keep abreast of them all. To remedy this situation, Drs. Tabuchi and Nishimoto have put together a superb book on the light- and electron-microscopic features of brain tumors. Despite being restricted to human material, the quality of the photographs is excellent, and it will surely be constantly used by clinicians as well as clinical investigators. This volume is clearly the result of detailed and careful study. It is a great achievement.

Isehara, Japan

Paul K. Nakane

Foreword

It is a pleasure to introduce both to the general reader and to the specialist this attractively and meticulously illustrated Atlas of Brain Tumors by Profs. Tabuchi and Nishimoto. The information provided by the light-microscopic appearance of these neoplasms, obtained both with traditional staining techniques and the more recently developed immunohistochemical approaches, is harmoniously blended with a detailed, up-to-date survey of their principal fine-structural features. This combination reflects the extensive experience of the authors in the different morphological aspects of brain tumors. The high quality of the illustrations adds considerable esthetic appeal to the scientific value of this work.

This atlas will, therefore, prove to be a reliable source of reference for the pathologist confronted with these diagnostic problems as well as a most useful aid in the day-to-day practice of neuropathology. It is greatly welcome, and I wish it all the success that it so clearly deserves.

Charlottesville, VA, USA

L. J. Rubinstein

Preface

This atlas is planned as a guide for those studying the pathology of tumors arising from the central nervous system. As the title implies, it is concerned mainly with the light- and electron-microscopic features of brain tumors and should prove useful to pathology residents, neurologists, neurosurgeons, neuroradiologists, and senior medical students who are confronted with a variety of brain tumors.

Recently, the innovations in neuroradiology, including computed tomography (CT), magnetic resonance imaging (MRI), and positron emission tomography (PET), have greatly contributed toward the precise localization of brain tumors; the ultimate diagnosis, however, is still based on the histopathological findings from tumor specimens obtained at surgery. Although brain tumors are generally diagnosed by ordinary light- and electron-microscopic examination of the specimens, the recently developed immunoperoxidase methods have added a new dimension to the histopathology of brain tumors by enabling different types of proteins or peptides, such as immunoglobulins and hormones, to be localized. We believe that accurate diagnosis is essential for the appropriate management of patients with brain tumors.

The material in this atlas represents approximately 700 brain tumor specimens collected mainly in our clinics but also derived from other sources. In the majority of cases, we present both light- and electron-microscopic images of the same case since the two are essentially complementary.

Unless otherwise indicated, all the material was processed according to routine procedures for diagnosis. Biopsy tissues of each tumor were placed in 10% formalin and processed for conventional light microscopy. The tissue samples for electron-microscopic examination were cut into small blocks of about 1 mm³, fixed in 2.5% glutaraldehyde, and embedded in Epon after dehydration with ethanol. Ultrathin sections were stained with metals and observed and photographed in the electron microscope.

With regard to nomenclature, we have tried to follow the classification of brain tumors recommended by the World Health Organization in the series of publications "International Histological Classification of Tumours, No. 21: Histological Typing of Tumours of the Central Nervous System, 1979."

Saga, Japan

K. Tabuchi
A. Nishimoto

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Contents

1. Fibrillary Astrocytoma.....	1
2. Pleomorphic Xanthoastrocytoma.....	9
3. Subependymal Giant Cell Astrocytoma	13
4. Anaplastic Astrocytoma	17
5. Oligodendroglioma	23
6. Ependymoma	41
7. Choroid Plexus Papilloma.....	49
8. Glioblastoma	59
9. Medulloblastoma	75
10. Ganglioglioma	87
11. Central Neurocytoma	93
12. Cerebral Neuroblastoma.....	109
13. Olfactory Neuroblastoma (Esthesioneuroblastoma)	115
14. Primitive Neuroectodermal Tumor (PNET).....	121
15. Pineocytoma.....	127
16. Germinoma.....	131
17. Teratoma and Teratoid Tumor	139
18. Schwannoma.....	149
19. Pituitary Adenoma and Oncocytoma	157
20. Meningioma	185
21. Meningioangiomatosis.....	195
22. Hemangioblastoma	199
23. Hemangiopericytoma.....	203
24. Melanoma.....	209

Contents	
25. Malignant Lymphoma.....	213
26. Craniopharyngioma.....	221
27. Chordoma.....	229
28. Metastatic Tumor.....	235
References.....	239
Subject Index	245