Neuro-Oncology

First Edition
January 2023

History
Diagnosis
Therapy

By

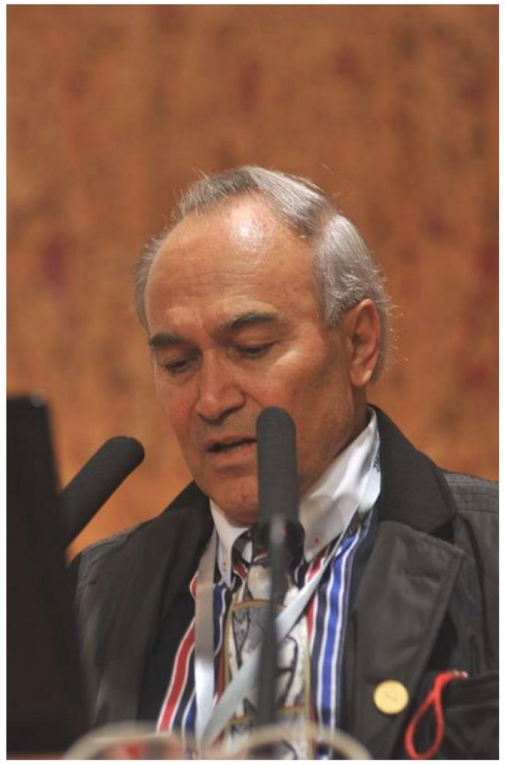
Armin A. Norousi M.D.
Jalal J. Shokouhi M.D.

Armin A. Norusi M.D.
Neurosurgeon

Head of Spine Care /MVZ, Berlin, Germany
Guest Professor in the University Lemberg / UKs
Chairman of international Europe-Middle-East Neurocongress
CEO & Founder of International Education Center e. V. (IEC e. V.), Munich, Germany
www.sinapublisher.com
info@sinapublisher.com
Book.neurosurgery@gmail.com

Jalal J. Shokouhi M.D.
Neuroradiologist

President of Iranian Society of Radiology
Founder of TBP Co. No.467, Hafez St. Tehran, Iran
Co-Founder of International Edecation Center e.V (IEC e. V.), Munich, Germany
Medical Manager of Koroush and Jaame-Jam imaging centers
www.Medimage.ir
www.Radioogle.ir
Jalaljalalshokouhi@hotmail.com



ISBN 978-3-942591-03-4
Printed on acid-free paper
Published by **SINA Publishing House**
P. O. Box. 33 04 48
14174 Berlin, Germany
Tel. + 49 93 67 80 20
Mobile: +49 177 7191 448
Fax: + 49 55 10 88 97

www.sinapublisher.com

info@sinapublisher.com
Book.neurosurgery@gmail.com

Printed in Germany

Preface

The study of tumors and cancers of CNS has recently made significant progress in the diagnosis, treatment, and prognosis of many CNS benign - and malignant tumors.

Knowledge of current concepts associated with oncology disorders of CNS around the world is a crucial issue for providing appropriate evaluation and treatment of patients with tumor diseases of CNS.

In spite of that, tumors of CNS, particularly cancer is still a main cause of death by disease in patients suffering from these neoplasms.

The future direction of Neuro-oncology will involve genetic research and improved treatment options. Therefore the main goal of this book is to provide broad based current knowledge of diverse oncologic disorders of CNS on a high level.

A wide range of faculties of medicine; neurosurgery, neuroradiology, neurology, pediatric surgery, pain management, and rehabilitation are involved in the diagnosis, treatment and recovery of patients with CNS diseases in their daily work.

The intended audience will be wide ranging from neurosurgeons and neuro-radiologists to residents, fellows and medical students.

We would like to thank the colleagues, who have provided us with specific photographs and also all persons, who contributed to the development of this book over the last years.

We are especially grateful to Dr. A. Khadem for bringing this book to editorial and technical completion.

Armin A. Norusi M.D.
Neurosurgeon

Jalal J. Shokouhi M.D.
Neuroradiologist

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NEURO-ONCOLOGY

General Classification of CNS Tumors

A- Cranial Tumors
B- Cranio-vertebral Junction Tumors
C- Spinal Tumors

Cranial Tumors

Scalp Tumors

Introduction

These are benign and malignant lesions of scalp layers restricted between supra-orbital ridge along the superior nutchal, zygoma and mastoid bone. A number of them are associated with chromosomal and genetic abnormalities, including those with neurofibromatosis Type I and II.

Benign Lesions of Scalp

Seborrheic Keratosis

a. **Seborrheic Keratosis**: It is a benign brown-colored lesion arising from the basal epithelial cells. In contrast with Actinic Keratosis, they don't become malignant. Therapy is more for cosmetic reasons or for obtaining diagnosis.

b- Actinic keratosis: Darkened or red areas with irregular borders with origin of epithelial transformation. These occur on parts of the skin exposed to radiation or extensive sunshine. It shows a tendency to malignancy.

Therapy: There are conservative topical agents such as (5-FU) and surgical procedure such as cryosurgery, shave excision, and carbon dioxide laser. Above therapy is recommended, because of tendency to become malignant.

Keratoacanthomas

These are rapid growth lesions with papillary origin and clinically confused lesions. Therefore obtaining a definitive diagnosis for performing the appropriate treatment is recommended.

Malignant Lesions of Scalp

A- Primary Malignant Lesions

Basal cell Carcinoma (BCC)

Introduction

A very common form of skin lesion arising from basal cells of epidermis and maybe becomes locally destructive. BCC may metastasize and lead to death.

Incidence

It accounts for about 25% of all cancers in the United States and 75% of all non-melanoma skin cancer. Risk factors are exposure to excessive sunshine, positive HIV, and also patients that have under-gone organ transplantation.

Etio-pathology

The BCC and squamous cell carcinoma (SCC) are staged by the tumor node metastasis (TNM) staging system of the American Joint Committee on Cancer (AJCC) based on the depth of lesion, and degree of cellular atypia.

There are several types of BCC shown in below table.

Tab. 1 shows the different type of BCC based on cellular atypia

- Nodular Type: It is a well-circumscribed lesion with different light or dark color and telangiectasic vessels
- It is most common types and appears in two subtypes: nodular or nodular ulcerative
- Superficial multi-centric Type
- Morphea Type is the third form of BCC

**BCC may be associated with squamous metaplasia, which is most aggressive and likely to metastasize.*

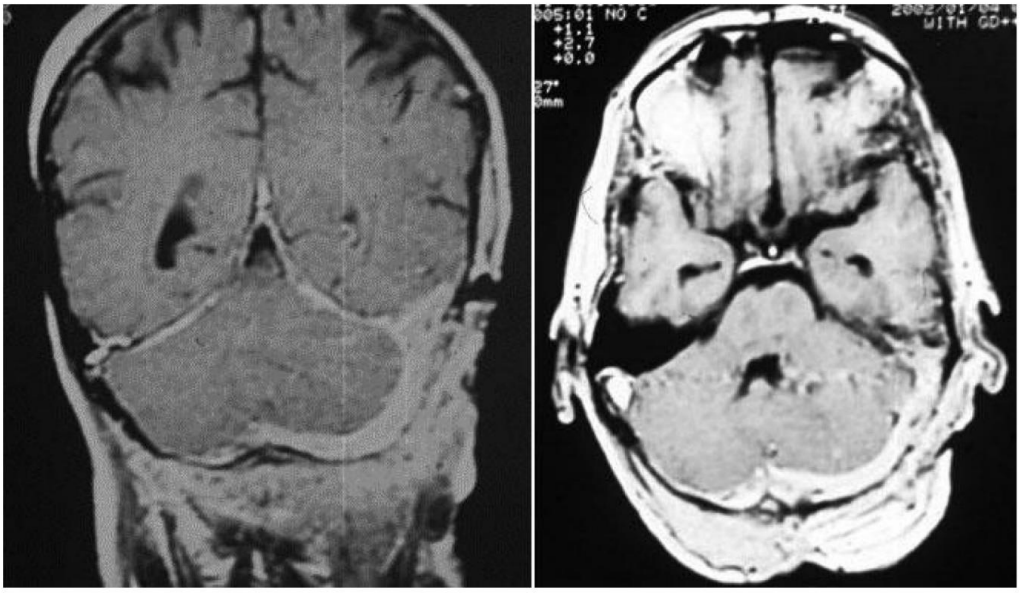

Fig. 1&2: Occipital skalp BCC shown by T1 w. MRI and CT-Scan

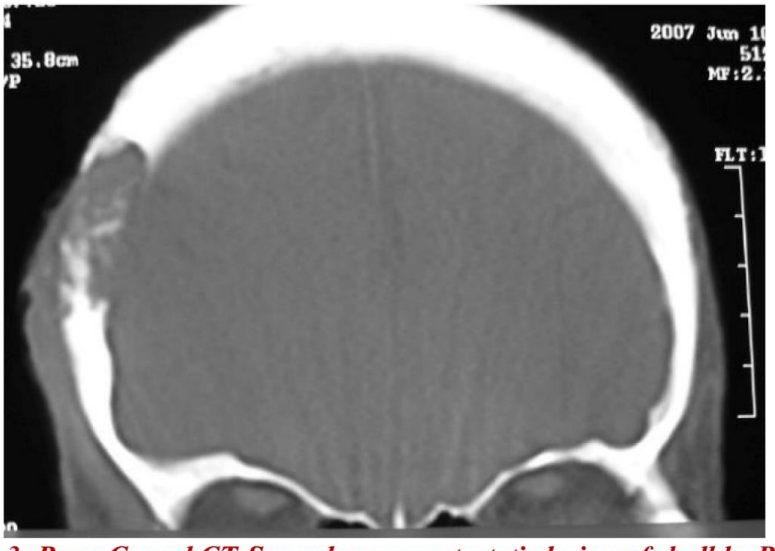

Fig. 3: Bony Cronal CT-Scan shows a metastatic lesion of skull by BCC.

Squamous Cell Carcinoma (SCC)

Introduchtion

This is the second common skin cancer, but highly curable. It originates from keratinizing cell of the epidermis.

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