Oligodendroglioma with a Twenty-Two Year History

Clinicopathological Case Report

M. Aebi and R. Kraus-Ruppert
Department of Neurology, Section of Neuropathology, University of Bern, Freiburgstr. 30, CH-3010 Bern, Switzerland

Summary. Clinicopathologic report of a patient with an oligodendroglioma who ran a 22-year course characterized by focal epileptic seizures of the Jaksonian type. The EEG remained normal for many years. Since the tumor had not been influenced by therapeutic measures, the histologic picture permitted considering some basic problems of origin, growth, and differentiation of oligodendrogliomas.

Key words: Oligodendroglioma – Mixed glioma – Glial cell precursors – Focal epilepsy – Theta-waves.

Introduction

It is well known that oligodendrogliomas may run a long clinical history. Symptoms noted before the operation generally last from 4 to 6 years [15], or according to Elvidge et al. [2] 11.7 years. The symptoms with the longest duration recorded lasted over 29 years [2]. In our patient, epileptic seizures, presumably the sign of tumor, lasted more than 22 years. The present study is concerned with particular histological aspects, tumor growth and differentiation, and clinicopathological correlations of epileptic seizures and brain tumors.

Clinical Report

A previously healthy farmer's help developed paresthesias and itching in the right arm at the age of 27 years (1955). These symptoms were accompanied by sensory disturbances and followed by generalized epileptic seizures. The frequency of seizures increased with time. A neurological examination and an electroencephalogram (EEG) at that time revealed no abnormalities. A diagnosis of temporal lobe epilepsy was therefore made. Administration of diphenylhydantoin reduced the incidence of the fits markedly. Agranulocytosis developed in the
course of the treatment with Phenytoin. The medication was changed to Mephenytoin and phenobarbital but the symptoms and epileptic seizures persisted. The patient was therefore admitted to the Department of Neurology of the University Hospital (1967). Neurological examinations and EEG failed to disclose pathological changes. The patient was discharged and advised to increase the dose of anticonvulsants. Second admission (1972): The EEG revealed intermittent diffuse theta waves of 5—7 cycles/s especially over the left temporal region, which increased in frequency during hyperventilation. Additionally superimposed diffuse 20c/s, beta waves were observed. The findings were interpreted to be due to a pathological focus in the left hemisphere. An angiographic examination was not performed. Treatment with dipotassiumchlorazepat (Tranxilium) was continued. Six subsequent EEGs did not lead to a specific diagnosis. Phlebothrombosis of the left leg developed in November 1976. Headaches became increasingly more frequent and more violent. Eventually, the patient lost consciousness and died within one week.

Pathological Findings

The brain was markedly enlarged, swollen and heavy (1520 g). The gyri were flattened. Pressure marks with hippocampal and cerebellar herniation were noted over the base. The left frontotemporal region presented a slightly elevated area measuring 6 cm in diameter. In this area a fairly vascularized and adherent leptomeninginx covered distended and partly confluent gyri (Fig. 1), which had small

Fig. 1. Left hemisphere, lateral view. TU = tumor; F = frontal lobe; T = temporal lobe; P = posterior central gyrus