THE LONGEVITY OF PATIENTS WITH GLIOBLASTOMA MULTIFORME

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The almost uniformly short life span of patients with glioblastoma multiforme is well known. Many neurosurgeons have based their handling of such patients on this fact. It is therefore of interest when patients with long survival are found. In a review of gliomas at Montefiore Hospital, a few cases were encountered in which the duration was so long that they were deemed worthy of being placed on record. Stimulated by this finding, we have attempted an analysis of factors in prognosis.

MATERIAL

The total number of gliomas reviewed was 165. Of these, 83 (50.4 per cent) were glioblastoma multiforme. For purposes of this presentation, 70 cases were considered. The remainder were omitted mainly because the follow-up was inadequate. Within the group of 70, there were 59 patients who came to necropsy, and 11 in whom the diagnosis was proved by biopsy alone. There were 57 patients upon whom operation was performed, many of these later coming to necropsy. Of these 57 patients, 35 received radiotherapy in addition, and 2 received courses of nitrogen mustard. Of the patients who were not operated upon, only 1 was irradiated.

There was a marked difference in incidence between the sexes; 45 of the patients were males, and 25 females, a ratio of 1.8:1. The age of onset reached its peak in the 6th decade. The youngest patient was 19, the oldest 70. In terms of location of the neoplasm, all patients had some cerebral involvement, but in 1 case the tumor extended in the mid-brain, and in 1 other case the tumor was predominantly metencephalic.

The survival times measured from the first identifiable symptom or sign are shown in Fig. 1. The average duration from the first symptom to exitus was 17 months. However, this average was distorted by the unusual cases to be discussed. The median survival was 8.3 months, a figure that is more indicative of the usual case. Expressed another way, almost 80 per cent of the patients died within 20 months of their first symptom, and 90 per cent within 30 months.

The longest survival was 14 years. There were 5 patients who survived 6 years or longer. In 2 of the latter cases, biopsies were performed early in the course. Since they are representative of the group, they will be described in detail.

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CASE REPORTS


In 1928, at the age of 37, this right-handed white male had a convulsive seizure lasting a few minutes. Thereafter at intervals of about 2 to 3 months, he had attacks beginning with numbness and twitching of the right hand, then a tonic convolution of the right side and subsequent loss of consciousness. In 1931, following an attack, he noticed loss of sensation on the right side of the body and a right hemiparesis. In 1933 a partial motor aphasia developed.

Operation. Dr. Paul C. Bucy operated on him in October, 1933. A firm area measuring 2 cm. in diameter was found on the left side in the gyrus just anterior to the precentral gyrus. The remainder of the brain in the operative field appeared normal, except for very slight flattening of the convolutions. On incision the tumor was tough, and reddish-gray in appearance. An attempt at complete removal was not made because of the location. A small piece was taken for study, and a temporal decompression performed.

Microscopic Examination. The tissue was diagnosed by Dr. Percival Bailey as a malignant glioma, probably a glioblastoma multiforme. The slide was studied by us and this diagnosis confirmed. It should be emphasized that many mitotic figures were present. Fig. 2 illustrates the character of this neoplasm.*

Course. Following the operation, the patient was given a course of roentgen therapy for a total of 6,068 r. and was placed on phenobarbital. For the next 4 years he was free of convulsive attacks. His control over the right side of the body improved, and he was able to write and use tools. He gained in weight and general health. In September, 1937, he was struck by an automobile, and was unconscious for 24 hours. Sometime thereafter his seizures returned. He gradually lost power on the right side, and aphasia became worse.

Fig. 1. Bar graph showing survival time from the first identifiable symptom. Each bar represents the number of patients surviving for a 10-month period. Note that there are 5 patients with survival of more than 5 years.

* We are indebted to Dr. Theodore Rasmussen for permission to examine the slides and reproduce the picture.