POSTOPERATIVE SURVIVAL OF PATIENTS WITH INTRACRANIAL OLIGODENDROGLIOMA WITH SPECIAL REFERENCE TO RADICAL TUMOR REMOVAL

A STUDY OF 26 PATIENTS

GILBERT HORRAX, M.D., AND WILLIAM Q. WU, M.D.*

Department of Neurosurgery, The Lahey Clinic, Boston, Massachusetts

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When Bailey and Hiller suggested in 1924 that certain gliomas were composed of oligodendrocytes, much interest was created concerning the existence of oligodendrogliomas as an entity. In 1926, Bailey and Cushing set apart a group of brain tumors as oligodendrogliomas with histologic verification. Nine cases of such growths out of 254 classified tumors were reported by these authors. One of their patients survived 21 years after the onset of symptoms. Subsequent reports by other authors also suggested that this particular type of glioma was slow in growing and relatively benign. In order to evaluate further the postoperative survival period of patients harboring this tumor, it is our purpose to present the following 26 cases of verified oligodendrogliomas that have been seen at the Lahey Clinic from 1932 to 1949.

Oligodendrogliomas were characterized clinically by Bailey and Cushing as "slow-growing with the appearance of encapsulation, and unless they happen to produce focal and irritative lesions [they] may attain a large size before they make their presence known—so large a size that their removal is well nigh impossible." Pathologically, "these tumors have a pinkish color on fresh section. They also tend to show calcareous deposits often seen on x-ray films." According to Cushing, "when fixed, stained and sectioned by ordinary methods the lesions have a characteristic and often unmistakable appearance, the compact mass of small cells with scanty clear cytoplasm having, as Bailey points out, some resemblance to the section of a woody plant."

In 1935 Elvidge, Penfield and Cone utilized the terms oligodendroglioma and oligodendroblastoma because of differences in the cell types seen in tumors of this group, and Kernohan in 1938 also thought that this differentiation microscopically was desirable.

Although Bailey and Cushing's earlier observations revealed no mitoses in these tumors, further experience has shown that they are not always as innocent and slow in growth as they were thought to be. Abundant mitoses and metastases have been described by Martin, by Bailey and Bucy and

* Formerly Fellow in Neurosurgery, The Lahey Clinic. Now residing in Kansas City, Missouri.
by Eisenhardt. Beck and Russell reported 4 cases which showed metastases throughout the cerebrospinal pathway. Blumenfeld and Gardner also reported a case of disseminated oligodendroglioma.

Martin classified these tumors into (1) oligodendroglialoma of the hemispheres and (2) oligodendroglialoma of the midline. In 1939 a more detailed classification was made by Löwenberg and Waggoner. These authors described (1) bilateral oligodendroglialoma of the hemispheres, (2) unilateral oligodendroglialoma of the hemispheres, (3) intraventricular oligodendroglialomas, (4) oligodendroglialoma of the basal ganglia, (5) oligodendroglialoma of the brain stem, (6) oligodendroglialoma of the cerebellum and (7) oligodendroglialoma of the spinal cord. As an example of the latter, Russell and Bucy recently reported a case in which the initial symptoms were noted 14 years prior to operation.

In respect to the life history and postoperative survival periods of patients having intracranial oligodendroglialomas there are significant data from three recent articles, namely, the 25 cases analyzed by Shenkin, Grant and Drew in 1947, the large series of 165 cases from the Mayo Clinic reported by Earnest, Kernohan and Craig in 1950 and the series of 74 cases from Olivecrona’s clinic reported by Reymond and Ringertz. Previous to these publications, Bailey and Cushing had reported that 4 of their 9 patients were living 4 years or more following operation, and of the 8 patients of Elvidge, Penfield and Cone, 3 were living, the longest survival being 3 years.

Shenkin, Grant and Drew found that the average survival of their patients was a little less than 2 years, and these authors, as well as Elvidge, Penfield and Cone, thought that the length of postoperative survival was disproportionately shorter than the duration of preoperative symptoms. This feature was not substantiated in the report of Reymond and Ringertz as they found no correlation between length of symptoms and survival after operation.

In the series reported by Earnest, Kernohan and Craig there were 112 patients who left the hospital and from 107 of these some follow-up record was obtained. The average survival period of this group from the time of operation until death or until the patient was last heard from was 48 months, but this figure alone is not of great significance, as the authors pointed out. Many of the living patients had not yet had the opportunity of long survival and thus add to the general average. These authors further clearly showed that a far greater percentage of patients was living after what were termed complete removals than those who had had partial removals or biopsies, so that the eventual survival in the more complete operations would undoubtedly be greater as time went on.

In the series from Olivecrona’s clinic the average survival period after operation was 5 years and 3 months, with the longest survival 17 ½ years. In this article there is a complete tabulation of all the cases as to the type of operation and the survival period of each patient. From a study of this table it is apparent that the radical operations accomplished much more than