OSSIFICATION IN GLIOMAS

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Calcification of intracranial tumors has been the subject of numerous histological and roentgenological studies. Martin and Lemmen7 studied 1577 intracranial neoplasms and found that calcification occurred microscopically in 207 cases (13.1 per cent); in 104 cases of this group calcium was visible in the roentgenogram (54.2 per cent). These authors described four different types of histological patterns of calcification, but did not mention ossification and with the exception of a case of mixed ependymoblastoma and osteoblastoma reported by Mackay6 we were unable to find in the literature on gliomas of the central nervous system cases in which ossification had occurred. We have observed ossification in 2 cases; one was in an astrocytoma of the cerebellum of long duration (25 years); the second was in an oligodendrogloma of 9 years’ duration. It is known that calcification is common in both of these types of gliomas.

Mabon et al.5 reviewed 131 cases of astrocytomas of the cerebellum and found calcification radiologically in 11 cases (8.5 per cent) and microscopically in 21 (16.3 per cent). Cushing2 reported calcification visible radiologically in only 1 of 76 cases of cerebellar astrocytomas. In neither of these papers was there mention of the presence of ossification. Earnest et al.3 reviewed 200 cases of oligodendrogloma and found calcium deposits microscopically in 115 (60.7 per cent) and radiologically in 64 cases (38 per cent). There was no report of ossification.

REPORT OF CASES

Case 1. R.S., a 53-year-old white male, was admitted to the University Hospital on Jan. 3, 1955 with symptoms of severe suboccipital pain which radiated to behind the right ear, and muscle spasm in the neck which had persisted for the past 25 years. His wife stated that since their marriage years ago he had invariably complained of excruciating headaches during episodes of vomiting. Eighteen months prior to admission he had noted fatigue, increased sleepiness and blurring of vision. Six months later there developed difficulty in walking and a tendency to veer toward the left. In the last 2 months he was incapacitated.

Examination. The left pupil was larger than the right, and there was bilateral papilledema. He walked with a wide base and tended to stagger and fall backwards. There was mild decomposition of movement of both lower extremities. Deep tendon reflexes were hyperactive in both lower extremities and there was an equivocal Babinski sign bilaterally.

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Roentgenograms of the skull revealed an area of calcification in the midline of the occipital region, roughly ovoid in shape, that could not be seen on the lateral views. Laminagrams showed that this area was 2 cm. above the foramen magnum, immediately dorsal and superior to the fourth ventricle (Fig. 1).

Fig. 1. Case 1. Laminagram of the skull showing a dense image of calcification in the posterior fossa.

Fig. 2. Case 1. Photomicrograph of the cerebellar astrocytoma removed at operation.