POSTOPERATIVE DISSEMINATION OF ASTROCYTOMA OF THE SPINAL CORD ALONG THE VENTRICLES OF THE BRAIN

A CASE REPORT

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Spontaneous dissemination of primary spinal cord tumors is extremely rare1 in comparison with primary brain tumors metastasizing along the neural axis2,3,5,7,9,11,13 as well as to other organs.2,4,6,14 Postoperative spread of spinal cord tumors is also uncommon. We have been able to find only two references of such a spread. Kernohan and Fletcher-Kernohan5 reported 2 cases of ependymomas of the spinal cord which metastasized in the leptomeninges and to the muscles overlying the operative site in one patient, and up and down the subarachnoid space in another. In the latter case, the intramedullary neoplasm consisted of ependymoma and oligodendroglioma while the metastases consisted only of oligodendroglioma. In a case reported by Weiss,12 an ependymoma of the cauda equina was operated upon four times. Several years after the last operation, the tumor appeared in the retroperitoneal space.

Our case is a Grade I–II astrocytoma of the conus medullaris which seeded along the cervical spinal cord and ventricles of the brain postoperatively. We were unable to find a similar case in the literature since 1925, when Bailey introduced the classification of tumors of the glioma group.

CASE REPORT

#33749. R.K., a 39-year-old man, was admitted to Niagara Falls Memorial Hospital on Sept. 12, 1954. He gave a history of sudden collapse of his right knee while kneeling in church in April 1954. At the same time he noted a tingling sensation in the anterior portion of the right thigh and along the calf. He had to lift himself to the erect position. The weakness of the right lower extremity persisted, but the tingling improved. His only discomfort was a later onset of pelvic tightness on exertion. There was no history of sphincter involvement. His past and family histories were not contributory.

He had been first examined on July 28, 1954. There was extreme weakness of all muscles of the thigh bilaterally. The mid-thigh circumference was 6 cm. less on the right side. There were hypalgesia and hypothermia of both anterior thighs and, in patchy distribution, of the left leg and foot. The upper deep tendon reflexes were lively and equal. The right knee jerk was practically absent, left, 1 plus; right ankle jerk 2 plus, left, 1 plus. There was a definite Babinski on the right and equivocal response on the left. The anal sphincter tone was good with active bilateral anal reflexes.

Hospital Course. Myelography was performed on Sept. 17, 1954. The Queckenstedt test was positive for complete block and this was confirmed by obstruction to flow of Pantopaque at D11–D12 interspace. The cerebrospinal fluid protein was 530 mg. per cent with 9 lymphocytes per c.mm.

Operation. A laminectomy was performed from D9 to L1 under local anesthesia on the same day. There was no dural pulsation visible at the level of D10–D11 vertebrae. When

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the dura mater and subarachnoid membrane were opened the cord was found displaced posteriorly by an underlying grayish mass partly protruding from the right anterolateral aspect of the cord. Attempts to resect the mass disclosed its intramedullary origin.

Multiple sections of the lateral mass were taken for microscopic examination. Following this, the greatly enlarged conus medullaris was incised in the posterior midline for 3 or 4 mm. and with a pituitary rongeur two biopsy specimens were obtained. The dura mater was left open but was overlaid with Gelfoam and then the wound was closed in layers.

Postoperative Course. After surgery the patient showed considerable weakness of both lower extremities, more marked on the right side. He was unable to void voluntarily. In general, his recovery was uneventful.

On Oct. 11, 1954, there was return of faint function in the right quadriceps muscles. The power in the left lower extremity was excellent. There were bilateral hypalgesia and hypothermia of both lower extremities, progressively decreasing to the inguinal regions. Position and vibratory sensations were impaired in the right lower extremity. The right knee jerk was absent, left, 1 plus; ankle jerks were 1 plus bilaterally. Abdominal and cremasteric reflexes were present and equal. By October 31 he was able to void voluntarily and was discharged.

He was able to walk for several months with the aid of crutches. He was given a course of radiation therapy consisting of 2400 r administered in 12 sessions to DII in December 1954.

Pathologic Report. The tumor was a fibrillary astrocytoma Grade I–II (Fig. 1).

2nd Hospitalization, July 12, 1955 (Roswell Park Memorial Institute). By this time he had lost the use of the right leg completely. Control of the bladder and rectal sphincter was impaired. During repeated myelography on July 18, 1955, the cerebrospinal fluid pressure was normal. There was a partial block at D12–L1, but the dye flowed freely between this area and the foramen magnum.