INTRAVENTRICULAR MENINGIOMAS OF THE FOURTH VENTRICLE

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Meningiomas of the fourth ventricle are rare. We have been able to compile from the literature a list of only 7 cases (Table 1). Two of these patients had no clinical symptoms referable to the nervous system, and the rather small tumors were incidental findings at autopsy.

**TABLE 1**

*Synopsis of cases in literature*

<table>
<thead>
<tr>
<th>Author</th>
<th>Age &amp; Sex of Patient</th>
<th>Weight or Size of Tumor</th>
<th>Remarks</th>
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</thead>
<tbody>
<tr>
<td>Sachs, E.</td>
<td>38 M</td>
<td>27 gm.</td>
<td>Nonpsammomatous, fibroblastic. Origin in region of inferior tela. One of multiple meningeomas</td>
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<tr>
<td>Vogel &amp; Stevenson</td>
<td>65 M</td>
<td>5 gm., 2.8X1X1 cm.</td>
<td>Neurologically negative. Incidental autopsy finding. Originated in tela choroidea</td>
</tr>
<tr>
<td>Haas &amp; Ritter</td>
<td>41 M</td>
<td>3.6X3X1.2 cm.</td>
<td>Incidental autopsy finding. Pedunculated, fibroblastic</td>
</tr>
<tr>
<td>Zuleta &amp; Londoño</td>
<td>8 M</td>
<td>?</td>
<td>Greyish, soft tumor removed partly by suction. &quot;Diffuse meningioma&quot;(ependymoma?)</td>
</tr>
<tr>
<td></td>
<td>12 M</td>
<td>4X2.5X?</td>
<td>Fixed to floor of 4th ventricle. Bled easily; only biopsy taken. Torkildsen. “Laminar meningioma” (ependymoma?)</td>
</tr>
<tr>
<td>Petit-Dutaillis &amp; Daum</td>
<td>55 F</td>
<td>&quot;Prune&quot;</td>
<td>Survived with neurological deficit</td>
</tr>
</tbody>
</table>

The case described by Abbott and Courville concerns a widespread tumor involving the fourth, third and lateral ventricles as well as the corpus callosum. Although described histologically as fibrous meningioma, the gross morphology certainly does not coincide with the tumors described by Cushing and Eisenhardt, Vogel and Stevenson, Haas and Ritter and Petit-Dutaillis and Daum, which these authors believed to have originated from the inferior tela choroidea.

Zuleta and Londoño, in their 2 cases concerning children, described soft, greyish tumors which bled easily and could be only partly removed by suction. The gross

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description would seem to fit the diagnosis of ependymoma better. Nevertheless, all of these cases have been included in the list of meningiomas of the fourth ventricle on the basis of the given histological diagnosis. Evidently only cases 1, 3 and 4 of the list fall in the category of meningiomas of the inferior tela choroidea.

The following case is submitted, representing the largest of meningiomas of the fourth ventricle heretofore described.

**CASE REPORT**

Mrs. F.T., aged 42, was admitted to St. Joseph's Hospital in Kirkwood on Feb. 13, 1958, in a completely bedridden condition because of inability to balance herself when trying to walk.

Her illness started early in 1955 with staggering gait and numbness of the left side of the face. In June, 1955, she was hospitalized in a hospital elsewhere, where analgesia in the distribution of the left trigeminal nerve with absence of the corneal reflex was found. The spinal fluid was under normal pressure with a total protein of 54 mg. per cent.

She was seen again on the neurological service of the same hospital in January, 1956. She now exhibited some motor weakness of the left trigeminal nerve as well, and moderate nystagmus on lateral gaze was observed. There was dysdiadochokinesia in the left extremities, her gait was more ataxic and there was some doubtful congestion of the left optic disc. Spinal fluid pressure was 240 mm. of water with a total protein of 74 mg. per cent. A diagnosis of pontine glioma was made and the patient was given a series of over forty deep roentgen-ray treatments without any improvement.

By December, 1956, no striking changes had occurred. The patient was severely ataxic. There was moderate nystagmus on lateral and upward gaze and conjugate movements of the eyes to the right were deficient. There was no papilledema. There was an equivocal Babinski response on the left. The patient was mentally alert.

In February, 1957, the patient was unable to walk without support. She had nystagmus as before. Because of contraction of the left masseter muscle it was difficult for her to open her mouth. The jaw jerk was absent. She had no pyramidal tract signs. Her cerebellar function was severely disturbed.

When admitted to St. Joseph's Hospital in February, 1958, she was unable to stand. Otherwise the picture had remained very much the same.

In view of the long history the diagnosis of glioma of the pons seemed to be no longer tenable. Plain films of the skull did not reveal any abnormalities. Pneumoencephalography was done on Feb. 6, 1958, with air entering the cisterna magna but none entering the ventricular system. Ventriculography on Feb. 8, 1958, demonstrated some dilatation of the lateral ventricles and of the third ventricle.

**Operation.** Since these findings were indicative of a posterior fossa tumor, ventriculography was followed by a posterior fossa exploration.

The surface of the cerebellar hemispheres appeared normal and needling of the hemispheres was negative. Following retraction of the tonsils, which were not herniated, a large hard tumor was found to fill the fourth ventricle, extending well up into the tentorial notch, particularly on the left. The tumor was gently and gradually dislodged and removed in toto. It had caused enlargement of the fourth ventricle with anterior displacement of the floor of the ventricle. The point of origin seemed to be in the region of the inferior tela choroidea. There was no particular difficulty in controlling the bleeding and the incision was closed in layers without drainage.

**Postoperative Course.** The patient presented a number of very difficult problems. By 5:00 p.m. on the day of operation she was fully conscious and the vital signs were stabilized except for the temperature, which was rising, as expected. At 10:00 p.m. the patient vomited a large amount of “coffee-ground” material and she continued to do so until noon the following day, when she became unconscious and went into shock. This apparently was partly the result of loss of electrolytes through hyperacid gastric contents. The electrolyte balance was