Meningiomas of the Posterior Fossa without Dural Attachment

A Case Report

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Meningiomas of the posterior fossa are rare. From a total of 1,854 meningiomas collected from the literature, 168 (9 per cent) were situated in the posterior fossa. Meningiomas in the posterior fossa without dural attachment are still more uncommon. To our knowledge 12 such cases have been reported in the literature to 1962 (Table 1).

The diagnosis is doubtful in the 2 children reported by Zuleta and Londoño because the gross description seems to fit the diagnosis of ependymoma better (Schaerer and Woolsey). Abbott and Courville's case of a fibrous meningioma which filled the 3rd ventricle, both lateral ventricles and infiltrated the corpus callosum cannot be regarded as a meningioma of the posterior fossa. Cases 1, 3, 4, 5 and 7 to 12 fall into the category of meningiomas of the posterior fossa without dural attachment. Of these 9, the tumors in Cases 3, 5 and 11 were found at autopsy. In the remaining 6 cases, 4 patients withstood surgery and 2 were considered cured.

We present a case of meningioma of the posterior fossa without dural attachment treated successfully by surgery.

Case Report

Mrs. A., aged 40, was admitted to the Department of Neurology and Neurosurgery, Christian Medical College Hospital, Vellore on July 31, 1962 with headache, nausea, dizziness, diminution in vision and difficulty in walking.

Her illness started in October 1961 with paroxysmal headaches located in the vertex and occipital regions, occurring in the evening and associated with malaise. In February 1962 she consulted a doctor who after a lumbar puncture prescribed streptomycin and INH. Although the headaches were relieved for 4 months, she noticed ringing in the right ear, the sound of a bellows in her head, giddiness and unsteady gait. In July 1962 she started to have early morning headaches associated with nausea and occasional vomiting.

Examination. She was an intelligent, normotensive and well nourished individual. Bilateral papilledema and horizontal nystagmus on lateral gaze to both sides were present. The audiometric and vestibular functions were not suggestive of a cerebellopontine-angle lesion. Incoordination was present and there was dysdiadochokinesia of the left side. The knee jerks were pendular. Her gait was ataxic and on walking tandem she persistently fell to the left. The laboratory data and roentgenograms of the chest and skull were not contributory. The clinical signs were indicative of a massive lesion in the posterior fossa. No air study was performed prior to operation.

Operation, July 31, 1962. Exploration of the posterior fossa was performed. The left cerebellum was bulging and the midline structures were pushed to the right. On needling the left cerebellar hemisphere a firm mass was felt 1 cm. below the surface. Following intraneoplastic decompression the entire tumor was removed. Part of the tumor was lying within the 4th ventricle. Hemostasis was secured easily and the wound was closed in layers without drainage.

Postoperative course was uneventful except for a left lower motor-neuron facial paresis which cleared up in 10 days. She was discharged cured on Aug. 23, 1962.

Pathological Report. The tumor was globular, measured 5 cm. in diameter and had a greyish color. There was a well defined capsule which in one area had been incised. The bulk of the tumor had been removed from within leaving the capsule intact. On section it had a congested appearance and was greyish in color. There were no areas of hemorrhage or degeneration. The tumor weighed a little more than 42 gm.

Microscopically (Figs. 1 and 2) the section showed a cellular neoplasm composed of interlacing bundles of spindle-shaped cells. The cytoplasmic fibrils in areas

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Fig. 1. Low-power photomicrograph showing psammoma bodies.

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TABLE 1

Meningiomas without dural attachment reported in the literature*

<table>
<thead>
<tr>
<th>Case No.</th>
<th>Author</th>
<th>Year</th>
<th>Age</th>
<th>Sex</th>
<th>Weight or Size of Tumor</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Sachs</td>
<td>1936</td>
<td>38</td>
<td>F</td>
<td>3 gm.</td>
<td>4th ventricle. Patient survived op.</td>
</tr>
<tr>
<td>2</td>
<td>Abbot &amp; Courville</td>
<td>1942</td>
<td>15</td>
<td>M</td>
<td>2.8X1X1 cm.</td>
<td>Infiltrated 3rd ventricle, lateral ventricles and corpus callosum. Not primarily of posterior fossa. Survived 5 yrs. after biopsy</td>
</tr>
<tr>
<td>3</td>
<td>Vogel &amp; Stevenson</td>
<td>1950</td>
<td>65</td>
<td>M</td>
<td>2.8X1X1 cm.</td>
<td>Incidental finding at autopsy</td>
</tr>
<tr>
<td>4</td>
<td>Petit-Dutaillis &amp; Daum</td>
<td>1950</td>
<td>55</td>
<td>F</td>
<td>3.6X2.1 cm.</td>
<td>Survived with neurological deficit</td>
</tr>
<tr>
<td>5</td>
<td>Haas &amp; Ritter</td>
<td>1954</td>
<td>44</td>
<td>M</td>
<td>3.6X2.1 cm.</td>
<td>Incidental finding at autopsy</td>
</tr>
<tr>
<td>6</td>
<td>Zuleta &amp; Londoño</td>
<td>1955</td>
<td>8</td>
<td>M</td>
<td>5 gm.</td>
<td>Description of both tumors suspiciously like ependymomas (Schaerer &amp; Woolsey)</td>
</tr>
<tr>
<td>7</td>
<td>Schaefer &amp; Woolsey</td>
<td>1960</td>
<td>42</td>
<td>F</td>
<td>4.8X3.8X4.3 cm.</td>
<td>Intracerebellar. Died in hosp. 4 mos. after op.</td>
</tr>
<tr>
<td>8</td>
<td>Olivecrona</td>
<td>1927</td>
<td></td>
<td></td>
<td></td>
<td>Intracerebellar, probably arising from inferior tela. Died after op.</td>
</tr>
<tr>
<td>9</td>
<td>Christophe &amp; Divry</td>
<td>1947</td>
<td></td>
<td></td>
<td></td>
<td>Intracerebellar. Died after op.</td>
</tr>
<tr>
<td>10</td>
<td>Schreiber</td>
<td>1936</td>
<td>4</td>
<td>cm.</td>
<td>4 cm. diameter</td>
<td>Intracerebellar. Recovered</td>
</tr>
<tr>
<td>11</td>
<td>Martin &amp; Greenfield</td>
<td>1950</td>
<td>45</td>
<td>M</td>
<td>32.5 gm.</td>
<td>In cisterna magna. Died in hosp. before op.</td>
</tr>
<tr>
<td>12</td>
<td>Spurling</td>
<td>1942</td>
<td>16</td>
<td>F</td>
<td></td>
<td>In cisterna magna. Died 6 mos. later. Autopsy showed multiple meningiomas and neurinomas</td>
</tr>
</tbody>
</table>

* Modified from Schaefer and Woolsey.

were elongated. The nuclei were rod-shaped and elongated in those areas; in some they were round and oval. Poorly formed formations of whorls were seen throughout the section. Few psammoma bodies also were seen. In areas there was a palisade arrangement of the cells. Impression: Fibroblastic meningioma.

Discussion

A comprehensive classification of meningiomas without dural attachment should include the following:

1. Meningiomas arising from the choroid of the 4th ventricle and lying wholly within it.
2. Meningiomas arising from the inferior tela and lying partially in the 4th ventricle and partially in a cerebellar hemisphere.
3. Meningiomas lying in the cisterna magna. In our case the site of origin was probably from the inferior tela. Once the tumor has attained a large size, however, it is difficult to indicate precisely the locus of its origin. The fact that meningiomas with unusual sites of attachment may be associated with multiple meningiomas or other tumors must not be forgotten.

Summary

A case is presented of a lady aged 40 years who had a meningioma of the posterior fossa with no dural attachment, which was removed successfully.

References

9. SACHS, E. Cited by Cushing and Eisenhardt (pp. 139–140).

**Fig. 2.** High-power photomicrograph showing fibroblastic meningioma.