Intraspinal Epidermoids

Report of Two Cases

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Epidermoid tumors occur infrequently in the central nervous system. Their incidence is estimated variously at from 0.2–1 per cent of all intracranial tumors. The incidence of intraspinal epidermoids is even less. MacCarty and his associates of the Mayo Clinic found only 3 intraspinal epidermoids among 44 epidermoids of the central nervous system. More recently Manno et al. from the same clinic made a comprehensive review of the literature. They collected 88 cases of intraspinal epidermoids, and added 2 of their own, bringing the number to 90.

It is the purpose of this communication to put on record 2 more cases. One of them is a verified cervical epidermoid communicating with a dermal sinus. The other is a low-dorsal epidermoid, producing compression of the cord indistinguishable from other space-taking intraspinal lesions.

Case Reports

Case 1. A 5-year-old boy was seen because of a draining sinus in the midline of the back of his neck (Fig. 1). It had been present since birth. The orifice of the sinus was at the center of a small circular bluish mass and surrounded by a tuft of long yellow hairs. The child was brought to the hospital because his schoolmates were fond of pulling on the hairs. There was no other complaint and he was free from neurological symptoms.

Roentgenography revealed multiple bony anomalies involving the cervical and dorsal vertebrae and the ribs (Fig. 2).

At operation an elliptical incision, surrounding the sinus, was made. The dissection was deepened with the tract in the middle until it was found that it passed through a bony mass consisting of the fused spinous processes of C3–C5 vertebrae.

Laminectomy of C2–C6 was completed and the tract was followed until it was found attached to the dorsal aspect of the dura mater at C4 level. The dura mater was opened. On the posterior surface of the cord two glistening masses were found. One was the size of a walnut and the other was a little smaller. The capsule of each was opened and their characteristic-looking contents were evacuated completely. The deep part of the capsule was adherent to the cord and no attempt at its excision was done. There were two indentations, corresponding to the two excised masses, on the spinal cord.

Recovery was uneventful. Pathological examination revealed the typical picture of epidermoid (Fig. 3).

Case 2. A 24-year-old university student was seen because of inability to walk. He was well until 4 years prior to admission when he started to feel numbness and
sensation of “pins and needles” in his left foot. This sensation extended upward until the whole lower limb was involved in 6 months. Four months later, he became aware of weakness of the left lower limb. A year later, the right lower limb was affected in the same manner. Weakness of both lower limbs progressed until he was unable to walk. The patient had been a football player. There was history of trauma to the back on the football field, 6 months prior to the onset of his symptoms.

Examination revealed spastic paraparesis, the left side being more affected. Hypesthesia was more marked on the right side. There was a definite sensory level at the umbilicus. Deep sensation was impaired, more so on the left side. The lower abdominal reflexes were absent. Plantar reflexes were extensor on both sides. Manometry showed a complete block. Total proteins in the cerebrospinal fluid were 46 mg. per cent with 4 lymphocytes. Myelography revealed complete arrest of contrast medium opposite D10 vertebra. This was typical of an extramedullary tumor. There was a cutaneous nevus, about 6 cm. in diameter, overlying D13 vertebra.

Laminectomy of D8–D11 was done. An oval tumor, 1.5 X 1 cm. in size, was found on the left side of the cord opposite D9–D10 vertebrae (Fig. 4). It was identified immediately as epidermoid. The capsule was incised and the characteristic contents came out in the form of laminated flakes. The deep part of the capsule was firmly adherent to the spinal cord. No attempt was

<table>
<thead>
<tr>
<th>Group</th>
<th>No. of Cases (Manno et al.)</th>
<th>No. of Cases (Present Paper)</th>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>24</td>
<td>0</td>
<td>History of tuberculous meningitis</td>
</tr>
<tr>
<td>2</td>
<td>15</td>
<td>0</td>
<td>History of lumbar punctures</td>
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<tr>
<td>3</td>
<td>6</td>
<td>1</td>
<td>Associated communicating dermal sinuses</td>
</tr>
<tr>
<td>4</td>
<td>10</td>
<td>1</td>
<td>History of trauma</td>
</tr>
<tr>
<td>5</td>
<td>35</td>
<td>0</td>
<td>Miscellaneous findings</td>
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</tbody>
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made to extirpate it completely. Unfortunately, because the pathology was so evident, a biopsy from the flimsy capsule was overlooked.

Recovery was satisfactory. In 4 weeks he was able to walk with some help. When seen 4 months later he was once more resuming his studies and was free from neurological abnormalities.

Discussion

Manno et al.7 classified the 90 cases they collected from literature into 5 groups (Table 1). Case 1, described herein, falls into Group 3. They are epidermoids with associated communicating dermal sinuses. There are 6 cases in this group and the addition of Case 1 will bring the number to 7. Certain important features distinguish Case 1 from those already reported. To bring out these differences the original table of Manno et al. is reproduced with addition of the new case (Table 2).

First and foremost is the situation. It is the only one in the cervical region. It contains 2 epidermoids, but in this respect it is similar to that of List.5 There is no history of meningitis but this feature also is shared by the case of Black and German.6 It is felt that its high situation is responsible for its freedom from infection. It is remarkable that in Case 2 the lesion was one of the highest in the series, at D9-D10.

The importance of sinuses anywhere along the spinal axis cannot be overemphasized. If roentgenograms reveal in addition to a sinus the presence of underlying spina bifida or, for that matter, multiple bony anomalies, radical exploration is indicated. This should be carried out whether or not there is any evidence of infection or abnormal neurological signs.5

Case 2 falls into Group 4 of Manno et al.7 History of previous trauma is the distinguishing feature. There are 11 cases including our own. The role of trauma is difficult to evaluate. It is probable that trauma stirs up into activity a congenital tumor which is already present but slowly growing.

The significance of the dermal nevus at D12 level is difficult to assess except to note that both lesions are congenital.

Aseptic meningitis is a frequent complication of operations on epidermoids. It was found in 10 patients out of 27 operated upon by Tytus and Pennybacker.11 It is believed to be caused by contamination of the operative field by the cholesterol contained in the tumor. From our experience with 9 cases of intracranial epidermoids, we feel that incomplete evacuation is a potent cause of this complication.

Thorough and complete evacuation of the contents is not inconsistent with a conservative attitude toward that part of the capsule adherent to the cord. Complete extirpation of the capsule is not necessary for recovery. Attempt to remove it completely may result in serious damage to the cord.8 Recurrence may occur, but this takes years to make its appearance. The rate of growth is extremely slow. In Case 1 the tumor was symptomless at the age of 5 and in Case 2 it started to make its presence felt when the patient was 20.

Summary

The cases of 2 patients having intraspinal epidermoids are reported. Case 1 presents certain unusual features. It was an instance of 2 verified cervical epidermoids associated with a dermal sinus. There was no history of meningitis. The patient was symptomless. Case 2 was a dorsal
epidermoid, with history of trauma, producing the usual features of compression of the cord.

Aseptic meningitis, a frequent postoperative complication, is discussed briefly. The importance of complete evacuation of the tumor with conservative therapy of its adherent capsule is stressed. With these 2 new cases added, the number of intraspinal epidermoids found in the literature is 92.

References