Choroid plexus cyst of the lateral ventricle in an elderly man

Case report

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The authors report a case of a symptomatic choroid plexus cyst located in the right lateral ventricle of a 64-year-old man who presented with focal epilepsy. The cyst was diagnosed by computerized tomography, and was proven pathologically at surgery. Total removal was accomplished, with subsequent disappearance of the seizures. A brief review of the literature is included.

KEY WORDS • choroid plexus cyst • computerized tomography • epithelium-lined cyst • intraventricular tumor • lateral ventricle

Choroid plexus cysts of the lateral ventricle represent one of a variety of epithelium-lined cysts of the neuraxis. These cysts are a relatively common finding at autopsy. Shuangshoti and Netsky noted that cysts of the telencephalic choroid plexus were observed in 66% of 124 routine postmortem specimens. These cysts are known to cause few clinical symptoms. Neither Dandy nor Obrador, et al., have described a case of a cyst that produced symptoms in their very extensive reviews of lateral ventricle tumors. Since Baker and Gottlieb first described this condition in 1956, only seven symptomatic cysts of the choroid plexus of the lateral ventricle have been reported in the literature. The patients reported previously were all under 21 years of age. We are reporting a case of symptomatic choroid plexus cyst of the lateral ventricle in an elderly man.

Case Report

This 64-year-old man was admitted to our hospital on July 1, 1982, with a 1-year history of focal convulsions of the left arm. The frequency of the episodes had gradually increased during the 3 months prior to admission.

Examination. Physical and neurological examination was unremarkable. An electroencephalogram revealed dysrhythmic discharges with slow waves over the right frontoparietal and temporal regions. Plain radiographs of the skull were normal. Axial and coronal computerized tomography (CT) scanning showed a large low-density area in the right lateral ventricle, especially the trigone and temporal horn, with a small area of calcification. The mean density values of the lesion ranged from 4 to 10 Hounsfield units in different cuts, the same values as those of cerebrospinal fluid (CSF). A CT scan with contrast infusion revealed a well defined contrast-enhancing area adjacent to the calcification, which appeared to represent an anteriorly displaced right choroid plexus (Fig. 1). Carotid and vertebral angiography showed only an avascular area in the same region. A technetium-99 sodium pertechnetate brain scan was negative.

Fig. 1. Contrast-enhanced computerized tomography scans, axial view (left) and coronal view (right), showing a large low-density area in the right lateral ventricle, especially in the trigone and temporal horn. The mean density values ranged from 3 to 9 Hounsfield units, similar to those of cerebrospinal fluid. There is anterior displacement of the enhancing structure and an area of calcification appearing to be the right choroid plexus (arrow).
**Operation.** The patient underwent a right parieto-occipital craniotomy. The trigone of the right lateral ventricle was entered via a parieto-occipital cortical incision, and a whitish-gray cyst was identified (Fig. 2 left). With the aid of the surgical microscope, the cyst was easily separated from the ependymal walls, but was firmly attached at one point to the normal-appearing choroid plexus, which had been displaced anteriorly due to the cyst. The punctured and collapsed cyst was completely removed after coagulation and resection at its attachment (Fig. 2 right). The cyst extended from the trigone and occupied the body and temporal horn of the lateral ventricle. It contained a crystal-clear fluid similar to CSF. The CSF composition in the lateral ventricle was normal, with a protein level of 20 mg/dl.

**Pathological Examination.** The fluid from the cyst contained 30 mg/dl of protein, 65 mg/dl of glucose, and no cells. The operative specimen consisted of a smooth thin-walled whitish-gray cystic structure originating from the normal choroid plexus, and measuring approximately 2.4 \times 2.8 \times 8.8 \text{ cm} (Fig. 3). Microscopic examination showed the wall of the cyst to be composed of a thin loose network of connective tissue. The inner surface of the cyst was lined in part by a single layer of flattened epithelial cells which had ill-defined borders, but otherwise there was no distinctive lining (Fig. 4).

**Postoperative Course.** The patient’s postoperative
Intraventricular choroid plexus cyst

**Table 1**

<table>
<thead>
<tr>
<th>Authors, Year</th>
<th>Age</th>
<th>Sex</th>
<th>Symptom</th>
<th>CSF Composition</th>
<th>Cyst Location</th>
<th>Surgical Approach†</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baker &amp; Gottlieb, 1956</td>
<td>10 yrs</td>
<td>M</td>
<td>episodic headaches</td>
<td>protein: 30 mg/dl</td>
<td>It trigone</td>
<td>parietooccipital</td>
</tr>
<tr>
<td>de la Torre, et al., 1963</td>
<td>4 yrs</td>
<td>F</td>
<td>seizures</td>
<td>normal</td>
<td>rt trigone</td>
<td>postero-parietal</td>
</tr>
<tr>
<td>Neblett &amp; Robertson, 1971</td>
<td>9 yrs</td>
<td>F</td>
<td>episodic headaches</td>
<td>protein: 33 mg/dl</td>
<td>body of lt lat. vent.</td>
<td>transcallosal</td>
</tr>
<tr>
<td>Andreussi, et al., 1979</td>
<td>3 yrs</td>
<td>M</td>
<td>episodic headaches</td>
<td>---</td>
<td>body of lt lat. vent. invaginated into 3rd ventricle</td>
<td>transfrontal</td>
</tr>
<tr>
<td>Giorgi, 1979</td>
<td>7 mos</td>
<td>M</td>
<td>excessive head enlargement</td>
<td>normal</td>
<td>body of rt lat. vent. &amp; trigone</td>
<td>---</td>
</tr>
<tr>
<td>Vaquero, et al., 1980</td>
<td>20 yrs</td>
<td></td>
<td>focal epilepsy</td>
<td>---</td>
<td>It trigone</td>
<td>---</td>
</tr>
<tr>
<td>Dempsey &amp; Chandler, 1981</td>
<td>21 yrs</td>
<td>F</td>
<td>episodic headaches</td>
<td>---</td>
<td>body of rt lat. vent. &amp; trigone</td>
<td>---</td>
</tr>
<tr>
<td>Hatashita, et al., 1984</td>
<td>64 yrs</td>
<td></td>
<td>focal epilepsy</td>
<td>protein: 20 mg/dl</td>
<td>rt trigone</td>
<td>parietotemporal</td>
</tr>
</tbody>
</table>

* CSF = cerebrospinal fluid; lat. vent. = lateral ventricle; --- = not given.
† Total removal was accomplished in all cases, and all patients recovered completely.

course was uneventful. He was discharged from the hospital on August 2, 1982, 3 weeks following surgery, in good neurological condition. He has had no further focal seizures, and is still doing well.

Discussion

The eight cases of confirmed symptomatic choroid plexus cysts of the lateral ventricle reported in the world literature, including the present case, are summarized in Table 1. In four of these cases, including ours, the cysts were located in the trigone. In three other cases they were primarily in the body of the lateral ventricle. In the case reported by Andreussi, et al.,1 the cyst was almost completely invaginated into the third ventricle. Although these previously reported cases all involved children and young adults under the age of 21 years, our patient was 64 years old. In five of these cases, primary complaints consisted of episodic headaches, probably because of intermittent obstruction of the occipital and temporal horns or the foramen of Monro. In the three other cases, including ours, focal epilepsy, presumably due to direct parenchymal compression, was the prominent symptom. In the five cases in which CSF was examined, the protein values were normal. Total removal of the cyst was performed in all eight cases, and all the patients have recovered completely. Thus, choroid plexus cysts are benign and can be completely removed, similar to the so-called “colloid cyst” of the third ventricle.

Cysts lined by a single layer of cuboidal or columnar epithelium (for instance, colloid or choroid plexus cysts) have been described within the ventricular system. Some authors3,4,5 have noted that so-called “symptomatic colloid cysts,” situated chiefly in the anterior third ventricle, are frequently attached to the choroid plexus by a narrow pedicle or by a broad base and are found to contain jelly-like fluid at surgery. The exact origin and pathogenesis of the colloid cysts are still under discussion. On the other hand, in all eight cases of symptomatic choroid plexus cysts, including our own, the lesions were situated within the lateral ventricle. Except for the case of de la Torre, et al.,2 which was not reported in detail, all cysts but one contained clear fluid similar to normal CSF, and at surgery were found to be firmly attached at one point to the normal choroid plexus. These findings clearly implicate the choroid plexus as the site of origin of the lesion, differentiating this cyst from the colloid cyst.

References


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