Colloid Cysts of the Third Ventricle
A Review of 36 Cases

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Summary

Thirty-six colloid cysts were treated from 1949 to 1983. There were 26 male and 10 female patients, ranging in age from 12 to 65 years old, 60% between 31 and 40 years. Headache or disturbed mental function was the most frequent complaint, papilloedema the most frequent sign.

The patients were classified into 3 groups by symptoms and signs;
Group I (17 patients): Headache, papilloedema and no neurological signs.
Group II (6 patients): Fluctuating or progressive dementia.
Group III: Twelve cases with “classical” features, episodic headache and drop attacks.

One patient could not be classified in any of these groups.

Seventeen of 36 patients were diagnosed by ventriculography, 19 patients were diagnosed by CT scan. CT scan was the most reliable diagnostic study, but was unavailable in the earlier part of the series.

All patients have been operated by transventricular exposure of the right foramen of Munro with incision of the middle frontal gyrus in an antero-posterior linear manner.

Twenty-five of 36 patients showed an excellent operative result, and nine had a good result, one of the 9 patients dying of an unrelated intracerebral haemorrhage 4 years after operation. Two patients had a poor result, characterized by memory loss and confusion. One of these died of an unknown cause 5 years after operation.

Keywords: Colloid cyst; normal pressure hydrocephalus; CT scan.

Introduction

Colloid cysts of the anterior third ventricle are relatively uncommon. Their incidence was reported by Russell and Rubinstein 15 as 2% of all intracranial tumours verified at autopsy. In Poppen’s series 13 colloid cysts formed 0.5% of 1,295 verified intracranial tumours.

Controversy remains as to the exact origin of the lesions. Arien Kappers 1 regards them as arising from neural epithelium, Shuagshoti et al. 17 take the view that they arise from embryonic cell rests of the paraphysis.

Following Dandy’s initial report in 1933 5 many neurosurgeons have reported total removal of these lesions. Thus, Greenwood 6 reported eight cases of colloid cyst, and operated on five with one death. Little 11 reported three deaths in a series of 38 colloid cysts. Up until 1950, surgical mortality appeared to be about 20%, unusually high for a benign tumour. Many efforts have been made to reduce this operative mortality 12.

The development of CT scanning, however, has made non-interventional plain X-ray examination of the skull easier and enhanced the opportunities for early diagnosis of this quite typical lesion and therefore surgery at a less advanced stage. The safety of investigation has been much enhanced as a result.

This study documents the results of surgical removal of 36 colloid cysts in the Gough Cooper Department of Neurological Surgery in the National Hospital, Queen Square and the Maida Vale Hospital over the past 33 years.

Materials and Methods

Thirty-six patients with colloid cysts of the anterior third ventricle have been seen in the academic department of the National Hospital, Queen Square, or the Maida Vale Hospital often after transfer from neurological departments of associated hospitals in London, between 1949 and 1983. All cases were operated upon either by Professor Valentine Logue or Professor Lindsay Symon. Eighteen operations were without the microscope and eighteen with the microscope. The age and sex distribution is shown in Table 1. There were 26 males and 10 female cases with ages ranging from 12 to 65 years. The mean age
Table 1. Age and Sex Distribution

| Sex  | Age group | 0-20 | 21-30 | 31-40 | 41-50 | 51-60 | 61+ |
|------|-----------|------|-------|-------|-------|-------|-----|-----|
| Male |           | 3    | 5     | 7     | 8     | 2     | 1   | 26  |
| Female |         | 0    | 3     | 4     | 2     | 1     | 0   | 10  |
| Total |           | 3 6  | 8     | 10    | 10    | 3     | 2   | 36  |

Table 2. Duration of the Symptoms

<table>
<thead>
<tr>
<th>Months</th>
<th>Years</th>
<th>1</th>
<th>1-6</th>
<th>6-12</th>
<th>1-2</th>
<th>2-3</th>
<th>Over 3</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Case no.</td>
<td></td>
<td>5</td>
<td>7</td>
<td>7</td>
<td>10</td>
<td>3</td>
<td>4</td>
<td>36</td>
</tr>
</tbody>
</table>

was 37 years. The disease predominated in young middle age, 19 patients being between the ages of 31 and 50 (54%), Table 2.

In our classification of presenting symptoms, we have followed the proposals of Kelly9—who described three main groups:

- Group I: Headache, papilloedema and no localizing features.
- Group II: Fluctuating or progressive dementia.
- Group III: Cases with so-called classical features—some episodic headache and drop attacks.

We have had in addition to add a fourth group, one of our cases presenting without any of the findings of groups I-III of Kelly, but simply with CSF rhinorrhea. This was discovered on CT scanning to be associated with hydrocephalus and the presence of a colloid cyst.

We have classified the follow-up results into 4 groups:

- Group I: Excellent result, no neurological abnormality, uneventful course of life.
- Group II: A good result though the patient had minimal neurological abnormality and was not handicapped in everyday life.
- Group III: A poor result, the patient showing distinct neurological abnormality and being handicapped in his everyday life.
- Group IV: Death.

Signs and Symptoms

The interval between the first symptom and admission to hospital ranged from hours in the day of onset to 7 years. Twenty-four of the 36 patients presented more than 6 months after their initial symptom (Table 2).

Table 3 characterizes the main symptoms. Thirty-three patients presented with headache, only 3 had no headache. Seven patients gave a history of episodes of unconsciousness and 14 showed disturbance of mental function. Seventeen cases showed visual disturbance, 15 blurred vision and 2 diplopia, the duration ranging from 1 month to 36 months. Twelve patients presented with headache and vomiting, and one patient was admitted unconscious having had a lumbar puncture at another hospital. Six patients had difficulty in walking and some weakness of the legs. One patient presented no complaints and was diagnosed incidentally on CT scan. One patient presented with CSF rhinorrhea and on investigation was found to have quite marked hydrocephalus and a large colloid cyst.

At the time of admission, 12 patients showed mental retardation, 7 indeed were drowsy, confused or semiconscious. Twenty-three patients showed papilloedema, 8 of them with acute changes including retinal haemorrhages. An upper motor neurone seventh nerve palsy was present in 7 patients, and nystagmus in 4. Five patients showed hyperreflexia with extensor plantar responses and incoordination (Table 4). Table 5