Epilepsy in Chronic Subdural Haematoma

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Summary

Out of 130 patients operated upon for chronic subdural haematoma, 9 presented with epileptic fits before surgery. 5 patients suffered generalized, and 4 partial seizures. The early operative results were very good, and follow-up lasting for at least 3 years revealed that 7 patients were seizure free, and only two of them continued with epileptic seizures.

However 7 patients, who did not suffer epilepsy before the evacuation of haematoma developed epilepsy within the first year after surgery. The overall incidence of postoperative epilepsy was 7%. The authors suggest that the capsule of the haematoma plays an important role in the incidence of epilepsy after surgical treatment of chronic subdural haematoma.

Keywords: Epilepsy; chronic subdural haematoma.

Introduction

Post-traumatic intracranial haemorrhage increases the risk of post-traumatic seizures. Epileptic fits follow subdural or intracerebral haemorrhage in about 40% of patients. However, these seizures commonly follow laceration of the brain surface. Chronic subdural haematoma /chsh/, despite its traumatic origin is a different entity, because of little or no damage to the brain. Data concerning the problem of epilepsy in chsh are very limited. McKissock et al. stated that they are uncommon and usually associated with a bad prognosis.

Clinical Material

We retrospectively analyzed 130 cases of chsh treated surgically in our Department. Only those patients in whom a 3 year follow up could be achieved were taken into the analysis. All patients were treated by burr holes followed by subdural closed system drainage for 24 hours postoperatively. 9 of them (7%) presented with seizures before surgery. They were all men, 30 to 70 years old. All of them sustained mild head trauma, 6 weeks to 6 months before surgery, and the first epileptic fits occurred not earlier than 6 weeks after trauma. In other words, it seems unlikely that in any of our cases a preexisting haematoma-independent epilepsy was present.

All patients were operated upon within the first week after seizures. 4 patients presented with partial seizures contralateral to the haematoma, 2 of them had also hemiparesis, one contra- and one homolateral to chsh. 5 patients presented generalized seizures. 4 of them had no focal deficits, and the fifth one had hemiparesis contralateral to chsh, which developed after the first seizures. This last patient was 70 year old, but the other 4 were younger than 41 years. There were no chronic alcoholics among these patients.

In these 9 patients CT-scan revealed a hypodensive extracerebral lesion characteristic for chsh, and in one - a 70 year old man who developed hemiparesis after seizures –, CT showed fresh haemorrhage into the haematoma cavity. All haematomas were located in the parietal region.

Early postoperative results were very good, all patients were neurologically intact and had no postoperative seizures. They all took phenytoin postoperatively. Follow-up – 3 to 10 years after surgery – revealed that 7 of them were well and epileptic fits never occurred again. The other two continued with general seizures, which appeared again within the second or third month after surgery and

Table 1. Clinical Data of Patients Suffering Epilepsy Before the Evacuation of chsh

<table>
<thead>
<tr>
<th>No</th>
<th>Age</th>
<th>Symptoms before surgery</th>
<th>Early result</th>
<th>Follow-up</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>30</td>
<td>partial seizures only</td>
<td>very good</td>
<td>very good</td>
</tr>
<tr>
<td>2</td>
<td>31</td>
<td>generalised seizures only</td>
<td>very good</td>
<td>very good</td>
</tr>
<tr>
<td>3</td>
<td>32</td>
<td>generalised seizures only</td>
<td>very good</td>
<td>very good</td>
</tr>
<tr>
<td>4</td>
<td>55</td>
<td>partial seizures only</td>
<td>very good</td>
<td>very good</td>
</tr>
<tr>
<td>5</td>
<td>65</td>
<td>partial seizures and homolateral hemiparesis</td>
<td>very good</td>
<td>very good</td>
</tr>
<tr>
<td>6</td>
<td>65</td>
<td>partial seizures and contralateral hemiparesis</td>
<td>very good</td>
<td>very good</td>
</tr>
<tr>
<td>7</td>
<td>70</td>
<td>generalised seizures and contralateral hemiparesis</td>
<td>very good</td>
<td>very good</td>
</tr>
<tr>
<td>8</td>
<td>40</td>
<td>generalised seizures only</td>
<td>very good</td>
<td>generalised seizures</td>
</tr>
<tr>
<td>9</td>
<td>generalised seizures only</td>
<td>very good</td>
<td>generalised seizures</td>
<td></td>
</tr>
</tbody>
</table>
chsh, below 41 years of age, and that fits were the only
eral seizures occurred mainly in young patients with
results are opposite to these conclusions and revealed
is uncommon, and usually entails a bad prognosis. Our
with hemiparesis contralateral to the haematoma.
No Age Symptoms before surgery Early Follow-up
1 40 generalised seizures only very good generalised seizures
2 41 generalised seizures only very good generalised seizures
3 40 increased ICP very good generalised seizures
4 42 increased ICP very good generalised seizures
5 50 hemiparesis very good generalised seizures
6 52 increased ICP very good generalised seizures
7 57 mental changes very good generalised seizures
8 60 mental changes very good generalised seizures
9 65 hemiparesis very good generalised seizures
10 67 hemiparesis very good generalised seizures
11 75 mental changes very good generalised seizures

Table 2. Clinical Data of Patients with Postoperative Epilepsy

continued with a frequency of every 2/3 months. Control CT-scan
was normal in these patients.

In 122 patients who had no seizures before the evacuation of
chsh, 7 /6%/ developed seizures. 2 of them presented general fits
within the first week after surgery and despite anticonvulsants con-
tinued them with a frequency of 1–2 fits every month. The other 5
presented with general seizures which occurred 3–12 months after
surgery and continued with a frequency of 1–2 per month. Before
evacuation of chsh 3 of these 7 men presented symptoms of intra-
cranial hypertension only, two had mental changes, and 2 presented
with hemiparesis contralateral to the haematoma.

Table 1 shows the patients who had seizures before surgery, and
Table 2 shows patients who developed seizures after evacuation of
the haematoma.

Discussion

The most common factors which increase the risk of
post-traumatic epilepsy are brain laceration, dura
tearing, intracranial haemorrhage, and prolonged post-
traumatic amnesia2.5. In chsh there usually exists only
one primary factor, i.e. intracranial haemorrhage2.10,
11. Generally, there is no brain damage, and also in
our patients there were not CT signs of brain damage13.

Little is known about epilepsy due to chsh. Mc-
Kissock et al.12 stated, that such clinical presentation is
uncommon, and usually entails a bad prognosis. Our
results are opposite to these conclusions and revealed
that all patients with epileptic fits before surgery were
well after the evacuation of chsh. However, two of them
developed late epilepsy. It is worth stressing, that gen-
eral seizures occurred mainly in young patients with
chsh, below 41 years of age, and that fits were the only
clinical presentation. The presence of a haematoma
capsule may irritate the cortex and produce seizures6,
11. The reduction of cerebral blood flow due to the
compression of the brain by haematoma1 can also con-
tribute to the manifestation of the lesion in the form
of seizures.

The overall incidence of seizures in the pre-operative
course of chsh was 7%. It is much lower than with
other intracranial post-traumatic lesions, but such
cause must be taken into account in adults who develop
late epilepsy, especially as some of them cannot re-
member trivial trauma, which could be the cause of chsh3
10, 14.

Postoperatively, epilepsy developed in 9 patients,
but 2 of them had fits before surgery. This incidence
of postoperative epilepsy is similar to that, found in
other series3, 4, 8, 14. Kotwica and Brzeziński7 reported
that after capsulectomy patients had no seizures, and
thus it is likely, that the presence of the capsule is the
main reason for postoperative epilepsy. However, the
capsulectomy gives the higher morbidity after surgery6,
16, and the decision for capsulectomy must be taken
with special care.

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