Intracranial Double Extradural Haematoma: A retrospective Analysis

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ABSTRACT:
Aims: A retrospective study was conducted to analyse epidemiology, location, clinical profile and outcome of intracranial double extradural haematoma (EDH).

Materials and Methods: Twenty eight cases of double EDH were analysed. All the cases were studied for their mode of injury, clinical presentation, level of sensorium at the time of injury. CT scan finding and outcome after surgery was compared with single EDH Cases.

Results: Out of 710 cases, 28 cases had double EDH. There were bilateral EDH in 23 cases, multiple EDH in 2 cases and unilateral double EDH was present in 3 cases. The most common site was frontal (70%). The majority of patients (80%) were in altered sensorium from the time of injury, similar situation was seen in 50% of cases with single EDH. The number of patients having a low GCS score was higher when first examined in the double EDH group and the mortality rate was 36 as compared to 9% in the single EDH group.

Conclusion: Majority of double EDH cases presented with a low GCS and there was a relatively quick neurological deterioration in these cases.

Key words: Intracranial double extradural haematoma, head trauma, CT scan.

I. INTRODUCTION
Intracranial double extradural haematoma (EDH) was rarely detected before the introduction of computed tomography (CT), Roy (1884) reported first case of bilateral EDH. 1 Only isolated cases were described prior to 1980 and most of these were diagnosed at autopsy. 2,3 Double EDH may be unilateral or bilateral.

The incidence varies from 2-25% of all EDH in different series and its presence at more than two sites is rare. 4 Incidence of double EDH in children is rarer and the literature search revealed reports of 5 cases. 4 I studied double acute EDH retrospectively.

II. MATERIALS AND METHODS
Between 2006 and 2016, 710 cases with Intracranial EDH were surgically treated in Neurosurgery department, Calcutta National Medical College, Kolkata. All cases were examined clinically and plain CT scan of the head was performed.

III. RESULTS
Intracranial double EDH was found in 28 patients (3.9%). These cases were in the age group of 6 to 80 years, mean age being 29 years. 5 cases were in the age group of 6-16 years. 71% were male and 29% were female. Vehicular accident was the cause of head injury in 68.6% of cases. In the pediatric age group fall from height was found in 80% of cases. The clinical state at the time of neurological examination shown in table.
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Clinical Presentation at the time of admission

<table>
<thead>
<tr>
<th>Clinical Presentation</th>
<th>Single EDH (n=71)%</th>
<th>Double EDH (n=29)%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conscious Throughout</td>
<td>40</td>
<td>04</td>
</tr>
<tr>
<td>Initially unconscious became conscious</td>
<td>21</td>
<td>14</td>
</tr>
<tr>
<td>Lucid interval</td>
<td>23</td>
<td>05</td>
</tr>
<tr>
<td>Unconscious throughout</td>
<td>12</td>
<td>74.2</td>
</tr>
<tr>
<td>Hemiparesis</td>
<td>64</td>
<td>35</td>
</tr>
<tr>
<td>Pupillary dilatation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unilateral</td>
<td>20</td>
<td>7</td>
</tr>
<tr>
<td>Bilateral</td>
<td>12</td>
<td>17</td>
</tr>
<tr>
<td>Decerebration</td>
<td>12</td>
<td>22</td>
</tr>
<tr>
<td>GCS score</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13-15</td>
<td>48</td>
<td>20</td>
</tr>
<tr>
<td>9-12</td>
<td>20.4</td>
<td>34</td>
</tr>
<tr>
<td>3-8</td>
<td>31</td>
<td>45</td>
</tr>
<tr>
<td>Mortality</td>
<td>9</td>
<td>36</td>
</tr>
</tbody>
</table>

The mortality of single EDH patients was 9% while it was 36% in patients having double EDH. The mortality was significantly higher in patients who sustained vehicular accident and those having subdural or intracerebral clots. There was no mortality in patients whose GCS score was between 13 and 15. In patients with GCS score between 3 and 8, the mortality was 47% in case with double EDH as compared to 25% in patients with single EDH.

Out of 28 patients with double EDH, 24 patients with bilateral EDH underwent surgical evacuation on both sides. Of these 8 patients (35%) died and the rest clinically improved. Two patients with multiple EDH underwent evacuation of the clot from more than two sites. One of these patients improved and the other died. Of the three patients operated for ipsilateral double EDH, two patients recovered and the other died.

IV. DISCUSSION

The incidence of intracranial bilateral EDH among the EDH cases has been reported in various studies ranging from 2-25%5-10, while its presence at more than 2 sites is extremely rare. It has been suggested that the force of impact to the head could produce bilateral haematomas which is more predominant in anteroposterior direction than from lateral direction. This is probably the reason for a higher frequency of EDH in the frontal region. In my series 71% patients had frontal EDH and 29% had bilateral EDH. Patients with double EDH less frequently have a lucid interval, have a lower GCS, lateralization is frequently absent and deteriorate more often than individuals with unilateral haematomas.11-12

There were two types of bilateral EDH. In the commoner first type, the bleeding is venous in nature and occurs as a delayed phenomenon while in the second type, the bleeding is arterial in nature.11,13-15 The overall mortality in this series is 36% in the double EDH as compared to 9% in the single EDH group. Gorgulu reported 15.7% mortality in his study of 19 cases of bilateral EDH when the diagnosis was made within 6 hours in 80% of cases.16

REFERENCES

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