S-E-3. Acute Traumatic Intracranial Hematoma

Mitsuo TSURU and Kenzoh YADA

Department of Neurosurgery, Hokkaido University School of Medicine

Under the term "Acute Intracranial Hematoma", we include only these cases of which lucid interval is less than 24 hours. Among 117 cases with traumatic intracranial hematomas which were treated at our department during the past 7 years, there were 44 such cases. By analysing their clinical course, operative findings, autopsy findings of fatal cases, and by observing intracranial pressure using continuous recording method, we found that they fall into three major groups.

1) The first group includes the cases with lucid interval "zero", in other words, the cases which continues to show severe disturbance of consciousness from the time of injury. This group of patients have severe primary cerebral injury in deep structure of the cerebral hemisphere on top of the intracranial hematoma. Therefore, vigorous treatment against severe cerebral edema is necessary after removal of hematoma. Mortality rate of this group in our cases was 77.7%, which was the highest among these three groups.

2) The second group consists of the cases with lucid interval of less than three hours. These are the cases with large intracranial hematoma which is large enough to cause transtentorial herniation very rapidly, but without severe primary cerebral injury. The patients under this group can be saved fairly easily if the operation is performed early enough. However, if the operation is once delayed beyond the time of irreversible brain-stem damage made by tentorial herniation, there is no way of saving life. Mortality rate of this group in this series was 56.3%.

3) The third group consists of the cases with lucid interval of approximately 12 hours. Neither the size of the hematoma, nor the degree of primary cerebral injury of this group is enough to cause death by itself. But combination of these two produces secondary cerebral edema and causes transtentorial herniation approximately 12 hours after the trauma. The patients in this group, those who were operated upon within 2 hours after the termination of lucid interval were all saved without exception, and those who were operated upon later than two hours died if vigorous decompression was not performed. Mortality rate of this group was 45.5%.