finding.

From above reasons subdural collection of fluid must be divided into three group.

n-7. Angiographic Study on the Acute Traumatic Intracranial Hematoma relating to the Operative Prognosis

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The present study was done to draw the attention to the correlation between the angiographic findings and the operative prognosis in our series of the acute traumatic intracranial hematoma. To decide the extent of the hematoma the following points were angiographically noticed.

- 1) In anteroposterior view
 - a) Thickness of the avascular area
 - b) Falx sign
 - c) Change in A and B line (Averas and Wood)
- 2) In lateral view
Change in the difference between H_1 line and H_2 line (Vlahovitch) in length

The result is follows.

1) The thickness of the avascular area has no correlation with the operative mortality in the epidural hematoma, while in the subdural hematoma the thicker avascular area, the higher mortality is noticed and in case of more than 1 cm in the thickness all died.

2) As for the falx sign, in the epidural hematoma with the falx sign the operative mortality was 31%, without the falx sign 40%, however in the subdural hematoma with the falx sign the operative mortality was 50%, in case without falx sign 70%.

3) In anteroposterior view, the more extensive shifting of anterior cerebral artery developed the higher operative mortality was noted, especially in the subdural hematoma, namely in 1–2 cm of the shifting contralaterally from the midline mortality was 83% and in case of more than 2 cm 100%. On the other hand in the epidural hematoma in case of 1–2 cm mortality was 25% and in more than 2 cm 33%.

4) All of intracranial hematoma which A line was lengthen had fatal course, which B line had no relationship to mortality.

5) As for the difference between H_1 and H_2 in length, in case of more than 2.5 mm the operative mortality was 32% in the epidural hematoma, and in the subdural hematoma 93%.

6) As for the intracerebral hematoma, our series are all survived, therefore the clinical consideration was not especially made.

n-8. Angiographic Study on Traumatic Intracranial Hematoma

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Angiographic findings were examined with 123 intracranial hematoma cases encountered in our Clinic for the past four years. Included were fifty-four cases of epidural hematoma, sixty-two cases of subdural hematoma and seven cases of intracerebral hematoma. Most epidural hematoma cases ran acutely and of subdural, chronically. The avascular area was an angiographic characteristic common to both epidural and subdural hematomas. In Japan some have tried to differentiate epidural hematoma from subdural hematoma by an angiographic finding, i.e., the shape of avascular area in angiogram. Many foreign reports, however, have pointed out that it is difficult to differentiate these two conditions only by the shape of avascular area in angiogram.

Following are the conclusions obtained by an analysis of angiographic findings of 123 cases with intracranial hematoma. In epidural hematoma angiogram analysis, 1) shortness of the interval after head injury and 2) evidence of skull fracture in craniogram should be considered. Taking these two conditions into account, angiographic findings obtained from our epidural hematoma cases were similar to those reported by others. We have confirmed that for a correct evaluation of the shape of avascular area it is important to take the angiogram in a condition where the central axis of X-ray runs tangential to the hematoma. Avascular area was localized and was close to the fracture line. Other angiographic findings of important diagnostic value were extravasation of contrast medium, arteriovenous fistula between the meningeal artery and vein, and the formation of pseudoaneurysm.

In subdural hematoma it is confirmed that 1) in acute stage avascular area was arcuate and covered the whole brain surface unilaterally, 2) in chronic stage it became lenticular and 3) in resolving stage it was again arcuate but localized. We experienced one exceptional case in which the angiogram showed extreme displacement of the anterior cerebral artery away from subdural hematoma though epidural hematoma also existed contralateral to subdural hematoma.

Of seven cases of intracerebral hematoma, three cases belonged to type I, four cases to type II and four cases had hematoma in the frontal lobe, three in