(3) Direct intracranial excision is first recommended if possible, but, if not, the other surgical approaches are effective as the authors proved.

A-29. The Surgical Treatment of VA-PICA Aneurysms

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A-30. Operative Treatment of Cerebral Aneurysms

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The results of the operation of 93 aneurysms in 68 patients are analyzed with respect to factors such as preoperative conditions of the patients, and the timing and technique of surgery. All cases were operated under an operative microscope. With an advanced technique of surgery, the operative results for aneurysm have vastly improved and to reduce not only the mortality rate, but also the morbidity rate has become a goal of the surgery for cerebral aneurysm.

Postoperative clinical evaluation is made according to the neurological and mental conditions of the patients on the day of discharging the hospital. Postoperative results of the patients are divided into the following 4 groups;

Group 1, no change or better, postoperatively (48 cases, 62%) (excluding the cases of postoperative transient, slight mental disorders)

Group 2, deteriorated or neurological deficits, postoperatively (14 cases, 18%) (such as oculomotor paresis, or hemiparesis, which are completely improved when the patients are followed up, are included and mental or character changes after the operation, which might be masked preoperatively because of lowered conscious level, are also included in this group.)

Group 3, died, due to direct or indirect effects of operation (6 cases, 8%) (postoperative death due to pneumonia, infection or heart attacks etc., are all included in this group.)

Group 4, died, without or before the operation (9 cases, 12%) (including cases of refusal of surgery, surgically inapproachable or died as a possible candidate before operation because of rerupture of aneurysms.)

The most significant causes of operative morbidity and mortality are considered as maltechnique of surgery, improper retraction of the brain tissue and main arteries or manipulation of the IIIrd cranial nerve as well as long time application of temporary clipping or induced hypotension. When the effect of temporary clipping is analyzed, the percentage of cases of its application increased in group 2 and much increased in group 3. The effect of induced hypotension (not lower than 70 mmHg in systemic pressure) is not significant for the results of surgery provided it is not too long. The results of cases with application of temporary clipping during hypotension, although the duration is short, are worse than others. The operative results have improved with a proper use of microsurgical technique, such as neck clipping without application of temporary clipping, and a control of bleeding from ruptured aneurysm only by suctioning, again without application of temporary clippings.

Among the many significant causes of operative death, such as vascular spasm, brain edema and disturbed respiratory functions, the problem of operative technique and the determination of proper timing of surgery can be solved by our own efforts. Our rule concerning the timing of operation is a prompt operation for the grade III patients. And for the grade IV patients it should be as prompt as possible. Our rule is decided due to the following reasons. When analyzing the cases of group IV (death without operation), they are consisting of 4 cases of grade III and 3 cases of grade IV patients. (2 cases of refusal grade I cases). More than half of these cases died of reattacks of subarachnoid hemorrhage before the operation and also total