INTRACRANIAL ERADICATION OF MIDDLE CEREBRAL ANEURYSMS*

H. HARVEY GASS, M.D.,† JOHN F. MCGUIRE, M.D.,†
AND DONALD R. SIMMONS, M.D.†
Detroit, Michigan
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With the increasing interest in the direct intracranial eradication of berry aneurysms the accumulation of data concerning clinical experience with specific types is important in defining the risks associated with such surgery. These risks are, of course, influenced by considerations other than those concerning the anatomical location of the aneurysm, such as time of surgery with respect to previous subarachnoid hemorrhage, size of aneurysm, associated intracranial hematoma, age of patient, presence of hypertension, existence of multiple aneurysms, state of consciousness of patient, relationship to dominant hemisphere, and the general health of the patient. As experience with intracranial procedures for handling various types of saccular aneurysms grows, many of these factors, occurring as they do with approximately equal frequency among the various types of aneurysms, tend to balance themselves out so that the surgeon gains definite impressions with regard to the facility with which aneurysms in certain locations can be eradicated. We have gained a distinctly favorable impression in regard to direct eradication of middle cerebral aneurysms based upon experience with 12 of these lesions, which we wish to report upon at the present time (Fig. 1).

It seems particularly important to emphasize this point of view since several reports in the literature give a contrary impression. Thus, for example, Dandy in his monograph Intracranial Arterial Aneurysms stated “There is probably less likelihood of curing a middle cerebral aneurysm, at least in leaving a useful citizen, than is the case of any other aneurysm in the brain.” Rowe et al. in a large experience with the direct attack on intracranial aneurysms pointed out that procedures dealing with the middle cerebral artery are especially apt to be followed by severe cerebral edema. Graf, in a similar report, had a particularly unfavorable experience with middle cerebral lesions. There were 4 deaths among 6 patients with aneurysms in this location. In 3 of these patients, however, only the hematoma was removed and the aneurysm was left untreated. Hamby, too, was not enthusiastic about the possibility of successful direct obliteration of these lesions. Campbell and Burkland occluded the neck of the aneurysm in 5 patients; 1 died, 1 had hemiparesis, 1 had aphasia, and 2 had good results.

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† 612 Kales Building, Detroit 30, Michigan.
Uihlein and Hughes, in a report concerning the efficacy of treatment of aneurysms by carotid ligation, reported that their highest mortality occurred in cases of aneurysms of the middle cerebral artery. In their group 4 deaths occurred among 9 patients treated. It is possible, however, that their high mortality represented death from recurrent bleedings because of the ineffectiveness of carotid ligation for this particular location of aneurysm.

On the other hand, favorable experiences with intracranial eradication of aneurysms in this location have been reported by at least four groups. Norlén and Olivecrona in 1953 mentioned experience with 17 middle cerebral aneurysms, 13 of which were occluded intracranially and 4 wrapped with muscle only. There was only 1 death in this group, all the other patients having been discharged apparently well. Favorable results also, but in small groups of patients with middle cerebral aneurysms, can be found in reports of Steelman et al. and Swain. The first report dealing specifically with the favorable outcome of intracranial eradication of middle cerebral aneurysms was made in 1955 by Petit-Dutaillis and Pittman. Of their 9 patients, 2 had only the associated hematoma removed, the aneurysm not being eradicated. Both of these patients expired postoperatively. Of the remaining 7, all of whom had the aneurysm eradicated, 5 did well and 2 died postoperatively, one as the result of an extradural hematoma and the other presumably as a consequence of an enormous intracerebral hematoma associated with the aneurysm. In a review of the literature they found 29 patients who had been treated by eradication of the aneurysm intracranially which included those cases of the three favorable reports already mentioned. Of these

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