SURGICAL TREATMENT OF RUPTURED ANEURYSM WITH INTRACEREBRAL AND SUBARACHNOID HEMORRHAGE IN A 16-MONTH-OLD INFANT

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The relatively common incidence of aneurysms of the circle of Willis and adjacent vessels is well known, and the idea that practically all such aneurysms represent congenital defects is generally accepted in spite of the fact that they become evident clinically only rarely before the third decade of life. Hermann and Macgregor reported the case of a 4 \frac{1}{2}-year-old child who died of an intracerebral and subarachnoid hemorrhage secondary to rupture of a small aneurysm which had originated from a bifurcation of one of the deep branches of the anterior cerebral artery within the substance of the brain.

In 1939, McDonald and Korb reviewed 1,125 collected cases of saccular aneurysms verified by operation or autopsy. Thirty were cases of aneurysms in children of which 13 were said to be embolic or thrombotic in origin or associated with endocarditis. In 1953, Ritchie and Haines reviewed the literature and collected 81 cases of spontaneous intracranial hemorrhage, or aneurysmal or angiomatous malformations, in children in addition to the 30 cases reviewed by McDonald and Korb. In 25 of these additional 81 cases, the cause of the hemorrhage was undetermined, in 17 the hemorrhage was indicated to have been caused by a ruptured aneurysm, and in 39 “some form of angioma” was the source of the hemorrhage. They reported an additional 8 cases in children ranging in age from 6 to 13 years. Four of these patients were proven to have angiomatous malformations, 3 had hemorrhage of unknown source and 1 was believed to have had an aneurysm.

It is evident that intracerebral or subarachnoid hemorrhage in infants and children is quite unusual, and in the great majority of cases reported the source of the hemorrhage was not determined or it was secondary to some type of arteriovenous anomaly.

CASE REPORT

A 16-month-old male infant was admitted to the Tulane pediatric service on May 4, 1954. On the morning of that day, the parents, upon arising, had found the child in a semiconscious condition. They observed that the left extremities were moved only weakly. The child had fallen and struck his head on April 18, 1954 but did not appear to have sustained a significant injury. Roentgenograms of the skull made on that date revealed no evidence of pathology.

Examination on May 4, 1954 revealed a stuporous infant who responded only to painful stimuli. There was a slight degree of nuchal rigidity, with left hemiparesis, ankle clonus bilaterally and a positive Babinski response on the left. Subdural taps did not reveal evidence of a hematoma, but a lumbar spinal puncture yielded bloody cerebrospinal fluid under a pressure of 360 mm. of cerebrospinal fluid.

The patient’s condition gradually worsened so carotid angiography was performed on the

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right. A small aneurysm on the ascending parietal branch of the middle cerebral artery was demonstrated.

Because the patient's condition was deteriorating, a craniotomy was performed at once. A small collection of old blood was noted beneath the pia of the convexity of the parietal lobe. A short incision was made in the pia over this area and approximately 10 cc. of old blood were removed from the cavity of the small hematoma. On the anterior wall of this cavity, a small aneurysm was visualized at the bifurcation of a small branch of the ascending parietal artery and the parent artery. The aneurysm was excised without difficulty.

Follow-up examination in the out-patient clinic revealed continued clearing of the neurologic deficits and the definitive reaction to the operative treatment was recovery with only minimal neurologic residuals which constitute no disability or discomfort.

Microscopical examination of aneurysmal sac revealed no evidence that any type of inflammatory disease might have contributed to the development of the aneurysm.

We believe that this represents the youngest patient who has been treated successfully by surgical excision of the aneurysm following the development of an intracerebral and subarachnoid hemorrhage from rupture of the aneurysm.

REFERENCES