Multiple Cerebral Aneurysms in a Patient with an
Abdominal Aortic Aneurysm

Report of a Case*

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Intracranial aneurysms, single or multiple, may exist together with an aneurysm elsewhere in the body but a review of the literature has failed to uncover any recorded cases, such as this, of multiple cerebral aneurysms in association with an abdominal aortic aneurysm. That such cases can and will occur may be predicted by the law of chance and anticipated because of the contemporary refinements of diagnostic methods. The experiences in the following case report are recorded with the hope that they might provide a guide in the conduct of a similar case.

Case Report
A 56-year-old right-handed male was admitted to the Graduate Hospital of the University of Pennsylvania, January 4, 1954, with the history of abrupt onset of severe, continuous blinding headache the day before, which was not relieved by oral analgesics or narcotics. Data in the family and past medical history bore no relevance to the presenting symptoms and signs.

Physical examination disclosed an adult male in full possession of his mental faculties, obviously experiencing intense headache. The positive neurological findings consisted of impaired convergence and upward gaze of the eyes, extreme nuchal rigidity, and Kernig and Brudzinski test. The general somatic examination revealed nothing abnormal except a loud, grating, apical systolic murmur transmitted to the left axilla. The blood pressure was 150/80; pulse, 80; respirations, 20. Blood count, urinalysis and blood chemistry were normal and the blood serology was non-reactive.

The admission diagnosis of spontaneous subarachnoid hemorrhage stemming from a leaking aneurysm was confirmed by the presence of grossly bloody cerebrospinal fluid. Radiographs of the skull were normal and those of the chest showed hazy densities in both apices of the lungs. On January 8, right cerebral arteriography demonstrated a moderately large aneurysm arising from the carotid siphon just at its confluence with the right middle cerebral artery (Fig. 1). Arteriography of the left side, done January 11, showed a normal vascular pattern (Fig. 2). The right common carotid artery was ligated on January 12 by Dr. Robert A. Groff. There were no postoperative complications and the patient was discharged January 18 to return in February for ligation of the right internal carotid artery.

2nd Admission. During the ensuing 2 weeks he experienced occasional headache, fleeting numbness of the left arm and slight weakness of the left hand. He was readmitted on February 8, 1954, and on February 9, the right internal carotid artery was ligated under general anaesthesia. There were no postoperative motor or sensory deficits and after a few days of febrile reaction, which responded promptly to procainphenicol, he was discharged on February 15. He continued to have periodic headaches which were relieved by aspirin.

Neurological examination showed increased biceps and triceps tendon reflexes on the left as compared with the right. The patient returned to work on a part-time basis in March and on a full-day schedule during the middle of April.

He had intermittent headache through the remainder of 1954 and 1955 but continued to work steadily. On August 4, 1956, he again had a severe suboccipital headache. Two days bed rest provided relief and he resumed work. At this time the neurological examination was entirely normal; the blood pressure was 150/80; pulse, 84; and weight, 165 lbs. The patient had been taking phenobarbital, 1/2 grain, 4 times daily since carotid ligation was done on January 14, 1954.

3rd Admission. In January, 1957, he complained of "too frequent headaches" occurring almost daily associated with a "roaring sound" in both ears. These suboccipital headaches with pain extending into both shoulders continued through February. Despite the absence of nausea, vomiting or signs of meningeal involvement it was felt advisable to repeat cerebral arteriography to determine whether there was an increase in the size of the right carotid aneurysm with leakage or whether an aneurysm had developed elsewhere. He returned to the Graduate Hospital on March 2, 1957. Studies at this time revealed normal neurological examination; normal laboratory findings; absence of carotid pulsation on the right; an apical systolic murmur with radiation to the cardiac base and left axilla; the blood pressure was 160/100, pulse 80, and respiratory rate 22.

On March 4, 1957, a left cerebral arteriography showed an aneurysm arising from the medial aspect of the carotid siphon, and a projection arising from the anterior cerebral artery representing an additional aneurysmal site (Fig. 3). The previous arteriogram of the left side had been normal. In view of the fact that the right common and internal carotid arteries were ligated and the multiple aneurysms affecting the internal carotid and anterior cerebral arteries were in the dominant hemisphere there was no choice but to pursue a course of conservative treatment. This consisted of bed rest and analgesics for headache. Hypotensive medication was not given. He became symptom-free and left the hospi-

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Fig. 1. Arteriogram (January 8, 1954), showing the large aneurysm of the terminal portion of the right internal carotid artery, right lateral view.

Fig. 2. Arteriogram (January 11, 1954), left carotid injection, showing normal vascular pattern, left lateral view.

Fig. 3. Arteriogram (March 4, 1957), showing aneurysms of the left internal carotid and anterior cerebral arteries, left lateral view.