SUCCESSFUL SURGICAL TREATMENT OF AN INTRACRANIAL MYCOTIC ANEURYSM COMPLICATED BY A SUBDURAL HEMATOMA

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(Received for publication March 30, 1939)

Although mycotic aneurysms are always listed among the varieties of intracranial aneurysms when a differential diagnosis is being attempted, actually their incidence is quite small. Leaking aneurysms that are the source of subdural hematomas are likewise rare, so that the combination of a mycotic aneurysm producing a subdural hematoma is decidedly uncommon.

The patient in the present case entered the hospital with a tentative diagnosis of a subarachnoid hemorrhage. It was only with the passage of time that the actual state of affairs disclosed itself.

CASE REPORT

M.B., a white female aged 23 years, was admitted to the Robert Packer Hospital on Jan. 21, 1956 because of the sudden onset of a severe, excruciating headache. She had been followed in the rheumatic heart clinic for a number of years, but had been considered asymptomatic. There had been no chills or fever in the recent past. On the day of admission there suddenly developed, without apparent cause, a very severe headache of the vertex and suboccipital region which had persisted unabated. Shortly thereafter, she began to vomit. When seen by her family physician, ptosis of the left upper eyelid had appeared.

When admitted into the hospital, the patient was lethargic and complained bitterly of the headache. A harsh systolic murmur was heard in the mitral area of the heart. The neck was decidedly stiff. Speech was thick and aphasic. An almost complete left-sided 3rd nerve palsy was evident. A mild right hemiparesis was present, and bilateral extensor toe responses were noted.

The obvious diagnosis seemed to be a subarachnoid hemorrhage, secondary to an aneurysm in the circle of Willis. A lumbar puncture was done immediately. The pressure was 290 mm. of H$_2$O. To the chagrin of the admitting physician, the fluid was crystal-clear and contained 23 mg. per cent of protein. Despite this peculiar finding, she was treated as though she had intracranial bleeding, and was kept at strict rest in bed.

During the next 2 days, the intensity of the headaches subsided. It was noted that she was running an irregular fever with temperature spikes up to 101.4°F. Count of red blood cells was 3,700,000, hemoglobin was 12.3 gm., and count of white blood cells was 8,750. Because of the fever and the known rheumatic heart disease, a blood culture was secured. The next day, the media contained a growth of Streptococcus pyogenes.

On Jan. 25, 1956, bilateral carotid arteriography was done. Again to our surprise, no aneurysms were found on the circle of Willis, but an aneurysm far out on the left angular artery was demonstrated (Fig. 1). Rest in bed was continued and the hemiparesis disappeared within a few days. The 3rd nerve palsy began to clear and visual fields remained full. On Feb. 7, 1956, it was noted that the patient had a left facial weakness of the central type, a left hemiparesis and a left-sided Babinski's response. For the first time, bilateral papilledema was noted.

Ventriculography was done on Feb. 9, 1956; this revealed a large mass in the left parietal region. Craniotomy done the same day disclosed a massive subdural hematoma covering about one-half of the left cerebral hemisphere. As this was removed, the aneurysm previously demonstrated came into view and was found to be actively leaking. This was completely excised.

Recovery was uneventful and the ligation of the angular artery at this point did not produce any recognizable neurologic deficits. The bacterial endocarditis was treated with penicil-
lin, 600,000 units 3 times a day. Her temperature remained normal and the blood culture became sterile. During her convalescence, infection developed in a tooth, which required extraction. Culture from the abscessed tooth disclosed a Streptococcus mitis, a different organism from that responsible for the endocarditis.

The patient has remained well to date, a period of 3 years, with no evidence of recurrence of the endocarditis, nor any further episodes of intracranial bleeding.

DISCUSSION

The actual number of patients who have had intracranial mycotic aneurysms, and on whom operations have been performed, are few. Dandy, in his book on aneurysms, mentioned 6 patients, only 1 of whom came to operation. All of them succumbed to an intracranial hemorrhage. He stated that the middle cerebral system of vessels appears to be the site of predilection, citing 5 instances of involvement. His sixth patient had an aneurysm in the posterior cerebral artery. It was pointed out that the patients were all young, in their teens or twenties, and that they were known to suffer from bacterial endocarditis. Pathologic studies disclosed a polymorphonuclear-cell infiltration of the walls of the aneurysm, and in one there was a frank exudate of pus. Dandy’s series comprised 108 patients in whom 183 aneurysms were demonstrated (15 per cent multiple). In none of the patients could multiple mycotic aneurysms be found.

The experience of Ray and Wahal was somewhat different from Dandy’s. They studied 4 instances of subarachnoid hemorrhages in patients with subacute bacterial endocarditis. They concluded that only 2 of their patients had mycotic aneurysms while 2 had an infection superimposed upon a congenital aneurysm. Also, 2 of the patients were in the 5th and 6th decades of life. All died as a result of hemorrhages from the aneurysms. The middle cerebral vessels were implicated in 3 instances and