The pathogenesis of cerebral aneurysms has not been settled completely. The familial incidence, which lends support to their congenital origin, has been meager but discussion and cases have been presented.1,2,4–7

Fortuity or logic placed in these sisters in the present report an aneurysm which was on the same side, in a similar location and which ruptured in the same decade. Essentially they had the same cerebral vascular circulation.

**Case Reports**

**Case 1.** A 33-year-old white female on March 2, 1960, 2 hours prior to admission, had sudden onset of generalized occipital headache. She had had periodic bifrontal tension-type headaches lasting from 6 to 8 hours and occurring about every 3 to 4 weeks for the last 10 years, and a rather long-standing history of hypertension. She had a hysterectomy in 1959. The family history will be included in Case 2.

**Examination.** Blood pressure was 140/102. The patient was irritable and complained of nausea. There was moderate nuchal rigidity. There was a well-healed suprapubic midline scar. The left nasolabial fold was slightly less prominent than the right. There was mild hyperreflexia on the left side. The left plantar response was reflex where that on the right was flexor.

Hemoglobin was 15.2 gm. Urinalysis gave normal findings. Urea nitrogen was 13 mg. per cent, chlorides were 106 mEq./l., sodium was 137 mEq/l. and potassium was 3.6 mEq/l. Roentgenograms of chest and skull were normal.

**Course.** Lumbar puncture yielded grossly bloody spinal fluid with a pressure of 300 mm. of water. Therefore, bilateral carotid arteriograms were carried out and these revealed an aneurysm at the junction of the internal carotid and posterior communicating arteries on the right (Figs. 1 and 2). Both anterior cerebral arteries filled from the left.

On Mar. 5, 1960 a Crutchfield clamp was applied to the right common carotid artery under local anesthesia and she tolerated this procedure well. The clamp was left open two full turns. On Mar. 6, 1960 the clamp was closed a half turn and this rendered her hemiparetic on the left side; therefore, the clamp was re-opened a half turn and function came back immediately. In 30 minutes, the headache became more severe, the pulse irregular and there was increased nuchal rigidity. She was rapidly getting worse and apparently would tolerate the carotid occlusion poorly.

**Operation.** A right frontal craniotomy was performed and the large aneurysm was clipped without incident. Postoperatively she continued to demonstrate vasomotor collapse and expired on Mar. 6, 1960 at 11:45 p.m. Autopsy was not permitted.

**Pathological Report.** The aneurysm measured 1.5 cm. by 1.2 cm. and was filled with clotted blood. There was a ruptured area, 6 mm. in diameter, present on the side of the sac. The wall of the aneurysm demonstrated calcification.

**Case 2.** A 37-year-old lady, the sister of Case 1, at 4:00 in the morning of May 12, 1962, had sudden onset of headache which was associated with vomiting. She was admitted to the hospital at 10:55 a.m. on May 12, 1962. She said initially there was inability to move her legs; however, function returned in about an hour. She had been hypertensive for at least 15 years. Because of pain in the flank in 1951, a 1-131 renogram was done, the findings of which were compatible with chronic pyelonephritis or another parenchymal disorder. Roentgenograms of the chest and electrocardiograms were normal. A cholecystectomy was done in 1958 because of cholelithiasis. An intravenous pyelogram had been done at that time and it was found to be within normal limits. Her blood pressure was being maintained on Rautrax. The patient said her headaches have occurred only in the last several years, about every 2 or 3 weeks, and often would last less than a day and often were helped by aspirin. Associated with these headaches has been vomiting, but never so severe as today.

**Family History.** There is one sister, 32 years of age, who is well and has no headaches. One brother, aged 40, is living and well and has no headaches. The patient’s mother is living and is being treated at this time for heart disease at the age of 67. Their father died in 1914 of heart disease and a “stroke” at the age of 51. Case 2 has two children, both living and well, and 10 and 15 years old.

**Examination.** Blood pressure was 190/120. The patient was alert and oriented. There was slight flattening of the left nasolabial fold and moderate hyperreflexia on the left side with a left Babinski’s sign. Moderate nuchal rigidity was present. Heart and lungs were normal.

Hemoglobin was 18.2 gm. and urinalysis gave normal findings. Roentgenograms of chest and skull were normal.

**Course.** Lumbar puncture was done immediately and revealed grossly bloody spinal fluid under a pressure of...
340 mm. of water. Therefore bilateral carotid arteriograms were carried out at 12:20 p.m. on May 12, 1962, and an aneurysm was present at the bifurcation of the internal carotid artery (Figs. 3 and 4). As in Case 1, the right anterior cerebral artery did not fill on the right-sided injection for in both cases it filled from the left side.

Under local anesthesia, without incident, a Crutchfield clamp was applied to the right common carotid artery. This was turned down gradually through the day and by 7:00 p.m. complete occlusion was well maintained. Her headaches persisted but became progressively less in intensity. She was discharged on June 12, 1962.

She re-entered the hospital on July 8, 1962, after gross infection was present in the incision over the clamp. Therefore this was removed. She has now resumed normal activity.
Familial Cerebral Aneurysms

Summary

Similar aneurysms are presented in sisters. These appeared on the same side, in the same location and were of similar size, existing under essentially the same cerebral vascular circulation.

Addendum. After this paper was read, another incident of familial aneurysms was cited. This was a 26-year-old colored male, who had an aneurysm on the right internal carotid artery at the junction of the posterior communicating artery, which was ligated successfully. It was stated that his father had an aneurysm on the carotid artery but refused operative treatment. His sister had an aneurysm on the carotid artery and had a ligation in the neck.

References