Spontaneous disappearance of cerebral arteriovenous angioma

Case report

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The author reports a case in which a cerebral arteriovenous malformation disappeared completely and spontaneously within 3 years. Comparable cases from the literature are cited. The disappearance of the malformation may have been due to hemorrhagic episodes and the resulting thromboses.

Key Words: arteriovenous malformation, angioma

The complete or partial regression of a cerebral arteriovenous (A-V) malformation is very rare. In the seven cases reported, total disappearance of the malformation occurred in two, while only partial regression in the size of the vascular anomaly occurred in the other five.

We report a patient with a cerebral arteriovenous malformation who, 3 years after the original angiographic diagnosis, presented complete spontaneous disappearance of the vascular anomaly in a follow-up angiographic study.

Case Report

A 37-year-old woman was admitted to the Neurosurgical Department of the University of Messina on July 24, 1969, with the diagnosis of suspected subarachnoid hemorrhage (SAH) from a cerebral A-V malformation.

In 1954 the patient had suffered the first episode of SAH, with sudden headache, unconsciousness, stiff neck, and hemorrhagic cerebrospinal fluid. She had been admitted to a medical service and discharged 20 days later without neurological deficit and able to resume her usual work. Mild second and third episodes of SAH occurred in 1965 and 1966. After the third episode the patient exhibited mild right hemiparesis with pyramidal signs, stiff neck, and papilledema on the right. She was at that time admitted to another neurosurgical service where a left carotid angiogram (Fig. 1) showed the presence of an A-V angioma supplied by the pericallosal artery, with drainage into the vein of Galen. The patient recovered and was discharged after 18 days.

She did well until 3 years later when 3 days before the present admission she complained of sudden headache followed by unconsciousness for a few minutes.

Examination. The patient was alert and presented no neurological deficits nor signs of meningeal irritation; the pulse was 72, blood pressure 140/75, and respirations 18. Blood, urine, and electroencephalographic examinations were normal. X-ray examination of the skull was also normal, and a spinal tap revealed normal cerebrospinal fluid. Left carotid angiograms (Fig. 2) showed nothing suggesting a vascular anomaly. The distal segment of the pericallosal artery ended abruptly where the malformation had
Disappearance of arteriovenous malformation

been previously visualized. By comparison of the angiograms with those of 3 years before, the pericallosal artery appeared slightly enlarged although following a similar course; the right carotid angiogram was normal.

**Follow-Up.** The patient was discharged and is doing well 6 months later.

**Discussion**

In some of the cases reported in the literature, carotid ligation\(^2\) or Roentgen therapy\(^6\) could have influenced the regression of the anomaly. Since our patient had not undergone any surgical or radiological treatment, the disappearance of the malformation must be considered spontaneous, probably due to thrombosis following previous hemorrhagic episodes. The hypothesis of thrombosis to explain the spontaneous recovery is reinforced by the fact that the malformation was small, contained small angiomatous cavities, and was supplied by only one feeding vessel.

![Fig. 1. Left carotid angiograms in 1966 show A-V angioma supplied by the pericallosal with drainage into the vein of Galen. Left: Anteroposterior view. Right: Lateral view.](image1)

![Fig. 2. Left carotid angiograms in 1969 show no evidence of A-V malformation. Note the distal segment of the pericallosal artery ends abruptly where the malformation had been seen. Left: Anteroposterior view. Right: Lateral view.](image2)
This case also raises the possibility that thrombosis with disappearance of the A-V malformation may also have occurred spontaneously in the cases reported treated by carotid ligation or radiation.

References


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