

CASE REPORTS

Aneurysm on a Persistent Left Hypoglossal Artery

P. Huber and R. Rivoir

Section of Neuroradiology, University of Bern, Switzerland

Summary. Description of a large aneurysm on a left persistent hypoglossal artery, at its junction with the basilar artery.

Anévrisme d'une artère hypoglossique persistente

Résumé. Description d'un grand anévrisme d'une artère hypoglossique persistente à l'endroit de réunion avec l'artère basilaire.

Aneurysma an einer persistierenden A. hypoglossica

Zusammenfassung. Beschreibung eines Falles mit einem großen sackförmigen Aneurysma an der Vereinigungsstelle einer persistierenden A. hypoglossica primitiva mit der A. basilaris.

The persistent (primitive) hypoglossal artery belongs to those of the persisting carotid-basilar anastomoses which are rarely shown angiographically. The primitive hypoglossal artery passes through the anterior condyloid foramen (the hypoglossal canal), contrary to the proatlantal intersegmental artery, which also takes its origin from the internal carotid artery in the upper cervical region, but proceeds through the foramen magnum to the posterior fossa. With a persistent hypoglossal artery, the posterior communicating artery is hypoplastic or absent, while the vertebral artery is either aplastic on the homolateral and hypoplastic on the contralateral side, or hypoplastic on both sides. For further details we refer to Lie [2], who gave a comprehensive description of all persistent carotid-basilar and carotid-vertebral anastomoses. A persistent hypoglossal artery has also been described associated with other vascular abnormalities, as aneurysms in the region of the internal carotid artery. In these cases, a persistent hypoglossal artery or another carotid-vertebral anastomosis probably only represents a purely accidental finding [1, 2].

In the case published by Udvarhelyi and Lai in 1963 [3], the situation is somewhat different. Here, an aneurysm was situated on the persistent hypoglossal artery itself.

Recently, we found a large aneurysm on a left persistent hypoglossal artery, at its junction with the basilar artery. The location of this aneurysm corresponds exactly to the case described by Udvarhelyi and Lai [3]. It might thus well be that a weakness of the vascular wall at the site of the junction of a large persistent hypoglossal artery with a smaller basilar artery enhances the formation of an aneurysm.

Case History

This 62 year old woman was known to have arterial hypertension for years and was under treatment. For one year she had been complaining of headache, mainly left occipital. Because of a sudden exacerbation of the head-

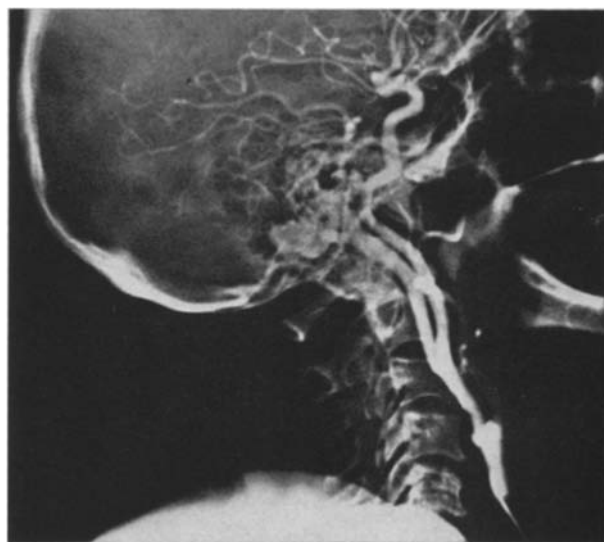


Fig. 1. Left carotid angiogram. Puncture of the common carotid artery

ache associated with vomiting, she was hospitalized. Neurological examination, brain szintigraphy and EEG were completely normal. The lumbar puncture 6 days after admission revealed xanthochromic CSF.

Angiography

The left carotid arteriogram shows a wide common carotid artery, which divides into the internal and external carotid artery at the level of C₄. At C₂, the internal carotid artery divides into two well developed arteries of about 5 mm diameter. The anterior vessel is the internal carotid artery, that posteriorly situated is a primitive hypoglossal artery. At the site of junction of the large hypoglossal artery with the normal sized basilar artery (internal diameter 3 mm), there is an aneurysm measuring 25 mm in length and 15 mm in width, directed posteriorly (Figs. 1—3). Brachial arteriography shows the right carotid system to be normal. The narrow right vertebral artery (internal diameter below 2 mm) has no visible communication with the basilar artery and ends in the inferior posterior cerebellar artery.

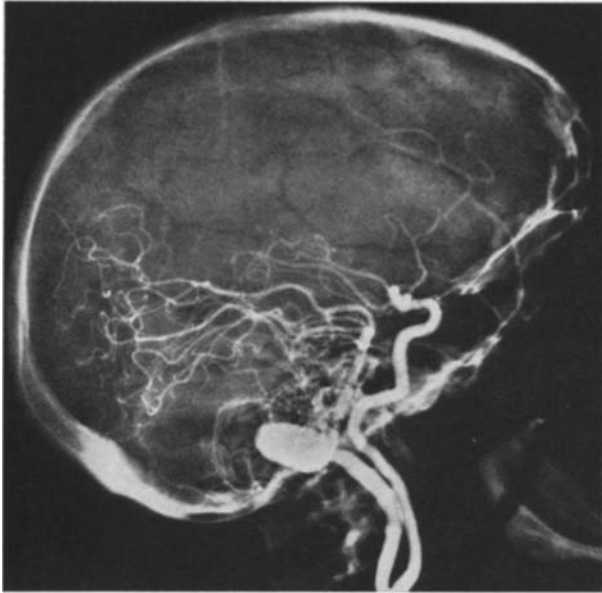


Fig. 2. Large aneurysm on the left hypoglossal artery (The patient died 3 months after angiography from rupture of the aneurysm. At autopsy, the aneurysm was shown to be very large and partially thrombosed. The carotido-basilar anastomotic artery ran through an enlarged hypoglossal canal)



Fig. 3. Aneurysm at the junction of the hypoglossal artery with the basilar artery

References

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3. Udvarhelyi, G.B., Lai, M.: Subarachnoid haemorrhage due to rupture of an aneurysm on a persistent left hypoglossal artery. *Brit. J. Radiol.* **36**, 843—847 (1963)

Prof. Dr. med. P. Huber
 Zentrales Strahleninstitut
 Inselspital
 CH-3010 Berne
 Switzerland