Dissecting perforator aneurysm of the basilar trunk. Case report and literature review.

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Disclosure

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Abstract

Introduction:
Perforator artery aneurysms of the basilar trunk are sparsely reported in the literature. Incidence and natural history of these rare vascular lesions remains unclear and their diagnosis and management are not well-defined.

Methods:
In addition to presentation of our own case we performed a comprehensive literature search for cases of perforator artery aneurysms of the basilar trunk. Diagnostic imaging, management and clinical outcomes were the primary components of interest.

Results:
Our case was a 70-year-old patient who experienced spontaneous subarachnoid hemorrhage WFNS Grade 2, Fisher Grade 2 due to a dissecting perforator aneurysm of the basilar trunk at the level of the AICA. Because of the complex angioarchitecture the patient was treated conservatively with a good clinical outcome and rerupture of the aneurysm. From the literature we identified a very limited number of case reports or case series describing aneurysmal lesions of the basilar perforator arteries. All cases presented with subarachnoid hemorrhage. Initial vascular imaging studies failed to reveal the aneurysm in about 50% of the cases. Patients were treated with microsurgery, endovascular therapy or were managed conservatively with subsequent spontaneous aneurysm resolution as it was observed in our case.

Conclusions:
Perforator aneurysms of the posterior circulation are a rare neurovascular entity. Diagnosis and therapeutic management are challenging. There exists no proven treatment recommendation. Microsurgical, endovascular or conservative management are potentially feasible. Therefore, treatment algorithm follows an individual approach, necessitating an experienced cerebrovascular team.
A 70-year-old patient who experienced sudden onset of intensive headache accompanied by nausea, vomiting and meningism corresponding WFNS Grade 2. CT scan demonstrated spontaneous subarachnoid hemorrhage, Fisher Grade 2. Initial CTA was negative for intracranial aneurysm.
Neuroradiological report of initial DSA was also negative for aneurysm, but retrospectively a tiny contrast paravasation was visible at the dorsal aspect of the basilary trunk just above the AICA origin.
Some days later secondary DSA was initiated for interventional vasospasmolysis due to symptomatic vasospasm. BA perforator aneurysm was now clearly visible \( \rightarrow \). Due to aneurysm location the interdisciplinary neurovascular team decided for conservative management.
Case presentation:

Patients course was excellent and he is now back to normal life. He did not rebled. He also refused DSA for follow up. However TOF-MRA two years later demonstrated complete remodeling of basilar trunk and complete spontaneous occlusion of the aneurysm.
Conclusion:

From the literature we identified a very limited number of case reports or case series describing aneurysmal lesions of the perforator arteries at the basilar trunk.

Initial vascular imaging studies failed to reveal the aneurysm in about 50% of these cases.

Associated subarachnoid hemorrhage shows a benign clinical course and promising clinical outcome in most cases. There is a high rate of spontaneous aneurysm occlusion observed, while rate of re-SAH is low.

The approach to the anatomic site is challenging both for clipping and coiling due to the retrobasilar location and tiny diameter of the perforators.

Therefore taking into account the periinterventional and perioperative risks of endovascular and microsurgical treatment, conservative treatment might be an eligible first-line treatment option.


