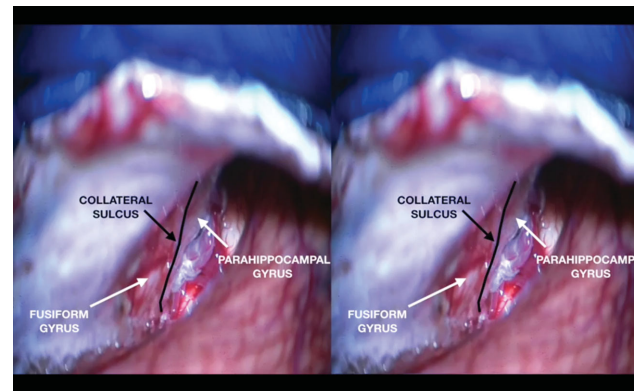


Transtentorial Approach for Parahippocampal Gyrus Arteriovenous Malformation Resection: 3-Dimensional Operative Video

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Medial temporal basal arteriovenous malformations (AVMs) have complex anatomy. They usually drain to the basal vein of Rosenthal, and arterial feeders can arise from the anterior choroidal artery and its branches, or from the posterior cerebral artery. If the AVM is more posterior in the parahippocampal gyrus, there is a predominance of arterial feeders arising from P2P or P3 segments of the posterior cerebral artery. As posterior AVMs are difficult to reach using anterior approaches, the supracerebellar transtentorial approach provides a direct pathway to the malformation, allowing better visualization and exposure of the vascular anatomy.

In this video, we present a 29-yr-old woman with a left parahippocampal AVM with P2P arterial feeders and Rosenthal basal vein drainage. The patient had three months of moderate headache and two abrupt

seizures before admission. Emergency computed tomography showed intraventricular hemorrhage. Magnetic resonance imaging and cerebral angiography revealed an AVM located in the parahippocampal gyrus, posterior to pulvinar thalamus. The patient underwent microsurgical treatment in semi-sitting position using a supracerebellar and infratentorial approach with transtentorial resection. The AVM was completely removed, and the patient recovered without neurological deficits. The authors present a 3-dimensional video of the microsurgical steps required to perform a transtentorial approach for AVM resection in the parahippocampal gyrus.

The patient signed the Institutional Consent Form, which allows the use of his/her images and videos for any type of medical publications in conferences and/or scientific articles.

KEY WORDS: Brain arteriovenous malformation, Parahippocampal gyrus, Transtentorial approach

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Disclosure

The authors have no personal, financial, or institutional interest in any of the drugs, materials, or devices described in this article.

COMMENT

This case is an elegant example of using microsurgical principle of converting deep structures into superficial ones by utilizing adjacent cisterns as dissection corridor (in this case, the supracerebellar

cistern/tentorium dissection, leading to deep parahippocampal gyrus lesion). This technique is a variation of pineal lesion approach. I find stereotactic surgical navigation very valuable in the approach and I routinely employ this adjunct in performing such operation. The extra-long operative depth is a limiting factor and thorough

preparations, including patient position and cerebral relaxation measures, are essential.

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