Basal Interhemispheric Approach for Large or High-Positioned Anterior Communicating Aneurysms.

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Introduction

So-called pterional approach (PA) including subfrontal and transsylvian approach is most frequently used in the U.S.A. for A com aneurysms. Aneurysms and surrounding structures may not be visualied very well with PA in case of large/giant, high-positioned, or anatomically complex aneurysms without excessive frontal lobe retraction or/and resection of the gyrus rectus.

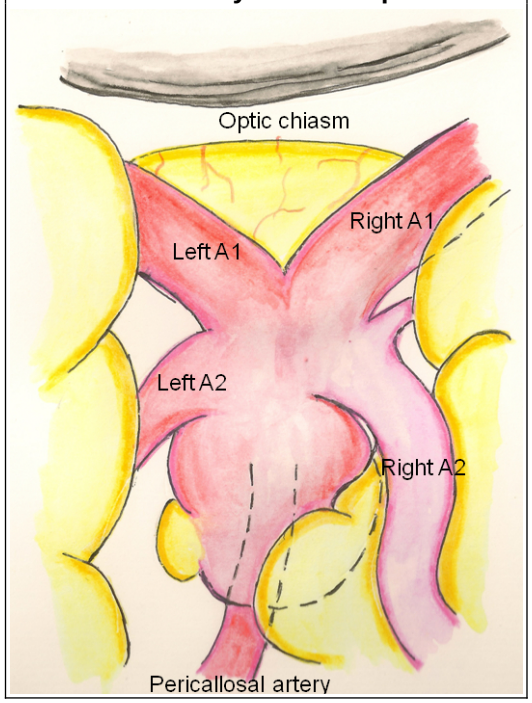
Methods

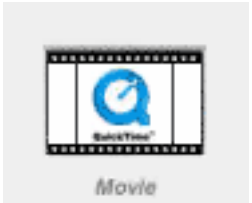
31 A com aneurysms clipped via BIH was retrospectively reviewed. Visualization of aneurysm and its surrounding structures, frontal lobe retraction, and surgical techniques required were evaluated.

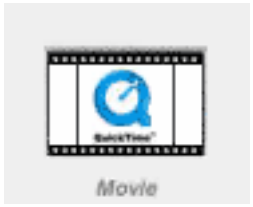
Results

12 aneurysms were high-positioned (> 10 mm from the planum sphenoidale), 10 were large (> 10 mm), 24 were superiorly projected, A com artery itself was a part of aneurysm in 2, and 1 aneurysm was associated with triple A2 with superior projection. In all cases, aneurysm and A com complex (bilateral A1 and A2, and A com artery) were well visualized and exposed without resection of gyrus rectus and excessive frontal lobe retraction. Perforators and small branches were better visualized even in case of large aneurysms compared to conventional pterional approach. Sharp dissection of arachnoid membrane and trabecula by using thin and fine microscissors under high magnification was always required for less traumatic dissection of the interhemispheric fissure in all cases. No blunt dissection by bipolar forceps was not used to avoid injury of pial surface and superficial veins.

A com aneurysm with triple A2

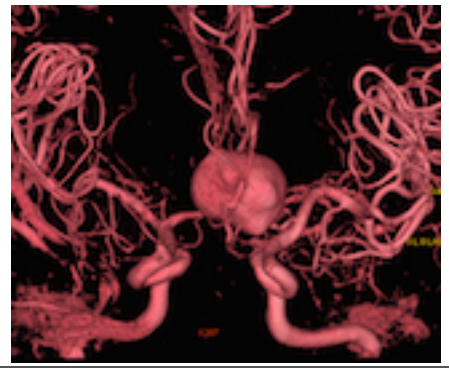


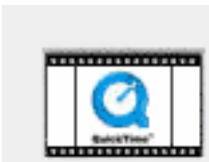




A com unruptured large aneurysm

A com large ruptured aneurysm





Conclusions

Though finer microsurgical techniques are required, this approach is better than conventional pterional approach to treat large, high-positioned or/and complex A com aneurysms as well as small or/and low-positioned ones with good clinical results. The benefits of this approach include minimal retraction, decreased trauma to the frontal lobes, and improved visualization of essential anatomical structures without resection of the gyrus rectus. This study suggests that BIH is a safer and better option in the treatment of A com aneurysms.