



Video Abstract

Combined subtemporal and pterional approach for clipping of multiple aneurysms

Robert C. Rennert, Spencer Twitchell, Karol P. Budohoski, William T. Couldwell

Department of Neurological Surgery, Clinical Neurosciences Center, University of Utah, Salt Lake City, Utah, United States.

E-mail: Robert C. Rennert - robert.rennert@hsc.utah.edu; Spencer Twitchell - spencer.twitchell@hsc.utah.edu;
Karol P. Budohoski - karol.budohoski@hsc.utah.edu; *William T. Couldwell - neuropub@hsc.utah.edu



*Corresponding author:

William T. Couldwell,
Department of Neurological
Surgery, Clinical Neurosciences
Center, University of Utah, Salt
Lake City, Utah, United States.
neuropub@hsc.utah.edu

Received : 09 November 2021

Accepted : 25 November 2021

Published : 20 December 2021

DOI

10.25259/SNI_1121_2021

Quick Response Code:



ABSTRACT

Background: Despite ongoing improvements in endovascular techniques, open surgical management of basilar apex aneurysms is occasionally necessary.^[2] Critical dissection of perforating vessels from the aneurysm is facilitated by the lateral trajectory of the subtemporal approach.^[1] Incorporation of additional trajectories can facilitate treatment of multiple aneurysms within the same procedure.

Case Description: A 48-year-old woman presented with a Hunt and Hess 1 and Fisher Grade 3 subarachnoid hemorrhage from a small and broad-necked basilar apex aneurysm that was not amenable to endovascular management. An unruptured left A1-A2 anterior cerebral artery aneurysm was also noted on vascular imaging. The patient underwent a combined right subtemporal and pterional approach for sequential clipping of the basilar and anterior communicating artery aneurysms. The third nerve, running between the posterior cerebral artery and the superior cerebellar artery, guided dissection to the basilar artery in the subtemporal approach. A temporary clip was placed on a vessel-free zone of the basilar trunk during dissection of perforators off the posterior aspect of the aneurysm dome. A fenestrated clip around the right P1 segment was used to ensure complete occlusion of the aneurysm. Indocyanine green angiography was used to confirm successful clipping and patency of parent and perforating vessels. The unruptured A1-A2 aneurysm was clipped without difficulty from the pterional trajectory. The patient had an uneventful postoperative recovery with the exception of transient right third nerve palsy.

Conclusion: As highlighted by this case, maintenance of open surgical skills for the treatment of complex aneurysms unamenable to endovascular therapies is critical.

Keywords: Anterior communicating artery aneurysm, Basilar aneurysm, Clipping, Microsurgery

[Video 1]-Available on:

https://doi.org/10.25259/SNI_1121_2021

Annotations^[1,2]

- 1) 0:13 - Clinical history
- 2) 0:21 - Preoperative imaging
- 3) 0:44 - Operative positioning
- 4) 0:59 - Operative procedure.

This is an open-access article distributed under the terms of the Creative Commons Attribution-Non Commercial-Share Alike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as the author is credited and the new creations are licensed under the identical terms.

©2021 Published by Scientific Scholar on behalf of Surgical Neurology International

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

REFERENCES

1. Nakov VS, Spiriev TY, Todorov IT, Simeonov P. Technical nuances of subtemporal approach for the treatment of basilar tip aneurysm. *Surg Neurol Int* 2017;8:15.
2. Winkler EA, Lee A, Yue JK, Raygor KP, Rutledge WC, Rubio RR, *et al.* Endovascular embolization versus surgical clipping in a single surgeon series of basilar artery aneurysms: A complementary approach in the endovascular era. *Acta Neurochir (Wien)* 2021;163:1527-40.

How to cite this article: Rennert RC, Twitchell S, Budohoski KP, Couldwell WT. Combined subtemporal and pterional approach for clipping of multiple aneurysms. *Surg Neurol Int* 2021;12:619.