

The Role of Frontotemporal (Dolenc) Transcavernous Approach in the Endoscopic Management of Giant Juvenile Nasopharnygeal Angiofibromas

Dominik M. A. Wesp MD; Jean Anderson Eloy MD; James K. Liu MD [Institution]

Click To Add Logo

Introduction

Giant juvenile nasopharyngeal angiofibromas (JNAs) are challenging because of their hypervascularity and extension into the skull base. The role of endoscopic endonasal approaches has gained increased popularity for resection of these lesions. However, giant JNAs that have arterial feeders from the internal carotid artery (ICA) circulation are not amenable to preoperative embolization and present difficult challenges when approaching endoscopically. Vascular control of the cavernous ICA is often difficult since it is situated behind a hypervascular tumor. In these instances, a frontotemporal extradural Dolenc approach may useful in establishing early control and protection of the cavernous ICA prior to resection of the JNA endoscopically from below. We describe the role and concept of combining the frontotemporal Dolenc approach with endoscopic endonasal and transmaxillary approaches for giant JNAs.

Methods

Two patients with giant JNAs with intracranial extension underwent combined frontotemporal transcavernous approach with endoscopic endonasal transmaxillary approach. Both patients had residual vascularity

Results

In both cases, a gross total resection was achieved without vascular injuries or significant neurological deficits. One patient had a postoperative CSF leak that was successfully repaired endoscopically. Both patients had mild V2 numbness that was well tolerated.

Conclusions

The frontotemporal Dolenc approach allows excellent early vascular control of the cavernous ICA. The tumor can be safely dissected away from the cavernous sinus to achieve early protection of cavernous sinus contents to facilitate safe endoscopic resection of giant JNAs with intracranial extension via endonasal and transmaxillary corridors. The addition of the Dolenc approach appears to be a useful adjunct in the surgical management of complex giant JNA with intracranial extension using a multicorridor strategy.

Learning Objectives

By the conclusion of this session, participants should be able to discuss transcranial approaches to JNAs

References

Juvenile Nasal Angiofibromas: A Comparison of Modern Staging Systems in an Endoscopic Era

Nicholas R. Rowan, Nathan T. Zwagerman, Molly E. Heft-Neal, Paul A. Gardner, Carl H. Snyderman

J Neurol Surg B Skull Base. 2017 Feb; 78(1): 63–67.

Endoscopic graduated multiangle, multicorridor resection of juvenile nasopharyngeal angiofibroma: an individualized, tailored, multicorridor skull base approach. Liu JK, Husain Q, Kanumuri V, et al. J Neuro Surg. 2015;13:1–11