

# Treatment of Facial Pain via Trans-Meckels Cave Approach for Meningioma Resection

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## Abstract

We present the case of a female in her forties with debilitating trigeminal neuralgia due to a left Meckel's cave meningioma. MRI demonstrated a dural-based enhancing lesion expanding the left Meckel's cave and displacing the trigeminal ganglion. The patient underwent a left pterional pretemporal trans-Meckel's cave approach, achieving gross total resection. Postoperative imaging confirmed complete removal. The patient experienced immediate and durable pain relief, remains neurologically intact, and is medication-free at six-month follow-up.

## Introduction

### Clinical History:

Female in her fifth decade of life who presents for evaluation of severe left sided facial pain for several months. She has been unable to talk or eat secondary to this pain which has resulted in a significant weight loss. She was found to have a left sided dural base lesion centered in the left Meckels Cave on outside imaging. On initial evaluation by another neurosurgeon this was deemed inoperable and patient was offered proton beam radiation. Following radiation, her pain did transiently improve for 6 months but then recurred. She presented for a second opinion.

### Exam:

Neurologically intact

### Diagnosis:

Meckel's cave meningiomas are rare benign tumors that arise from the dura around the trigeminal ganglion within the Meckel's cave.<sup>1</sup> When these tumors compress, displace, or distort the trigeminal nerve root or ganglion as they expand into or around the cave, they can produce secondary trigeminal neuralgia characterized by severe paroxysmal facial pain, and surgical resection often alleviates symptoms by relieving that compression.<sup>1</sup>

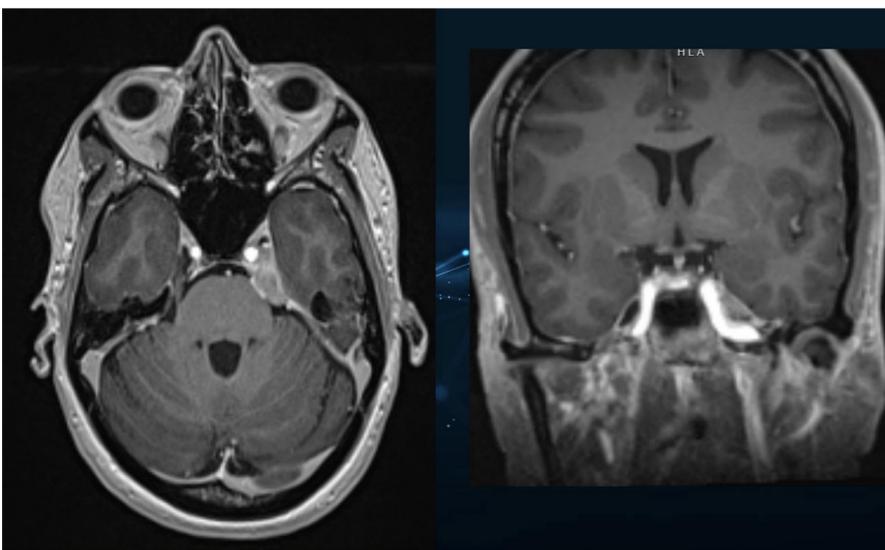


Figure 1. MRI Brain T1 weighted post contrast axial and coronal views demonstrating a left enhancing dural based lesion centered in left meckel's cave resulting in effacement of the trigeminal nerve and ganglion. It effaces the lateral border of the cavernous sinus without evidence of invasion.

## Operative Plan

### Operative Decision Making:

The patient suffers from debilitating left facial pain that is refractory to conservative measures and radiation. Recommend debulking/resection of mass.

### Position:

Supine with bump, head turned to the right

### Approach:

Left Pterional Craniotomy, pretemporal trans-meckels cave approach

## Operation

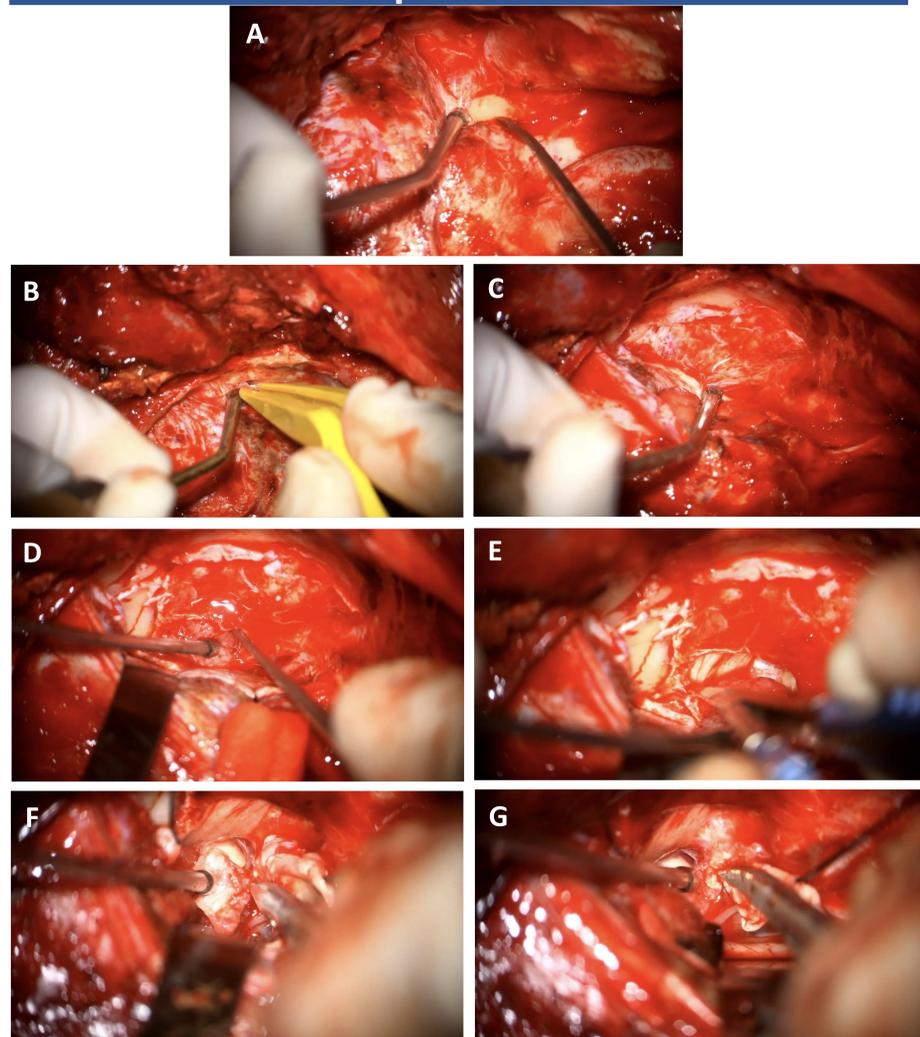


Figure 2. A) Extradural exposure towards the anterior clinoid process. B) Cautery and transection of the meningorbital Band to allow for temporal release and retraction. C) Sphenoid ridge is drilled flush to allow for visualization of dura of Meckel's cave. D) Lateral wall of meckel's cave is opened and tumor is encountered. E) Trigeminal nerve and ganglion are identified and circumferentially decompressed. F) Tumor deep and medial is removed. G) Dura is inspected and cleaned of any residual tumor.

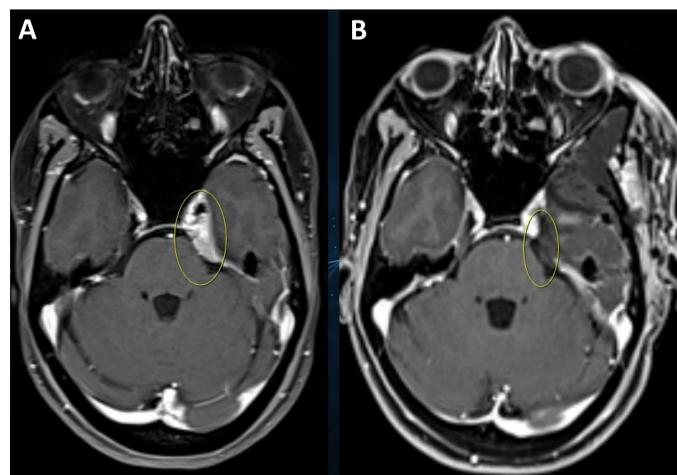


Figure 3. MRI Brain T1 post contrast axial views comparing Preoperative (A) and Postoperative (B) scans demonstrating gross total resection, re-expansion of the left cavernous sinus.

## Post Operative Course

Postoperatively, patient did well. She remained neurologically intact.

Pain free immediately following surgery. Final pathology was consistent with WHO I Meningioma.

Patient remains pain free 6 months postop, all medications discontinued

## Conclusions

In summary, the pretemporal trans-Meckel's cave approach offers a safe and effective route for the resection of Meckel's cave meningiomas. In this case, gross total resection was achieved with complete resolution of symptoms and preservation of neurological function.

## Contact

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## References

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