Retrosigmoid trans-suprameatal approach for resection of trigeminal schwannoma with Meckel's cave extension - Perspective from a new skull base faculty

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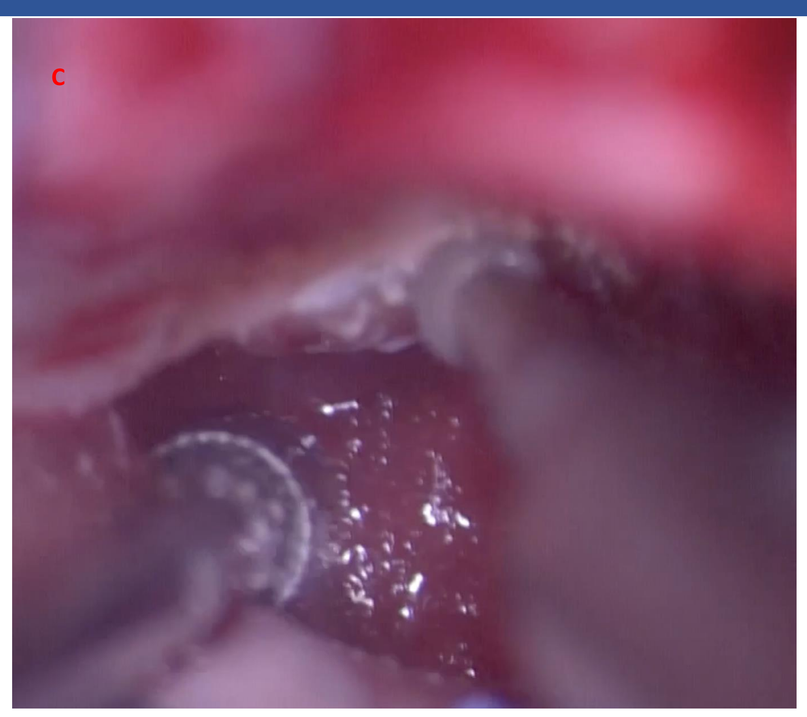

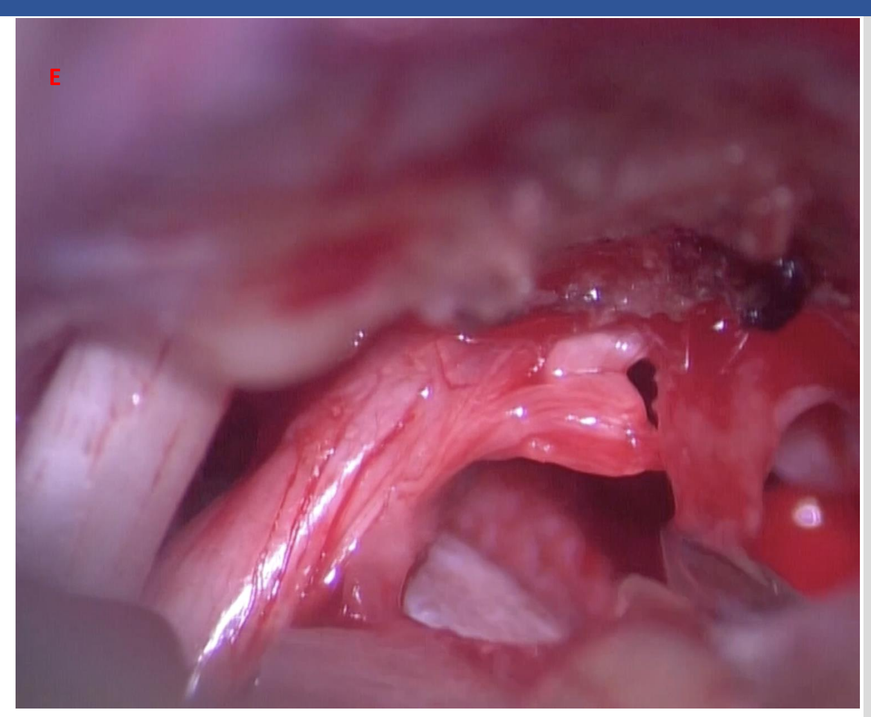

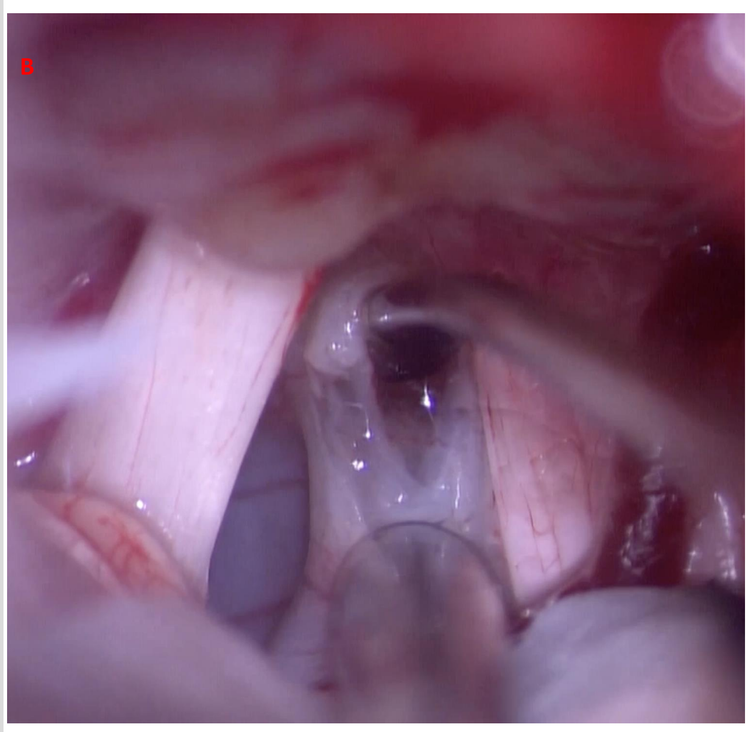

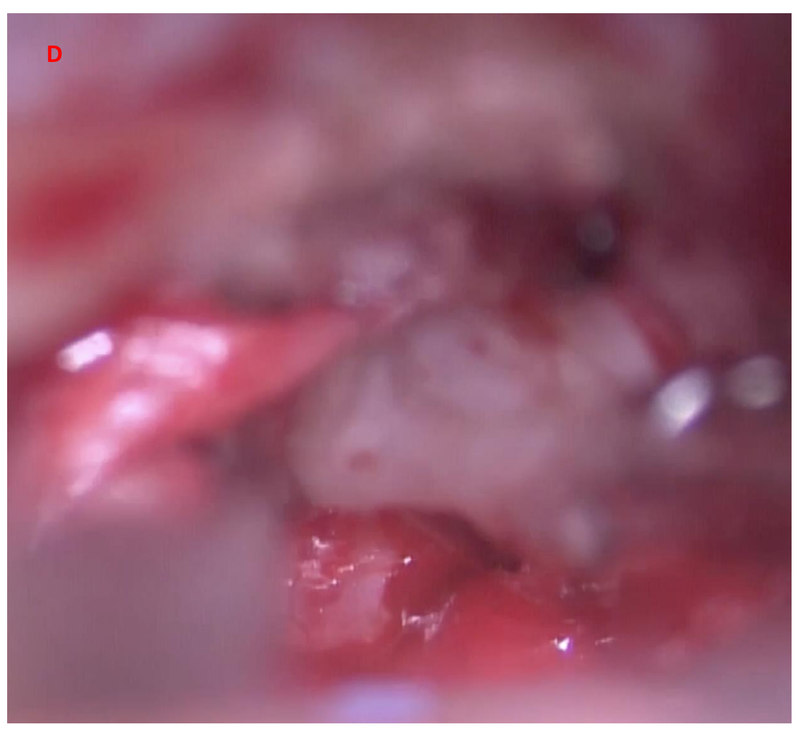

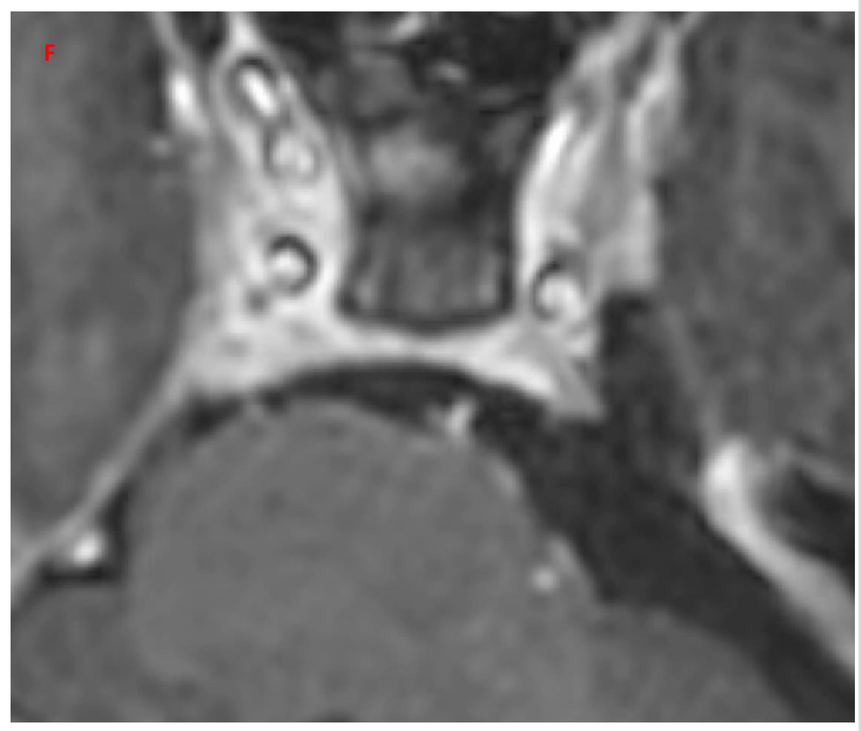

Introduction

Trigeminal schwannomas (TS) are rare subtypes of schwannomas. They can originate from the cisternal segment of the nerve or from one of its subdivisions. The cistern trigeminal schwannomas tend to extend into the Meckel's cave, making their resection very complex. Here, we give our surgical perspective from the standpoint of a new skull base faculty in his first year post-fellowship.

Methods and Materials

A retrospective analysis of the cases performed by the author in past 6 months were reviewed and 4 cases of TS were identified out of which 1 was found to be originating from cisternal segment.

Results

A 50yr old female presented with headaches. Imaging demonstrated a large TS with extension into Meckel's cave (A). On neurological examination, she was found to have hypoesthesia of left face.

Results

A left sided retrosigmoid craniotomy was performed. Cerebellomedullary cistern was opened to release CSF. Dynamic retraction was used throughout the procedure. A large mass originating from the trigeminal nerve was identified on the caudal end. Normal nerve fibers were dissected away from the mass. Internal debulking was performed (B). Once the cisternal portion of the tumor was removed, attention was directed towards drilling the suprameatal tubercle (C). This allowed visualization of Meckel'c cave. Using angled dissectors and gentle traction the tumor was mobilized and gently pulled out of Meckel;s cave (D). Normal trigeminal nerve fibers were preserved (E). Patient tolerated the procedure well. Post-operative imaging demonstrated gross total resection of the tumor (F). Patient continued have left sided hypoesthesia which resolved 3 months post-op.

Discussion

Cisternal trigeminal schwannomas with extension into Meckel's cave present significant surgical challenges, specially to young faculty members. Familiarity with surgical anatomy is critical. The suprametal drilling was performed by the primary surgeon. It is not unreasonable to have a neuro-otologist available during the case to help with drilling. Use of an endoscope can also provide better views of the Meckel's cave, although in this particular case, microscopic view was adequate for tumor resection due to extensive petrous drilling.

Conclusions

Cisternal trigeminal schwannomas with Meckel cave extension can be safely removed via a retrosigmoid approach with excellent outcomes. Prior experience with similar cases and experience with suprameatal drilling are key factors in determining outcomes.

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