

Endoscopic Endonasal Transclival Transpetrosal Approach for Removal of a Large Sphenopetroclival Chondrosarcoma: Technical considerations for Maximal Safe Resection

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Introduction

Petroclival synchondrosis is the most common site of skull base chondrosarcoma.¹ The cavernous sinus is also involved in roughly 50% of the cases (so-called sphenopetroclival chondrosarcoma-SPCC), inversely correlating with the extent of resection and progression-free survivals.^{2,3} The endoscopic endonasal transclival approach (EETCA) offers unique multi-compartmental access to the tumor with minimal manipulation of the cranial nerves, which are commonly displaced against the tumor periphery.^{4,5} By utilizing angled instruments, the retrocarotid space is accessible with minimal medial pterygoidectomy.

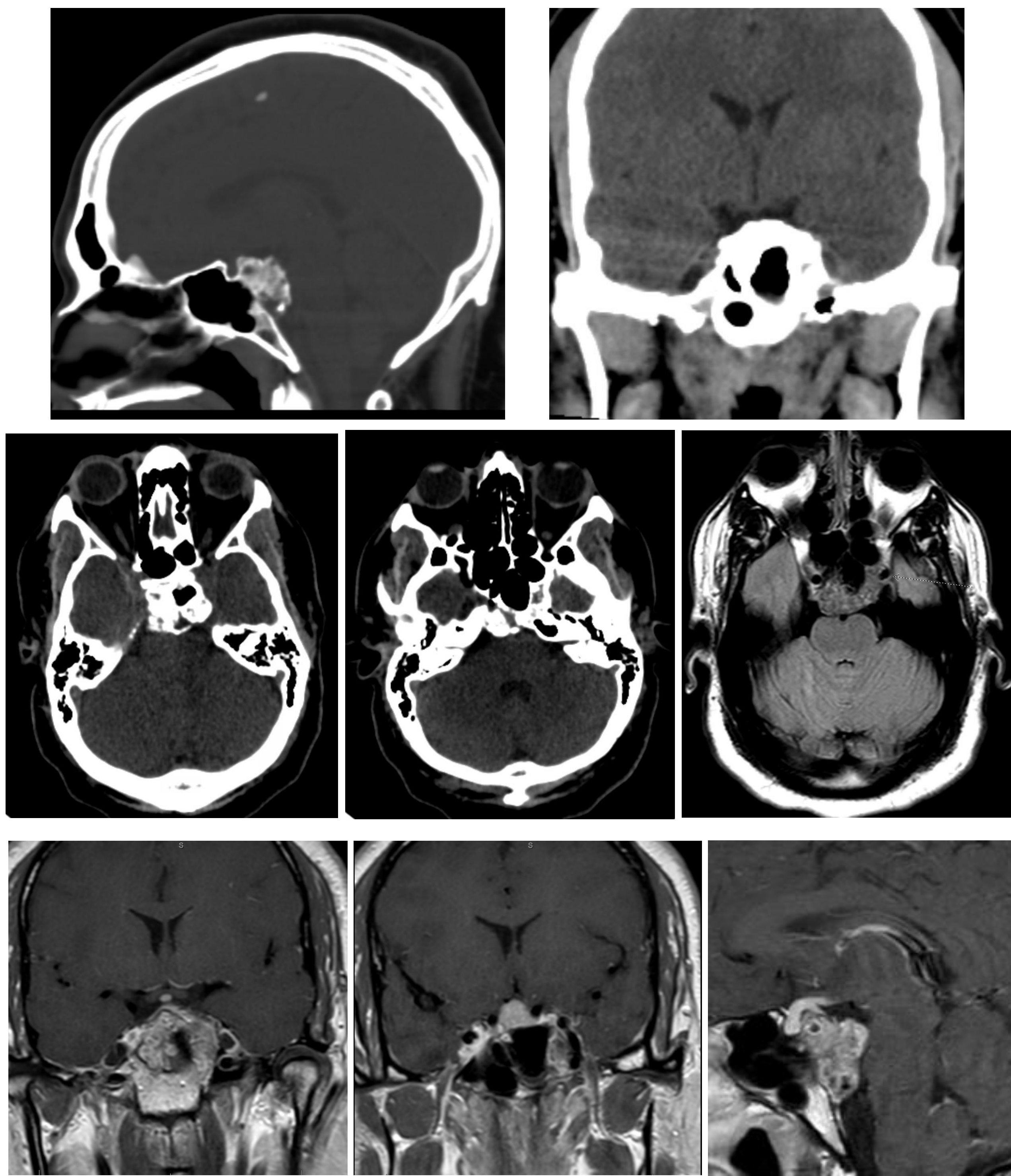


Figure 1. Preoperative CT scan and MRI.

Methods and Materials

The patient is a 41-year-old male presented with a chronic nonspecific headaches. A large sclerotic-lytic mass in the upper and middle thirds of clivus involving both petrous apices was revealed in CT scan. MRI showed pontine compression, bilateral cavernous sinus involvement, and partial encasement of the left cavernous carotid artery (CCA) (Figure 1). The technical nuances of EETCA without a full transpterygoid corridor and carotid mobilization is presented.

Results

An endoscopic endonasal transclival bilateral anteromedial transpetrosal transcavernous approach was performed (Figures 2), and near-total resection was achieved.

MRI showed small tumor remnants over the left CCA and left posterior clinoid process.

A grade I conventional chondrosarcoma was confirmed in histopathology. Given the histology and residual tumor, the patient subsequently underwent proton beam radiotherapy. Surveillance imaging showed stable disease without progression or recurrence (Figure 3).

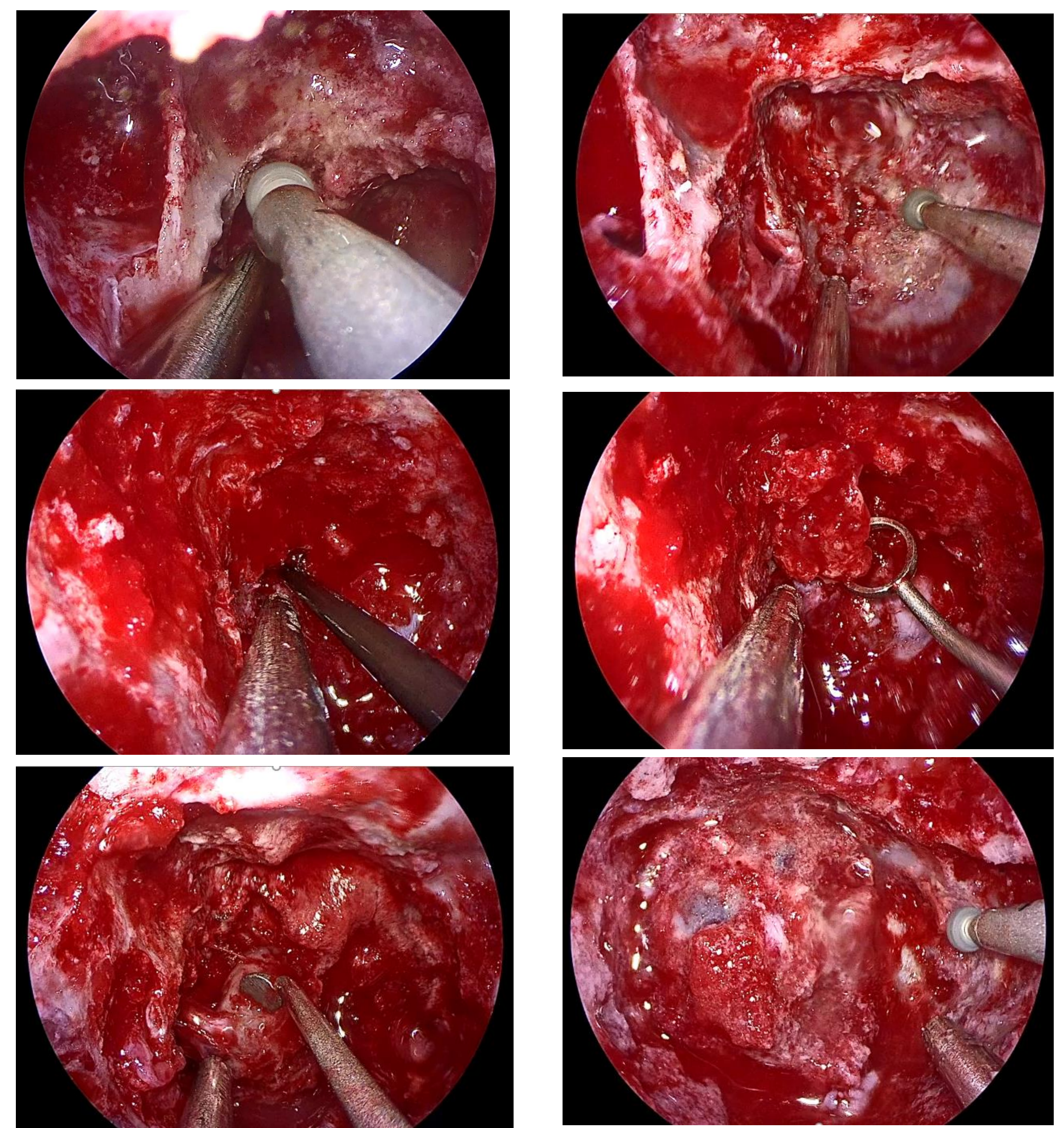


Figure 2. Intraoperative views.

Conclusions

EETA offers maximal safe resection of SPCC with bilateral anteromedial petrous apex involvement without the need for complex maneuvers that could jeopardize carotid arteries or vidian nerves. When judiciously planned for low-grade residual tumors, very low recurrence rates are expected with adjuvant radiotherapy.⁶

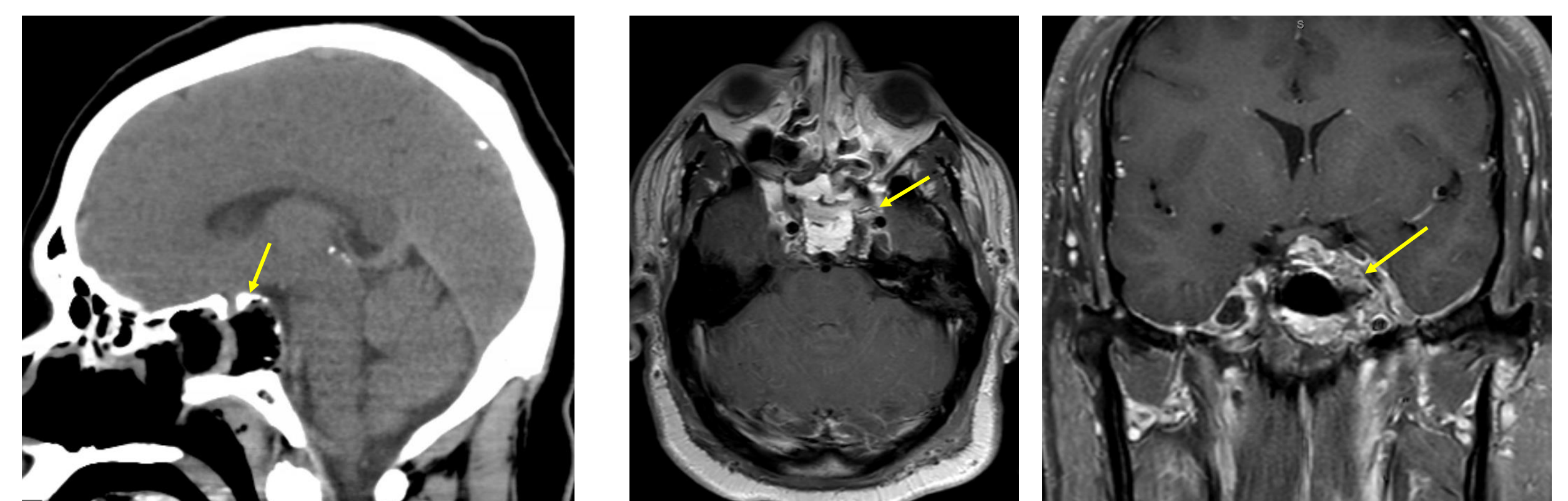


Figure 3. A 2-year postoperative follow-up MRI.

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