

# Massive Vestibular Schwannoma Requiring Serial Debulkings and Radiosurgery

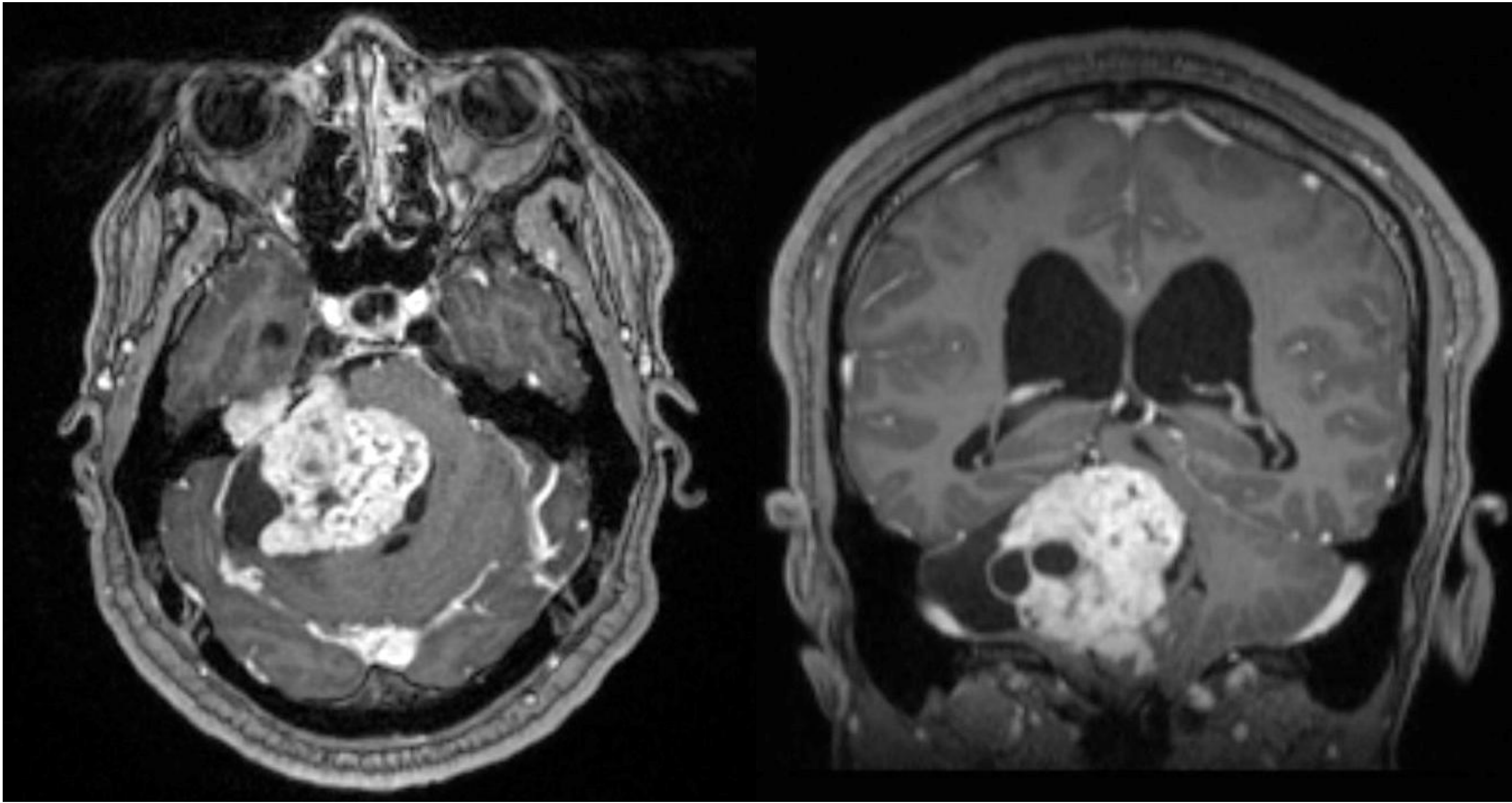
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## Introduction

Vestibular schwannomas (VS) are diagnosed in a wide range of sizes with varying patient presentations. This report discusses a young male with a massive cystic VS in the absence of a genetic mutation who presented due to speech and balance concerns.

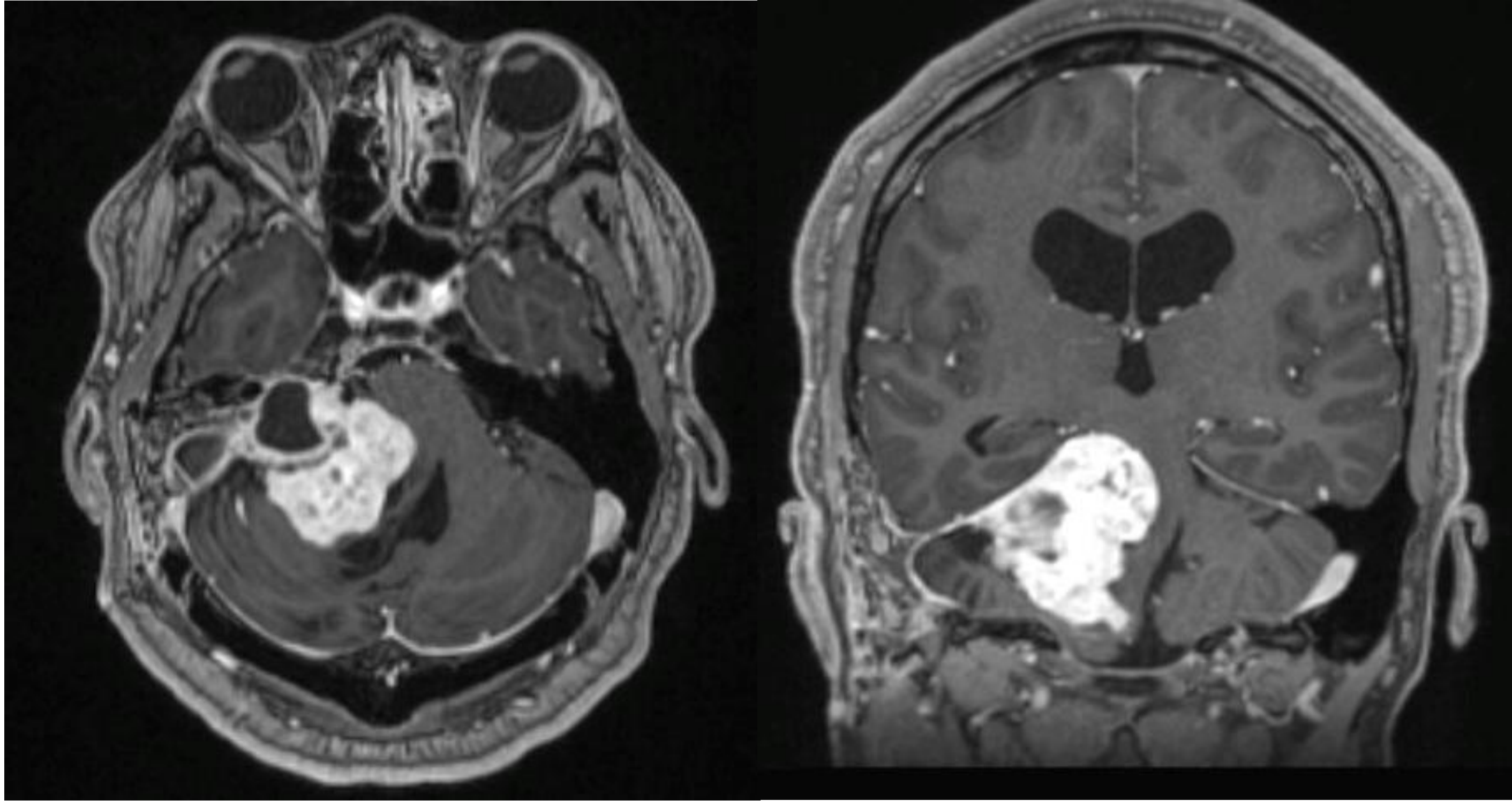
**Figure 1. T1-weighted post-contrast IR-SPGR MRI showing axial (A) and coronal (B) images of a large vestibular schwannoma with brainstem compression in a 32-year-old male prior to initial treatment.**



## Methods

Case report of a patient with a massive vestibular schwannoma requiring multiple debulkings and radiosurgery

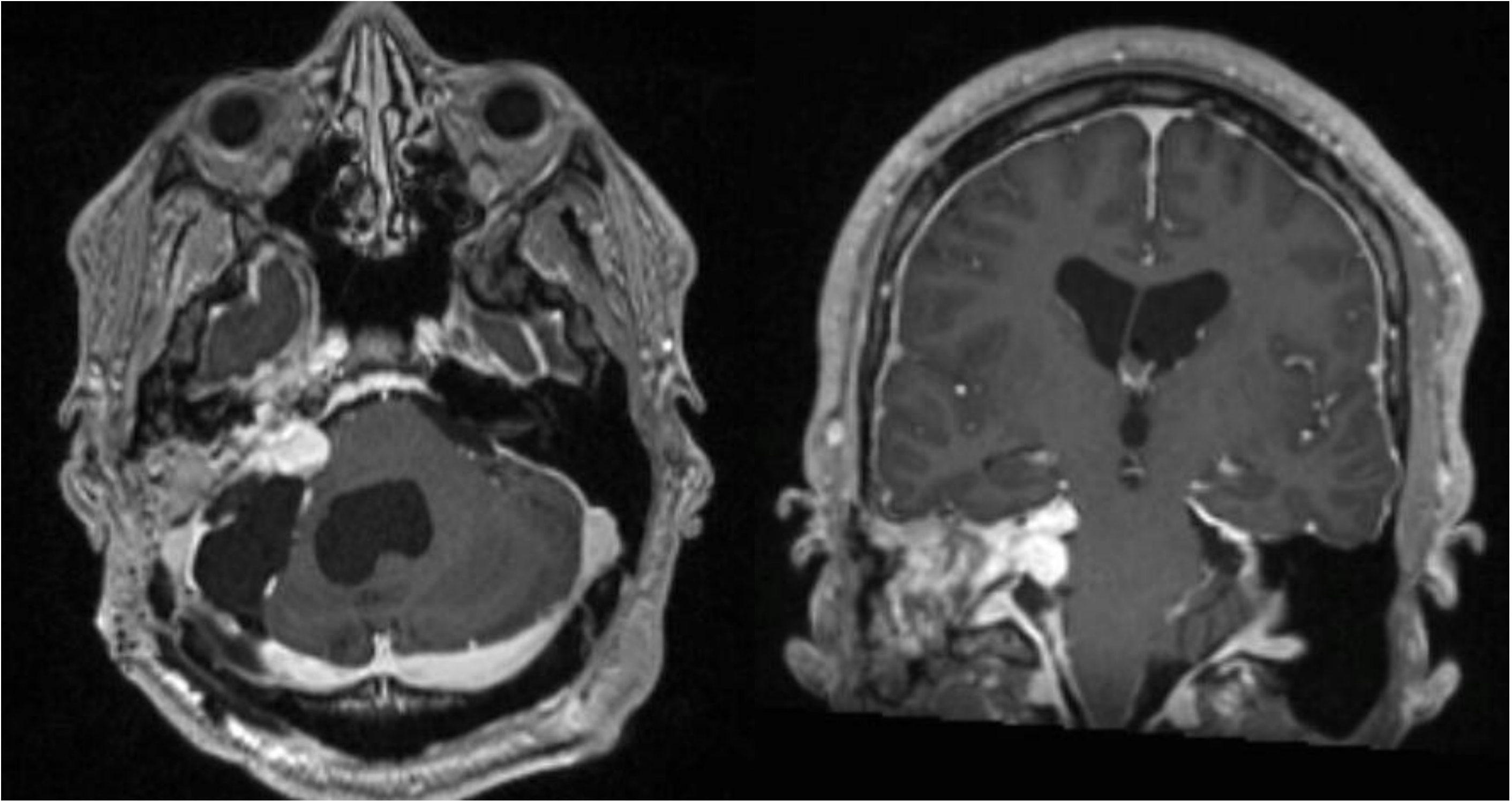
**Figure 2. Axial (A) and coronal (B) T1W post-contrast IR-SPGR MRI images of residual vestibular schwannoma after translabyrinthine debulking. Note improved, but persistent brainstem compression and large extent of residual tumor.**



## Results

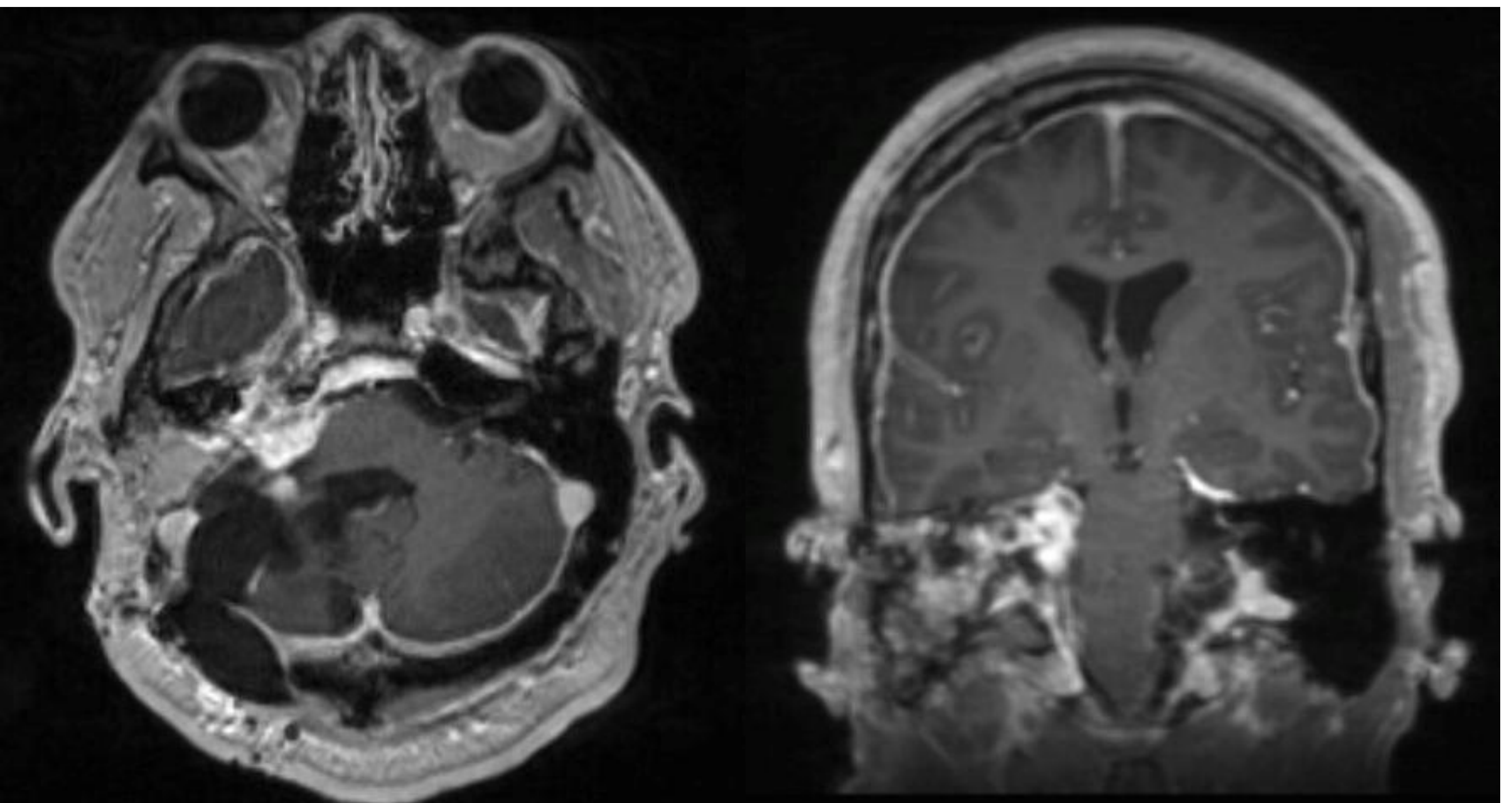
A 32-year-old male presented with longstanding right unilateral sensorineural hearing loss (SNHL) and recently manifested slurred speech, balance problems, and reduced facial sensation above his right eye. An MRI identified a large, 5.0 x 5.4 x 5.1 cm cystic vestibular schwannoma with resultant brainstem compression and hydrocephalus (Figure 1). A translabyrinthine approach was performed. After substantial debulking, limited visualization precluded further safe dissection of the posterior tumor capsule in deep margins of the cerebellar peduncles and brainstem junction as the brainstem and nerve complexes were unable to be identified proximally.

**Figure 3. Axial (A) and coronal (B) T1-weighted post-contrast IR-SPGR MRI images of residual vestibular schwannoma after translabyrinthine and retrosigmoid debulkings and prior to gamma knife radiosurgery.**



The patient developed facial paralysis (House-Brackmann VI/VI post-op day 1. Consequently, a subtotal resection was performed with the intention that a subsequent retrosigmoid approach would allow for complete resection.(Figure 2). A retrosigmoid approach was subsequently performed to further debulk the tumor. His postoperative course was complicated by an infected pseudomeningocele requiring surgical washout and bone cement removal and eventual placement of a ventriculoperitoneal shunt. Residual tumor growth on interval MRI 5 months after the second operation (Figure 3) prompted Gamma Knife radiosurgery which the patient tolerated well. Subsequent MRI 9 months after radiosurgery demonstrated stable residual tumor without interval growth (Figure 4). The patient experienced significant improvement in ambulation after tumor removal. Facial reanimation surgery is planned along with continued tumor surveillance.

**Figure 4. T1W post-contrast IR-SPGR MRI axial (A) and coronal (B) images of residual vestibular schwannoma 9 months after gamma knife radiosurgery. Note absence of interval growth from pre-radiosurgery MRI.**



## Conclusion

Although the goal of VS surgery is maximal safe resection, preferably in a single stage, in cases of massive VS serial debulking may be required utilizing a combination of approaches for maximal tumor removal. Postoperative adjuvant radiation may be considered in tumors with progressive residual disease. This case report provides an example of a particularly large tumor requiring a complex approach to management. Further research into the tumor characteristics predictive of aggressive growth is needed.

### CONTACT

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