Combined microsurgical decompression for trigeminal neuralgia and hemifacial spasm - Case presentation, surgical approach, operative video and outcome

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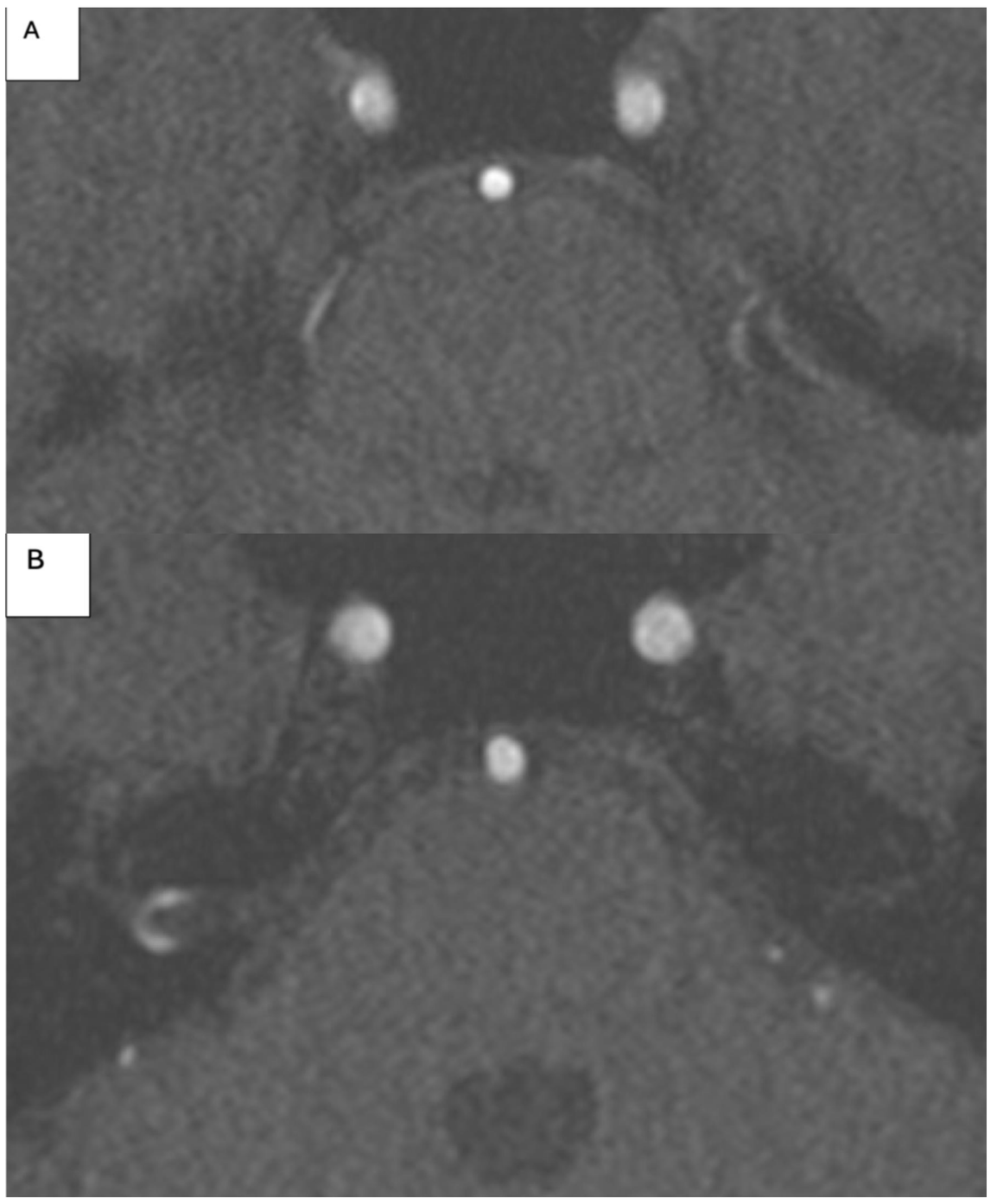

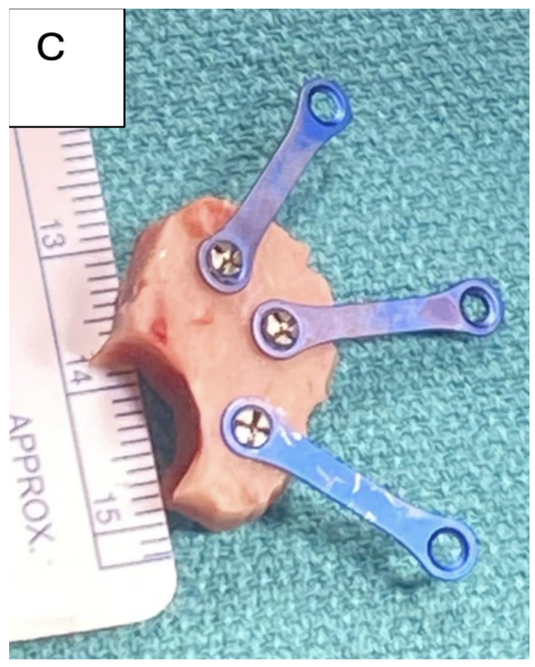

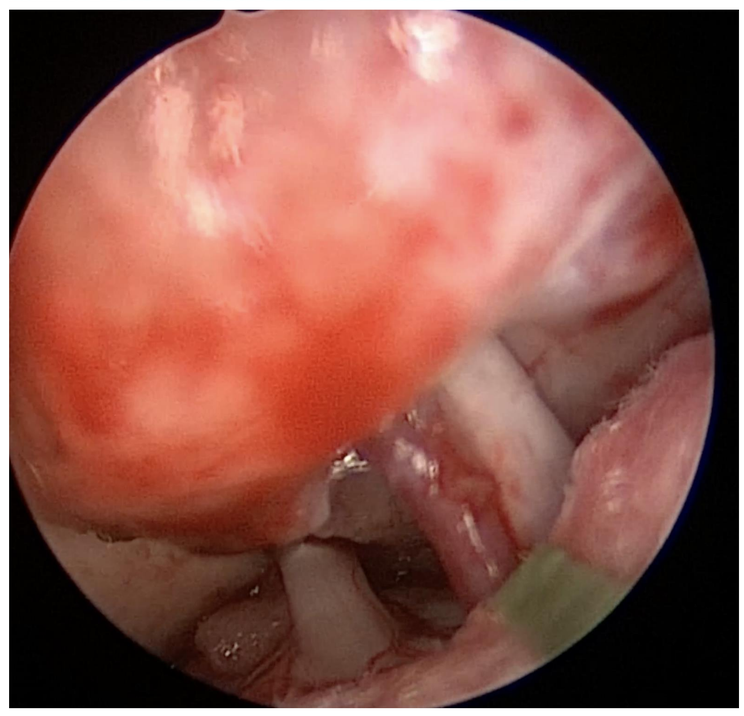

Introduction

Dual presentation with trigeminal neuralgia and hemifacial spasm is rare. It usually involves two offending vessels compressing the trigeminal nerve and 7/8 nerve complex. Here, we present a care report of a patient with dual compression.

Methods and Materials

A retrospective analysis of cases performed in last 6 months since starting first post-fellowship faculty position were reviewed.

Case Presentation

A 54yr old female presented with medically refractory symptoms of trigeminal neuralgia in V2 distribution, hemifacial spasm on the same side. Further, she complained of vertigo, hearing loss and tinnitus. Radiographically, she was found to have a superior cerebellar artery (SCA) compressing the trigeminal nerve root (Fig. A) and type III anterior inferior cerebellar artery (AICA) loop extending into the internal auditory canal (IAC) on the same side (Fig. B).

Case Presentation

Patient was completely debilitated from her symptoms and elected to proceed with surgical intervention. An endoscopic assisted retrosigmoid craniotomy was performed using a 4cm linear incision. A 2cm craniotomy (Fig. C) performed and cerebellomedullary cistern drained. First, attention was directed towards trigeminal decompression, which was performed in the usual fashion. Second, 7/8 nerve complex was evaluated. An AICA loop extending into IAC was partially seen ventral to nerve complex. An endoscope was brought into the field to get better visualization of the vessel and surrounding anatomy. Vascular loop was gently pulled but was adherent with thick arachnoid membranes. Microvascular dissection was performed to free the vascular loop and gently pulled. Labyrinthine artery originating from the tip of the loop was identified which prevented further manipulation once the loop was out in the cerebellopontine space. The loop tended to recoil back into the IAC.

Results

Using Teflon pledges, the loop was anchored in the cerebellopontine space. Valsalva was performed to confirm the that vascular structures remain in place. Closure was performed in usual fashion. Post-operative day 1 (POD1), she had complete resolution of symptoms with improvement in hearing. She was discharged the same day.

Conclusions

Combined presentation of trigeminal neuralgia and hemifacial spasm symptoms is rare. Dual microvascular decompression can be performed without making a large craniotomy and draining cerebrospinal fluid. Endoscope is an essential tool to help better visualize the ventrally placed AICA loop. Care must be taken not to avulse the labyrinthine artery originating from the tip of the vascular loop. Further, close attention must be paid to secure the loop, preventing it from recoiling into IAC, at the same time, not using too many Teflon pledges. In patients who fail medical management, endoscopic assisted microvascular decompression provides an excellent tool to provide rapid resolution of symptoms.

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