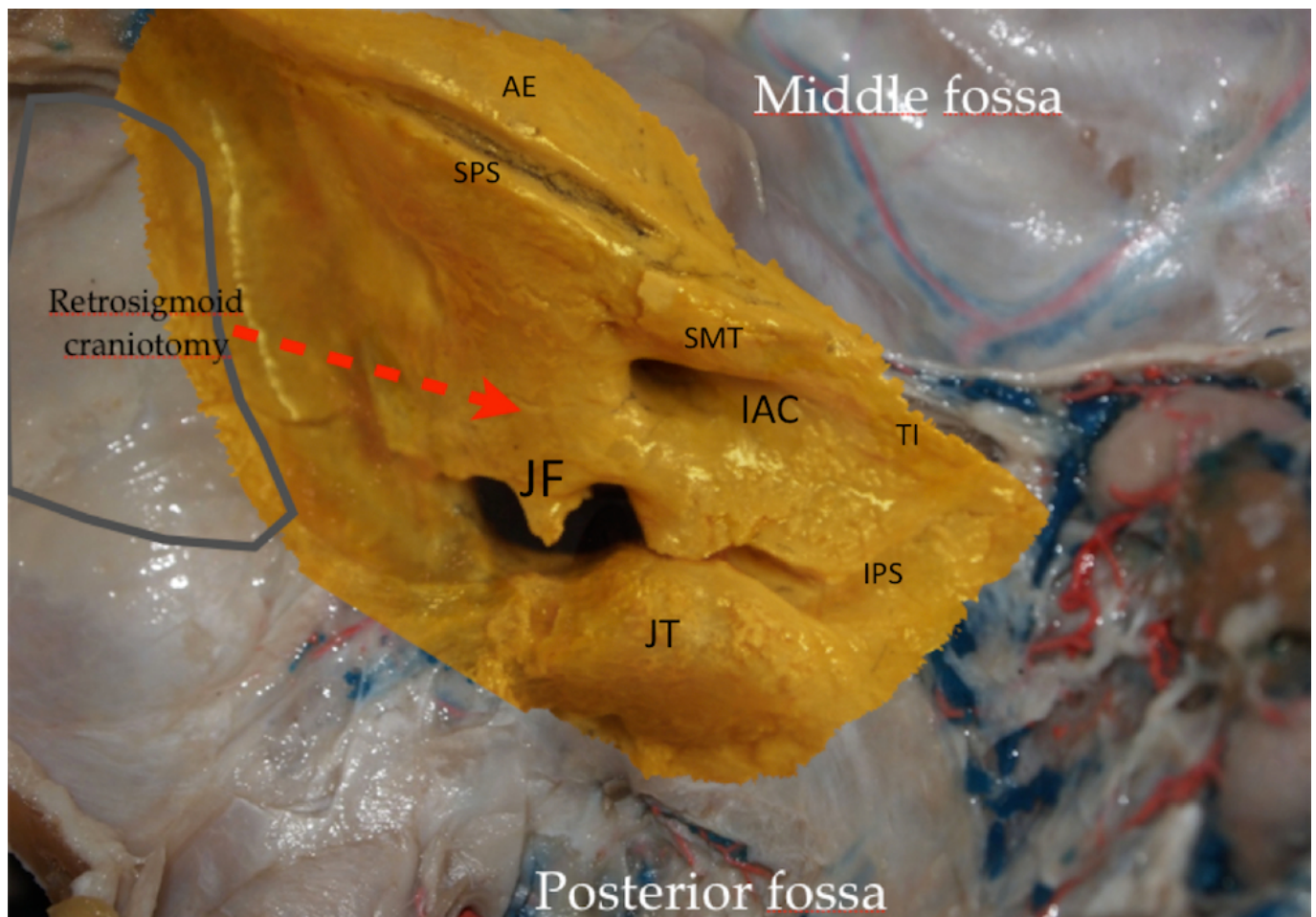
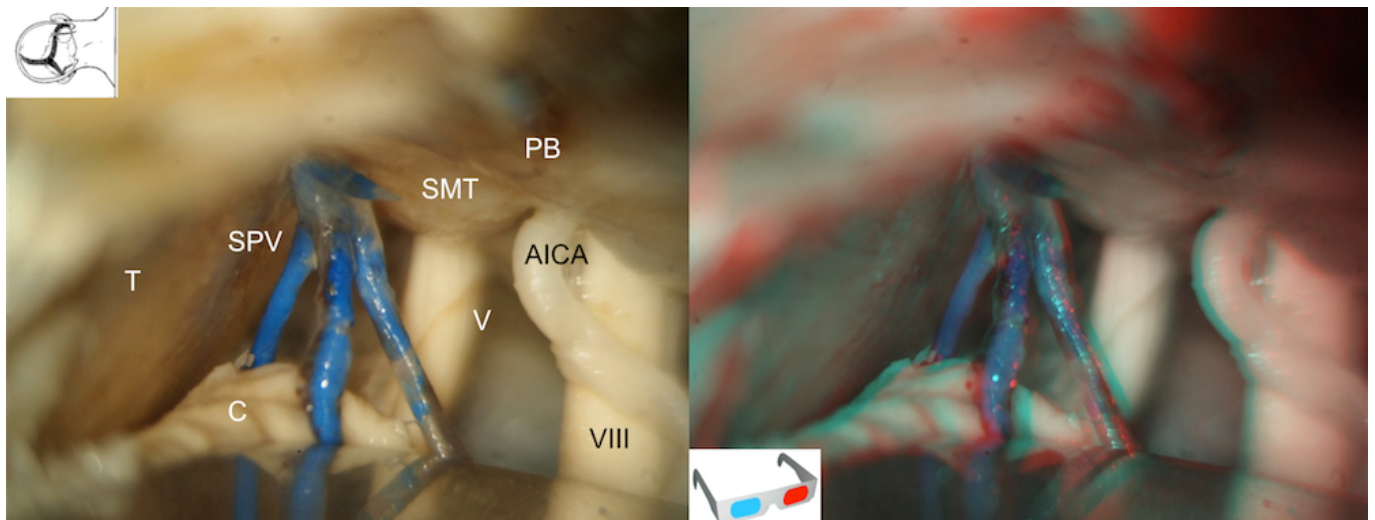


Suprameatal tubercle



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AE: Arcuate eminence; IAC: Internal acoustic canal; IPS: Inferior petrosal sinus; JF: Jugular foramen; JT: Jugular tubercle; SMT: Suprameatal tubercle ; SPS: Superior petrosal sinus ; TI: Trigeminal impression.



<http://www.3dneuroanatomy.com/wp-content/uploads/2012/06/rs3d-11a.jpg>

AICA: Anteroinferior cerebellar artery; C: Cerebellum; PB: Petrosal part of the temporal bone; SPV:

Superior petrosal vein; SMT: Suprameatal tubercle; T: Tentorium;; V*: Motor roots of the trigeminal nerve.

Drilling

Microscopic endoscopic assisted suprameatal tubercle drilling is a feasible procedure that allows the identification of all neurovascular structures in the cerebellopontine angle and petrous apex region ¹⁾.

By drilling off the suprameatal tubercle and part of the petrous apex, Meckel's cave may be opened, the trigeminal nerve mobilized, and the tentorium divided. Thus the parasellar region may be exposed and the posterosuperior space of the cavernous sinus approached. Using an endoscope-assisted technique and following cisternal anatomy, the sellar and parasellar region may be explored even if the working space is narrow. The retrosigmoid intradural suprameatal approach provides optimal accessibility to medially located central skull base structures, in particular to the posterior part of the cavernous sinus. Use of the endoscope may remarkably optimize the accessibility ²⁾.

The microsurgical anatomy of the Retrosigmoid intradural suprameatal approach was examined by using 10 adult cadaveric specimens (20 sides), using 3-40x magnification. The exposure to the posterior cavernous sinus provided by this approach was focused.

After drilling the suprameatal tubercle toward the petrous apex, the Meckel's cave was exposed. The trochlear nerve was the landmark for opening the cavernous sinus by this approach. The dura located medially to the entry point of the trochlear nerve into the tentorium was resected, allowing exposure of the intracavernous carotid artery with its meningohipophyseal trunk.

The extended retrosigmoid intradural suprameatal approach allows exposure of the posterior cavernous sinus and may be used to remove lesions of the posterior fossa extending into the Meckel's cave and into the cavernous sinus ³⁾.

The drilling of the suprameatal bone during the retrosigmoid intradural suprameatal approach (RISA) puts the superior petrosal vein complex at risk of heating and mechanical injury, which may lead to cerebellar swelling and infarction. We present a new technique to protect the superior petrosal venous complex during suprameatal bone drilling.

A microanatomical laboratory investigation on cadaver was conducted. The surgical technique is described and intraoperative schematic pictures are provided.

The surgical steps of this technique and the related intraoperative images are reported. One case illustration regarding the removal of a large petrous apex meningioma with Meckel cave extension is described to demonstrate the application of the technique in a clinical setting.

Reflecting a dural flap onto the posterior trigeminal nerve root and the superior petrosal vein complex can be a simple way to protect the nerve and the vein during the suprameatal bone drilling during the RISA ⁴⁾.

¹⁾

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