



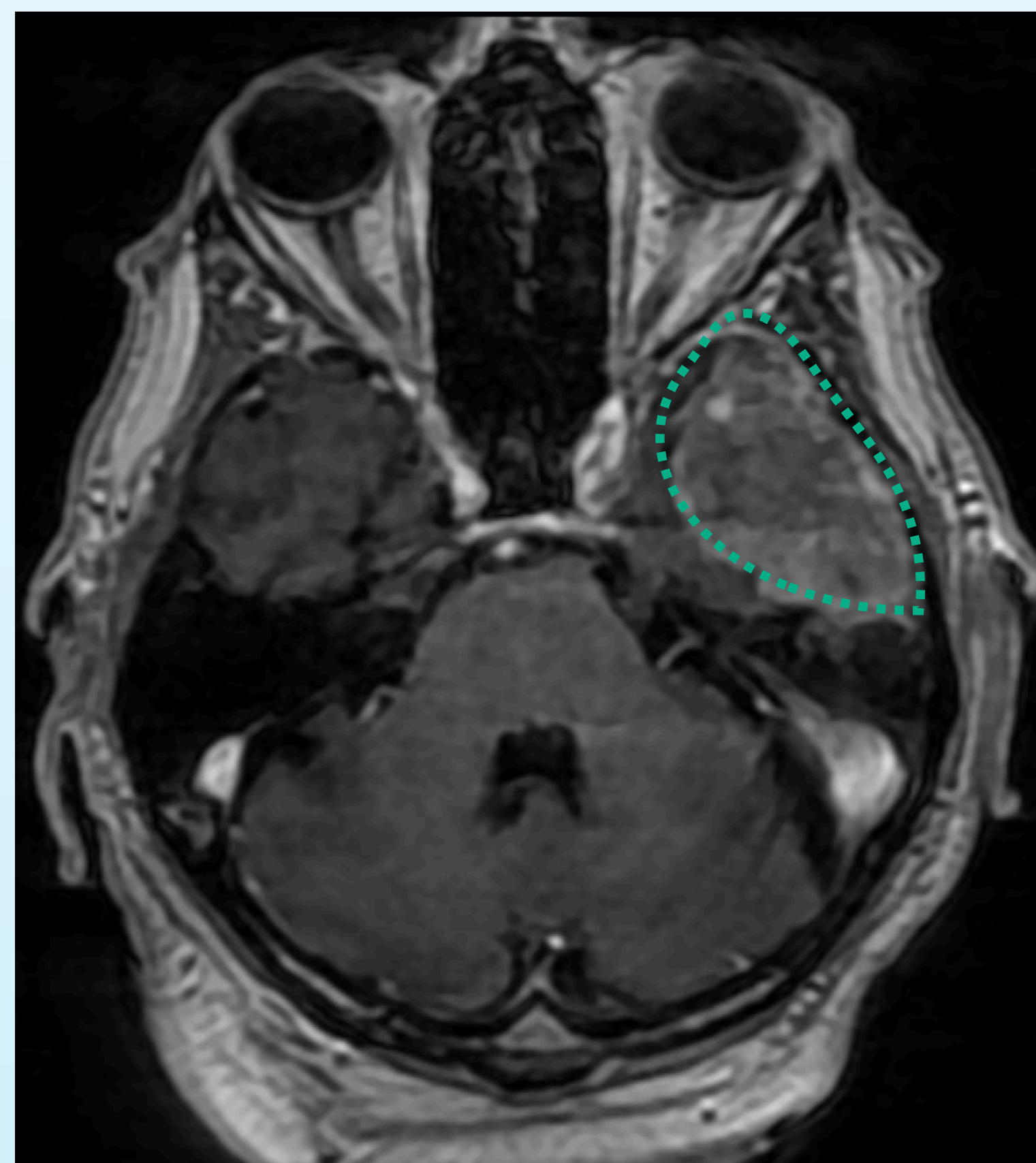
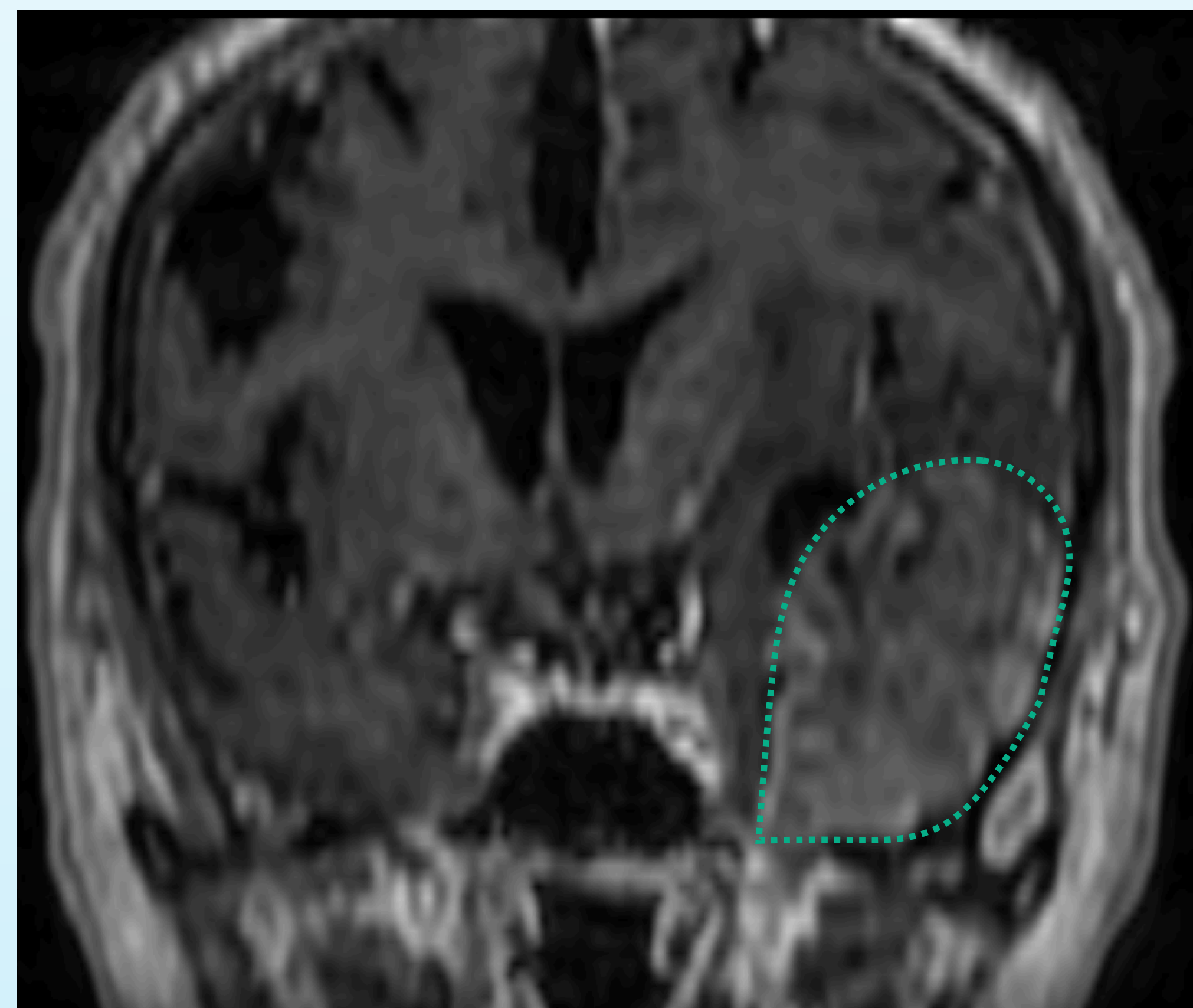
The mini-peeling of middle fossa technique: indications and description of the procedure



Castro Barros F. MD; Gresta F. MD; Bonilla G. MD; Desole D. MD; Pallini S. MD
Skull Base Division, Central Military Hospital (Bs As. ARGENTINA)

INTRODUCTION

The mini-peeling of the middle cranial fossa is an emerging surgical technique in the treatment of complex pathologies of the skull base, such as meningiomas, neurinomas, and vascular lesions that affect the temporal region and adjacent structures. This approach aims to minimize invasiveness and postoperative complications associated with traditional procedures, which involve wide craniotomies and greater manipulation of surrounding tissues.



INDICATIONS

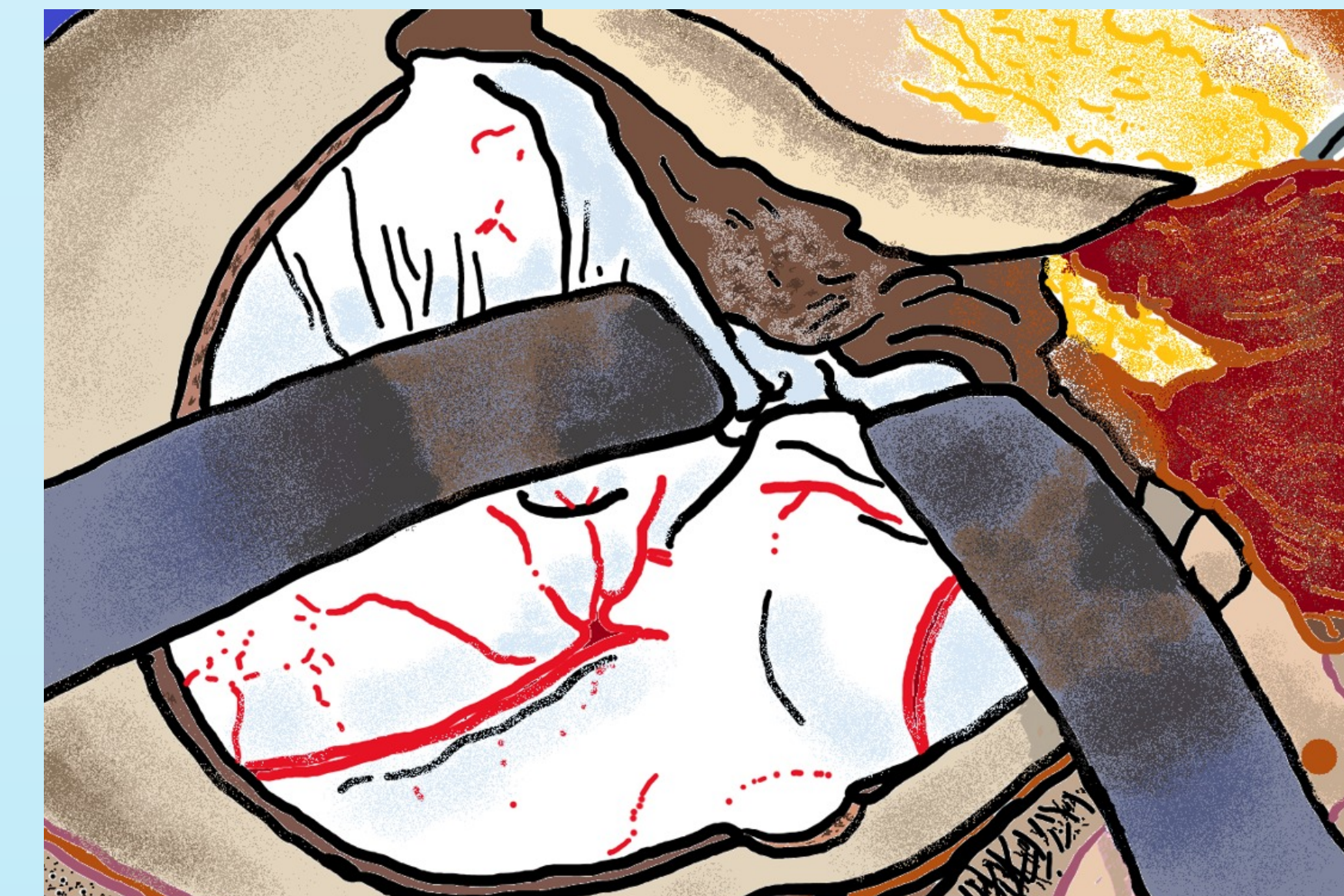
- TUMORAL LESIONS (SCHWANNOMAS V- VII, MENINGIOMAS MIDDLE FOSSA, CHOLESTEATOMA, GLOMUS)
- TRAUMA
- VASCULAR INJURIES
- OTHERS

METHODS

The excision of a tumor (meningioma) located in the wing of the sphenoid bone was performed through a pterional transzygomatic approach using the mini-peeling technique. **The main blood supply to these tumors comes from branches of the middle and accessory meningeal arteries.** Surgical removal of meningiomas requires early devascularization of the tumor.

THE TECHNIQUE

The patient is positioned with a cephalic rotation of 10-30 degrees. After making an arched skin incision, the interfascial/subfascial dissection is performed, allowing for retraction of the temporal muscle caudally. This allows for optimal exposure of the zygomatic arch.



Burr holes are made, completing a pterional craniotomy with a craniotome. The lesser wing of the sphenoid is drilled using a high speed drill.



Brain retraction covered by the duramater around the sphenoid wing, initially using retractors and later by placing sutures on the dura silk.



We must visualize the **orbitomeningeal band**. This one, **is coagulated only the first few millimeters, to avoid injuring the orbitomeningeal artery**, and a small incision is performed there.



- Perform a dissection, cutting the first layer of the duramater (the true dura) from medial to lateral. The parietal layer of the dura will remain attached to the cavernous sinus, while the visceral layer will cover the temporal lobe.
- Laterally, we first find out the **V3 branch**, and more laterally, **the middle meningeal artery entering the endocranium through the foramen spinosum**. We proceed to **coagulate and section the artery**, continuing laterally and inferiorly with the peeling. Significant venous bleeding is expected at this step.
- we reverse the direction of the dissection by moving medially to **expose the cavernous sinus**. This maneuver from medial to lateral and reverse is repeated as we continue to progress posteriorly toward the crest of the rock.
- **Meckel's cave can be incised with a scalpel to allow CSF drainage and relax the brain.**
- Once the cavernous sinus is exposed, fibrin glue (1ml) can be injected, to control the common and profuse bleeding associated with this step. **This maneuver may induce reflex bradycardia**. At this point, the middle fossa peeling proper is complete.

CONCLUSIONS

- The mini-peeling technique of the middle skull base represents a significant advancement in the surgical treatment of skull base pathologies by providing safer and less invasive access to complex lesions.
- Reduce neurological and aesthetic complications, offering patients a quicker recovery and better long-term outcomes.
- The success of this approach largely depends on rigorous preoperative planning and the expertise of the surgical team.
- As more specialized centers adopt this technique, it is likely that its application will expand and the criteria for its use will be further refined.