

Skull Base Meningiomas Treated with Endoscopic Endonasal Approaches.

Case series.

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Background

Meningiomas are typically benign, slow-growing tumors for which surgical resection is the primary treatment. Skull base meningiomas present a particular surgical challenge due to their proximity to critical neurovascular structures and potential for invasiveness.

Objective

To evaluate efficacy of endonasal endoscopic route in the surgical treatment of the skull base meningiomas.

Material and methods

A retrospective review of the consecutive series of patients with skull base meningiomas treated with endoscopic endonasal approaches was conducted. Tumor location, type of approaches, extend of resection (EOR), complications and outcomes were analyzed.

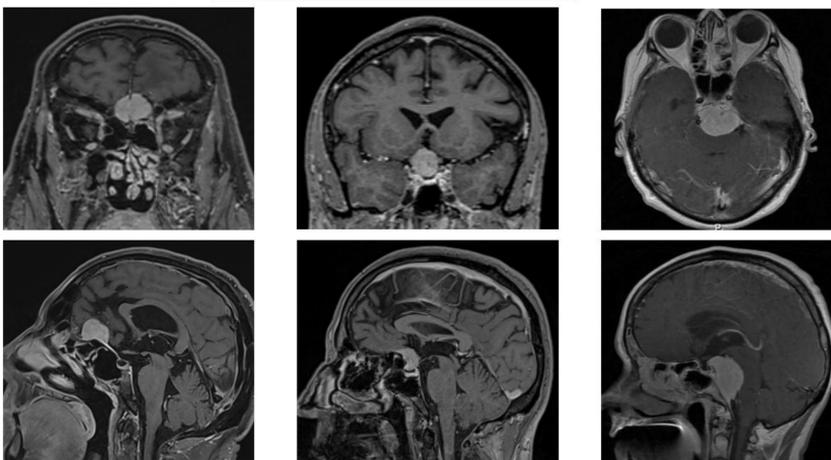
Patient's Data (n=19)

- Males – 9(28%) Females – 23(72%)
- Patient's age was between 32 and 75 years old
- Medium age was 56,8 years
- All surgeries were purely endoscopic
- Period of surgeries between 2010 and 2025 years

Tumor's localization

| Skull base | Subtype | N |
|----------------------|---|----|
| Anterior Skull Base | Olfactory groove | 5 |
| | Ethmoid cells with optic canal invasion | 5 |
| | Extracranial extension | 2 |
| Central Skull Base | Tuberculum Sellae | 10 |
| | Cavernous sinus | 6 |
| | Sphenoid sinus | 2 |
| Posterior Skull Base | | 2 |

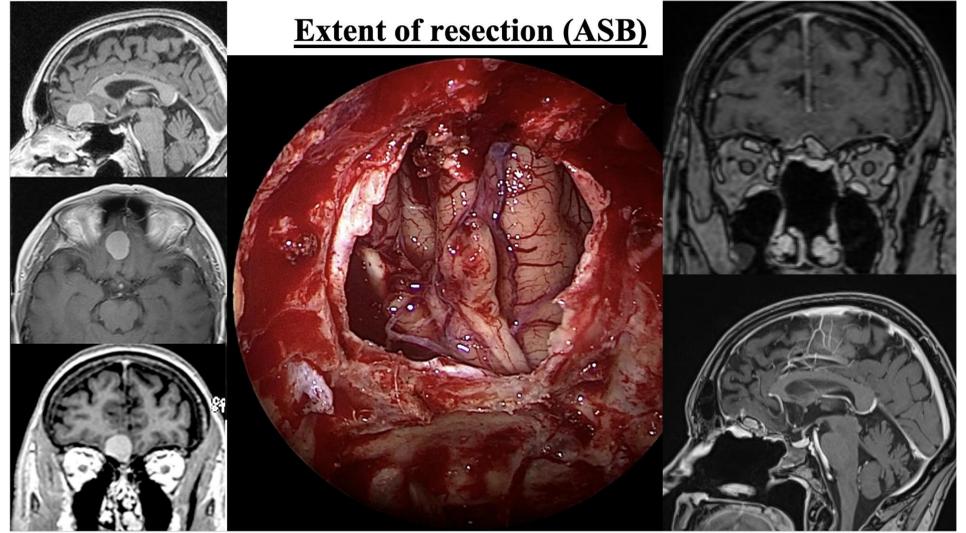
Tumor's localization



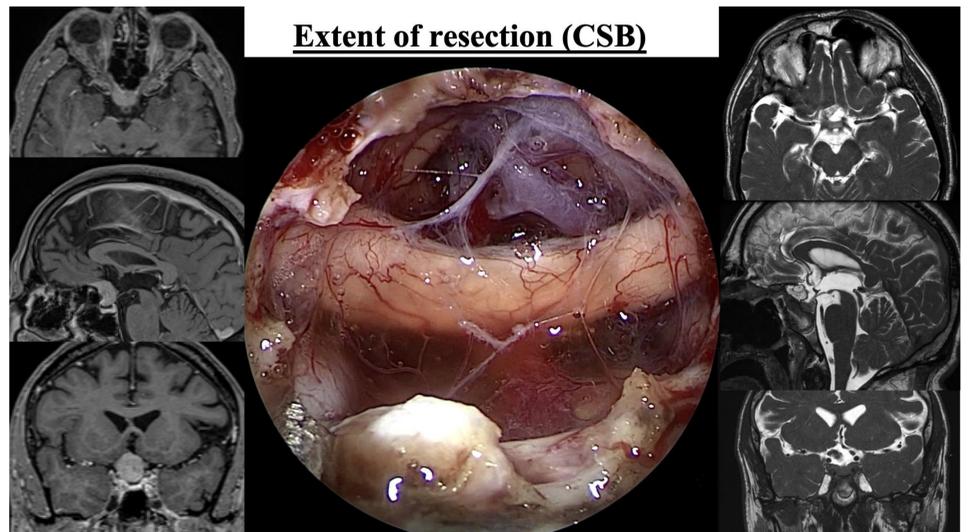
Extent of resection (n=32)

| Extent of resection | N | % |
|---------------------|----|---------|
| GTR | 16 | 50 % |
| STR | 6 | 18,75 % |
| Partial | 10 | 31,25 % |

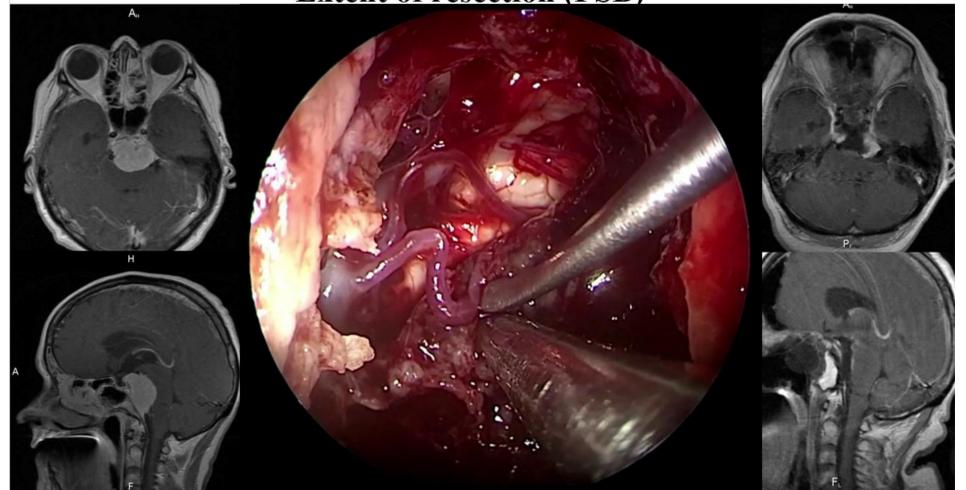
Extent of resection (ASB)



Extent of resection (CSB)



Extent of resection (PSB)



Complications (n=32)

| Complications | N | % |
|----------------------|---|---------|
| CSF-leak | 6 | 18,75 % |
| Meningitis | 2 | 6,25 % |
| Vascular injury | 1 | 3,1 % |
| Brain injury | 1 | 3,1 % |
| Extensive blood loss | 1 | 3,1 % |
| DVT | 1 | 3,1 % |

Mortality rate - 2 (6,25%)

Conclusions

- The endoscopic endonasal approach provides direct access to the tumor matrix, facilitating early devascularization and minimizing brain retraction.
- It is a valuable option for select skull base meningiomas, particularly those with extracranial extension.
- EEA presents challenges in vascular dissection, and CSF leakage remains a significant concern. The technique is associated with a steep learning curve.