# Sindou Grading System for Cavernous Sinus Meningiomas

The **Sindou Grade** is a classification system used to assess the **extent of resection** and **postoperative outcomes** in patients undergoing surgery for **cavernous sinus meningiomas (CSMs)**. It was developed by **Marc Sindou** to provide a standardized way to evaluate surgical results.

**Sindou Grades (I-VI)**

| Grade | Extent of Resection | Description |
|---|---|---|
| Grade I | Total Resection (100%) | Complete tumor removal, including dural attachment and invaded bone. |
| Grade II | Subtotal Resection (>90%) | Small residual tumor in non-critical areas. |
| Grade III | Partial Resection (50-90%) | Significant tumor removal, but residual tumor remains in critical structures. |
| Grade IV | Limited Resection (<50%) | Only a portion of the tumor is removed due to high surgical risk. |
| Grade V | Biopsy or Decompression | Minimal resection, only for symptom relief. |
| Grade VI | No Resection | Tumor is deemed inoperable. |

**Clinical Implications**

- **Higher grades (I-II)** are associated with **better prognosis** but may carry a higher risk of **cranial nerve deficits**. - **Lower grades (IV-VI)** suggest **incomplete resection**, often due to **tumor invasion into critical neurovascular structures**. - **Adjunctive treatments**, such as **radiosurgery (Gamma Knife, CyberKnife)**, are often considered for **residual or inoperable tumors** (Grade III-VI).

Example Interpretation: - A patient with **Grade I resection** has a **complete tumor removal** and a **lower risk of recurrence**. - A patient with **Grade IV resection** has a **high residual tumor burden**, requiring **adjuvant therapy**.

References: - **Sindou M. et al.** "Resection of cavernous sinus meningiomas: A grading system and evaluation of surgical results." *Neurosurgery*, 2002.