

Parasagittal meningioma classification

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In [parasagittal meningiomas](#) the overlying bone may be involved in tumor and in some cases, there may be [hyperostosis](#). In considering both the symptoms and the surgical aspects of these tumors, it is useful to divide the [parasagittal meningioma](#) into those that occur along the anterior, middle, and posterior third of the [sagittal sinus](#):

Parasagittal meningioma of the anterior third

[Parasagittal meningioma of the anterior third](#)

Parasagittal meningioma of the middle third

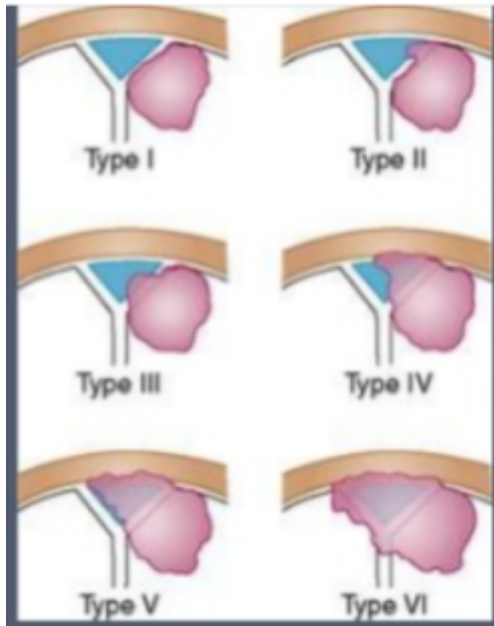
Middle third located between coronal and [lambdoid suture](#).

Parasagittal meningioma of the posterior third

[Parasagittal meningioma of the posterior third](#): located posterior to [lambdoid suture](#) to the [torcula](#).

There are two general categories of these tumors. The first involves only the lateral edge of the [sagittal sinus](#) and adjacent convexity dura and the second extensively involves the sinus, adjacent falx, and convexity dura.

Sindou and Alvernia classification



Type I, lesion attachment to the outer surface of the sinus wall

Type II, tumor fragment inside the lateral recess

Type III, invasion of the ipsilateral wall

Type IV, invasion of the lateral wall and roof

Types V and VI, complete sinus occlusion with or without one wall free, respectively.

Radical removal of [intracranial meningiomas](#) involving the major [dural sinuses](#) remains controversial. In particular, whether the fragment invading the [sinus](#) must be resected and whether the venous system must be reconstructed continue to be issues of debate.

Sindou and Alvernia studied the effects, in terms of tumor recurrence rate as well as [morbidity](#) and [mortality](#) rates, of complete lesion removal including the invaded portion of the sinus and the consequences of restoring or not restoring the venous circulation.

The study consisted of 100 consecutive patients who had undergone surgery for meningiomas originating at the [superior sagittal sinus](#) in 92, the [transverse sinus](#) in five, and the confluence of sinuses in three. A simplified classification scheme based on the degree of sinus involvement was applied:

Lesions with Type I invasion were treated by peeling the outer layer of the sinus wall. In cases of sinus

invasion Types II to VI, two strategies were used: a nonreconstructive (coagulation of the residual fragment or global resection) and a reconstructive one (suture, patch, or bypass). Gross-total tumor removal was achieved in 93% of cases, and sinus reconstruction was attempted in 45 (65%) of the 69 cases with wall and lumen invasion. The recurrence rate in the study overall was 4%, with a follow-up period from 3 to 23 years (mean 8 years). The mortality rate was 3%, all cases due to brain swelling after en bloc resection of a Type VI meningioma without venous restoration. Eight patients—seven of whom harbored a lesion in the middle third portion of the superior sagittal sinus—had permanent neurological aggravation, likely due to local venous infarction. Six of these patients had not undergone a venous repair procedure.

The relatively low recurrence rate in the present study (4%) favors attempts at complete tumor removal, including the portion invading the sinus. The subgroup of patients without venous reconstruction displayed statistically significant clinical deterioration after surgery compared with the other subgroups ($p = 0.02$). According to this result, venous flow restoration seems justified when not too risky ¹⁾.

Bonnal and Brotchi

²⁾

Table 16.3 Brotchi Classification	
Type I	Tumor is attached to the outer surface of the sinus
Type II	Tumor enters the lateral recess of the SSS
Type III	Tumor invades one wall of the SSS
Type IV	Tumor invades two walls of a still patent sinus
Type V	Tumor spreads over the midline, invades the three walls, and occludes the SSS

Modified from Hancq et al.⁵

They have been considered by large series as a single entity.

Central gyrus region meningioma

Central gyrus region meningioma.

References

¹⁾

Sindou MP, Alvernia JE. Results of attempted radical tumor removal and venous repair in 100 consecutive meningiomas involving the major dural sinuses. J Neurosurg. 2006 Oct;105(4):514-25. PubMed PMID: 17044551.

²⁾

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