Parasagittal meningioma of the posterior third

Parasagittal meningioma (PSM) of the posterior third have not been analysed individually and specific data referring to this location, especially with regard to clinical outcome, are lacking.

They constitute a subgroup that shares common treatment challenges with other PSMs but, owing to their anatomical and clinical singularities, they are considered as a subentity.

Classification

Falcine meningioma of the posterior third

Parasagittal sinus meningioma of the posterior third

They have never been specifically described to date and correlated visual outcome remains unclear.

A retrospective study describe the clinical characteristics of these tumours, their surgical management, and the improvement in visual disturbances after surgery 1).

Case series

26 consecutive patients (22 females, 4 males; mean age, 54 years) operated on for parasagittal (n = 22) and falcine (n = 4) meningioma between 1990 and 2010 were analysed retrospectively. Preoperative planning included magnetic resonance imaging (MRI) and magnetic resonance venography (MRV) or angiography. Sinus invasion was classified as normal, stenotic or occluded from the imaging findings and according to the Sindou classification from the intraoperative notes.

Visual disturbances and headache (in 21 and 14 cases, respectively) were the most commonly referred symptoms; visual field deficit was present in 19 patients. Simpson grade I was obtained in four patients, grade II in 15, grade III in three, and grade IV in four. The main limiting factor for total removal was sinus involvement. No perioperative deaths or relevant postoperative complications occurred. The mean follow-up was 107 months. Visual field deficit improved or resolved in almost half of the patients during the follow-up period. Three (12%) patients relapsed, two were treated with Gamma Knife surgery (stable at current writing) and the third died of disease progression.

Outcome after surgery compares favourably with other parasagittal meningioma localisations and overall morbidity is negligible. Visual function is crucial for clinical outcome. Since an improvement of the deficit might still be possible, every effort should be undertaken to preserve the visual cortex 2).

In 23 patients, 20 patients were absolutely able, Rankin score 0, after six months postoperative period (83.3% had excellent results) and no mortality. Four cases had Rankin score 1 - 2 (16.6%). Ten cases (43.47%) had Simpson I resection and ten cases (43.47%) had Simpson II.

The preoperative preparation and surgical planning can preserve sagittal sinus; but in some cases, this is not possible. Sagittal sinus resection, is still a factor of bad surgical outcome. In the middle and posterior third, resection of sagittal sinus is a factor of a bad outcome, due to cerebral infarction 3).
Case reports

Total removal is reported of a parasagittal meningioma that invaded the lateral wall and lateral recess of the posterior third of the superior sagittal sinus. The operation was performed by using a silicone rubber non-collapsible tube with an inflatable balloon cuff at each end for the bypass of the sinus blood, and entailed repair of the defect in the sinus wall by a saphenous vein graft. The clinical results and angiographic findings are presented.

Resection of a parasagittal meningioma invading the superior sagittal sinus (SSS) needs the reconstruction of the sinus by a patch or a venous graft depending on sinus invasion degree. METHOD:

We present here a case of a 21-year-old man who underwent radical removal of a radio-induced parasagittal meningioma totally invading the posterior third of the sinus. For its reconstruction, we used the patient's left superficial femoral vein without valves as an autograft, by realizing two end-to-end anastomoses between the sinus and the graft after an en-bloc removal of the meningioma and the invaded sinus. RESULTS:

Two years after surgery, clinical examination of the patient was strictly normal and the femoral venous graft was still patent on CT angiograms. CONCLUSION:

The superficial femoral vein without valves seems to be convenient for SSS reconstruction.

Videos

Parasagittal Meningioma (Posterior Third) Occluding the Superior Sagittal Sinus: Complete Resection and Venous Repair: 3-Dimensional Operative Video.

References:


