Giant meningioma

Giant intracranial meningioma (maximum diameter \geq 7 cm).

Conventional open surgery of large meningiomas has proven to be challenging even in experienced hands. Intense retraction and dissection around neurovascular structures increase morbidity and mortality.

With the appropriate keyhole approach as a refinement of the classic keyhole craniotomy to a smaller key"burr"hole, and with use of modern and new designed equipment, it is possible to perform complete resection of large anterior and middle fossa meningiomas with the same safety, efficiency and with less complication rates as described in the literature for large meningiomas even performed with classic keyhole craniotomies¹⁾.

Surgery carries a high risk of bleeding and is time-consuming. This historical control study tests the hypothesis that the use of radiofrequency thermocoagulation (RFT) improves outcome.

From November 2010 to October 2011, 20 giant vascularized meningiomas were surgically resected with intraoperative use of ultrasound-guided RFT prior to resection. The historical control group consisted of 25 patients in whom tumors were removed without RFT by the same surgical team. Blood loss during resection, changes in tumor consistency, time taken for the operation, and the extent of resection were compared between the two groups.

There was less blood lost during resection and the duration of the operation was shorter in RFTassisted surgery than in the historical control group (P<0.05). Apart from the effect of devascularization, the tumor consistency became soft after RFT, which could also be beneficial.

Satisfactory devascularization and tumor softening were achieved after RFT without incremental complications. RFT-assisted surgery for giant vascularized supratentorial meningiomas is easier and safer than non-RFT surgery ²⁾.

Case series

2016

All patients who were preoperatively diagnosed (between 2010 and 2014) with giant meningiomas involving the superior sagittal sinus (SSS) in Ward 10 at the neurosurgery department of Beijing Tiantan Hospital Neurosurgery Center were enrolled in this study. Patient charts, imaging findings and outcomes were examined.

The study included six male and four female patients with a mean age of 46.8 ± 10.7 years. The tumor sizes varied from 7 to 12 cm (mean = 8.8 ± 2.0 cm). All cases underwent customized craniotomies, and aggressive surgery for resection of the invaded SSS was performed. Simpson Grade I removals were achieved in all cases. No cases of perioperative mortality occurred. Three patients required cranioplasty due to a decompressive craniectomy that was performed during the primary surgery. Histological examinations revealed one malignant and nine benign meningiomas. During the follow-up period (mean=29.0±9.7 months), recurrence/progression occurred in one patient, and one patient was lost to follow-up. The recent karnofsky performance score was 78.0 ± 33.9 and was improved in seven patients and stabilized in one patient. Additionally, seven patients lived independently.

The rigorous preservation of cortical veins, draining veins and eloquent areas should be implemented during the resection of large tumors that obstruct the SSS. Suitable individualized approaches associated with full exposure and low cerebral perfusion pressure levels after surgery are critical for favorable results, and the reconstruction of the SSS may not be necessary ³.

1)

Igressa A, Pechlivanis I, Weber F, Mahvash M, Ayyad A, Boutarbouch M, Charalampaki P. Endoscopeassisted keyhole surgery via an eyebrow incision for removal of large meningiomas of the anterior and middle cranial fossa. Clin Neurol Neurosurg. 2014 Dec 6;129C:27-33. doi: 10.1016/j.clineuro.2014.11.024. [Epub ahead of print] PubMed PMID: 25528371.

Yi X, Wei L, Liu Y, Long Q, Liu W, Fei Z, Liu Y, Yan L, He G, Zhang M, Zhou X. Efficacy of radio frequency thermocoagulation in surgery for giant supratentorial meningiomas: A historical control study. Clin Neurol Neurosurg. 2014 Dec 27;130C:26-32. doi: 10.1016/j.clineuro.2014.12.008. [Epub ahead of print] PubMed PMID: 25576882.

Wang X, Wu R, Zhang P, Zhang C, Song G, Gao Z. Superior sagittal sinus obstruction by giant meningiomas: is total removal feasible? World Neurosurg. 2016 Jul 5. pii: S1878-8750(16)30501-0. doi: 10.1016/j.wneu.2016.06.113. [Epub ahead of print] PubMed PMID: 27392897.

From: https://neurosurgerywiki.com/wiki/ - **Neurosurgery Wiki**

Permanent link: https://neurosurgerywiki.com/wiki/doku.php?id=giant_meningioma

Last update: 2024/06/07 03:00

