Supraorbital minicraniotomy

The authors present the preliminary results of application of supraorbital keyhole craniotomy for anterior circle of willis aneurysms in 27 patients. Most of the patients had unruptured aneurysms (18 patients). Nine patients had SAH, and 4 of them were operated on in the acute period. The patients' condition was assessed as a grade 1-2 (Hunt-Hess scale) and grade 1-3 (Fisher scale). There were no intraoperative aneurysm ruptures, other serious complications, and deaths. Postoperative complications were assessed at 2 weeks and 6 months. The postoperative cosmetic outcome was assessed by patients as excellent [1].

A retrospective study of 40 patients (12 males, 28 females) who underwent surgery for large anterior cranial fossa meningiomas (diameter >5cm) extending to the middle fossa in four different neurosurgical centers within 6 years. Depending on the localization of the tumor, the skin incision was between 2.5 and 3cm long and was made without shaving the patient's eyebrow hair. Subsequently, a keyhole craniotomy was performed of approximately 0.8×1.2-1.4cm in diameter. Preoperative and postoperative clinical and radiological data were analyzed and discussed.

Headache and psycho-organic syndrome were the most common presenting symptom in all patients. Presenting symptoms were associated with psychological changes in 23 cases, visual impairment in 19 patients, and anosmia in 17 patients. In overall, 36 of 40 patients (90%) showed a good outcome and returned at long-term follow-up to their previous occupations. The elderly patients returned to their daily routine.

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 craniotomies [2].

1)
Dzhindzhikhadze RS, Dreval' ON, Lazarev VA, Kambiev RL. [Supraorbital keyhole craniotomy in surgery of anterior circle of willis aneurysms]. Zh Vopr Neirokhir Im N N Burdenko. 2016;80(5):78-84. Russian. PubMed PMID: 27801402.
2)
Igressa A, Pechlivanis I, Weber F, Mahvash M, Ayyad A, Boutarbouch M, Charalampaki P. Endoscope-assisted 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.