Cerebrospinal fluid leak after microsurgical surgery in vestibular schwannomas via retrosigmoidal craniotomy.

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Abstract:

Objective: Cerebrospinal fluid (CSF) leak is still a common complication in surgery of vestibular schwannoma, increasing morbidity and prolonging hospital stay. Our single center study was performed to determine the incidences of CSF leaks after microsurgical removal of vestibular schwannoma via a retrosigmoidal approach with two different surgical closure techniques. Methods: Between January 2003 and December 2009 in 81 patients, microsurgical tumor resection using a suboccipital, retrosigmoidal approach was performed with an interdisciplinary ENT and neurosurgical management was performed. In 41 cases, the dural closure was done using a sandwich technique: subdural closure with TissuFleece respectively Spongostan, and after that dural suture and epidural Tachosil were fixed on. In 40 cases, the dura was sealed epidurally with Tachosil after suture. In 65 cases, the posterior wall of the petrous bone was drilled. The closure was performed using muscle and FibrinGlue. All patients had a minimal follow-up of 1 year. Results: Seven patients (8.6%) developed a CSF fistula. Three patients (3.7%) underwent surgical procedure because of persisting CSF fistula while in four cases (4.9%) spontaneous closure under lumbar drain was observed. Comparing the different techniques of dural sealing, we found in 41 patients with sandwich technique three CSF leaks (7.3%) while there were four CSF leaks (10%) in 40 patients with a single epidurally sealed dural closure (P50.69). No rhinorrhea or otorhinorrhea was observed. No intracranial infection or meningitis in case of CSF leak occurred. Conclusion: Suture and occlusion of the dura is an important step to prevent CSF leak and postoperative infection. By comparing sandwich technique and single-layer dural sealing, no significant difference could be

shown.