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Spinal Meningioma surgery: A single centre experience in the change of time

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Objective: Spinal meningiomas are well known, most frequently intradural, extramedullary tumors, representing 25% of all intradural spinal tumors. The purpose of this study was to compare the outcome of surgically treated patients suffering from spinal meningioma in two different time intervals with special emphasis on postoperative functional outcome.

Methodology: Patients with spinal meningiomas who were admitted in our department between 1990 and 2020 were enrolled in the study. The cohort was divided into two groups (historic cohort [HC] from 1990 to 2010 and current cohort [CC] from 2010 to 2020). Patients' clinical data, surgical and radiological reports were retrospectively analyzed up to 5 years. Preoperative and postoperative neurological function was assessed using the modified McCormick Scale (mMCS). The Charlson Comorbidity Index (CCI) was used to evaluate the effect of comorbidities on the preoperative status and postoperative outcome.

Findings: In total, 300 patients were included. A younger age of the surgically treated patients was observed in the CC. Indeed, there were twice as many patients from the CC who were younger than 50 years of age than patients from the HC having the same age. The most common tumor location was the thoracic spine. A symptom duration until surgery <12 months was statistically significantly associated with an earlier improvement in the mMCS (p=0.045). In the CC, the symptom duration until surgery was shorter and patients' neurological function at first and last follow-ups was statistically significantly better than in the HC (p<0.001, p<0.001; respectively).

Conclusion & Significance: Our longstanding experience with spinal meningioma patients suggests that the impact of surgical management and postoperative rehabilitation on patients' long-term neurological outcome had reached important milestones during the last decades. Indeed, thanks to an earlier diagnostic, spinal meningioma patients could be surgically treated earlier, which significantly prompted patients' postoperative neurological recovery.

Recent Publications

- 1. Baro V, Moiraghi A, Carlucci V, Paun L, et al: Spinal Meningiomas: Influence of Cord Compression and Radiological Features on Preoperative Functional Status and Outcome. Cancers (Basel) 13, 2021. DOI: 10.3390/cancers13164183
- Gottfried ON, Gluf W, Quinones-Hinojosa A, Kan P, Schmidt MH: Spinal meningiomas: surgical management and outcome. Neurosurg Focus 14:e2, 2003. DOI: 10.3171/foc.2003.14.6.2
- Manzano G, Green BA, Vanni S, Levi AD: Contemporary management of adult intramedullary spinal tumors-pathology and neurological outcomes related to surgical resection. Spinal Cord 46:540-546, 2008. DOI: 10.1038/sc.2008.51

Biography

Hanah Hadice Gull is a Resident Physician in the Department of Neurosurgery and Spine Surgery at University Hospital Essen, Germany. She has also been working as a medical faculty member at the Heinrich Heine University, Düsseldorf, Germany. Her research interest is to rule out spinal tumours through early diagnosis, surgical management, and physical rehabilitation. At this young age, she published around three research papers, two of which focused on cerebral cavernous malformations. Hanah Hadice Gull is skilled and has expertise in Chordoma, PDT, Cell Culture, 5-ALA, Fluorescence Imaging, and Ciprofloxacin.

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