

Review of: "Clinical features and prognostic factors in spinal meningioma surgery from a multicenter study"

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With their recent study, "Clinical features and prognostics factors in spinal meningioma surgery from a multicenter study", Kobayashi and colleagues solidify our understanding of the role of surgery in the management of patients with intraspinal meningioma. They identify 116 patients who underwent surgery at centers throughout Japan from 1998 and 2018, with a strong female predominance (4:1). The lesions were located in the cervical spine in 22 cases, thoracic in 90, and lumbar in 4; the axial location was lateral in 64, ventral in 34, and dorsal in 10 cases. All patients underwent clinical examination and magnetic resonance imaging before and following surgery. The most common presenting symptoms were gait disturbance (52%), pain (33%), sensory deficit (29%) and weakness (22%).

All patients underwent surgery using the conventional posterior midline approach and laminectomy beyond the rostral and caudal ends of the tumor. For Simpson grade I resection, the tumor origin (dura) was resected after tumor removal and the defect reconstructed with a dural substitute. Lumbar drainage was used occasionally to prevent CSF leak and facilitate healing in the postoperative period. Nearly all patients in the study (108; 93%) benefited from a gross total resection, with 29 patients (25%) having a Simpson Grade 1 resection and Simpson Grade 2 resection in 79 patients (68%). As we have found in our own experience, the authors report that most of these lesions were Grade 1 tumours (97%), with a small outlier group (3%) harbouring an atypical lesion.

The authors find that surgery is a relatively safe endeavour. In their cohort, neurological function had improved in 73 patients (63%) at follow-up, was stable in 34 (29%), and had worsened in 9 (8%). Three patients suffered a CSF leak requiring reoperation and repair for superimposed wound infection. Importantly, surgery was also effective in achieving local disease control. Eight patients (7%) required reoperation for tumour recurrence or growth. There were no cases of tumour recurrence in patients who had a Simpson Grade 1 resection, and only two in patients who have a Simpson Grade 2 resection (2/79, 2.5%). Incomplete resection, male sex, and presence of a dural tail on preoperative imaging were risk factors for reoperation.

Based on their data, the authors conclude that total resection is safe for most patients with spinal

meningioma, and results in excellent disease control. They suggest that Simpson Grade 1 resection should be a goal for most if not all patients with a dorsally located meningioma. Future work will be needed to better define the role of adjuvant radiation therapy in patients with incomplete tumour resection and the appropriate frequency and length of tumour surveillance for recurrence.