

PREDICTORS OF PATIENT OUTCOME AFTER SPINAL EPENDYMOMA RESECTION

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Aim: Spinal ependymomas are among the most common intramedullary neoplasms in both adults and children. The aim of this study is to determine the predictors of patient outcome after spinal ependymoma resection.

Methods: A retrospective study encompassing all the patients that underwent spinal ependymoma resection in our institution in a 10 year period was conducted. The diagnosis was confirmed via MR of the spine. All the patients underwent a surgical procedure encompassing laminectomy, durotomy, myelotomy, exposure of the tumor and gross tumor resection or tumor mass reduction. Histopathological analysis of all tumors was performed. Patient general and neurological examination were performed early after the surgery and in a 3-month follow-up.

Results: A total of 51 intradural and intramedullar ependymoma resection surgeries were performed. Most of patients were male (57%) and the average patient age was 41 years, which is in accordance with previous study results. 66.7% patients presented with a tumor affecting one vertebrae level, while 23.5% presented with tumors expanding over two or more spinal regions. Gross tumor resection was achieved in 80% of cases. 25% of procedures were performed on a recurring ependymomas. Most of tumors (55%) were classified as G2 histological grade, while 8% were anaplastic ependymomas. In 78% of cases early postoperative patient status was either better or equivalent to the preoperative one, while in a 3-month follow-up, up to 60% of cases showed a significant improvement over the preoperative status. Different clinical parameters, tumor and procedure characteristics were not proven to be predictors of postsurgical patient outcome. The spinal region affected by the tumor was found to be a predictor of early postoperative outcome ($p=0,346$, $p=0,033$), with lumbar spine being associated with the best outcomes. As expected, the scope of the surgery and whether gross tumor resection or tumor mass reduction was performed, were the only significant predictors of tumor recurrence ($p=0,391$, $p=0,005$).

Conclusion: Spinal ependymoma resection is an efficient procedure that improves patient outcomes. Spinal region affected by the tumor is likely to be the most important predictor of outcome, while the procedure scope seems to be the most important predictor of tumor recurrence.