Spinal Cord. 2011 Jun 7. [Epub ahead of print]

Myxopapillary ependymoma: correlation of clinical and imaging features with surgical resectability in a series with long-term follow-up.

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Abstract

Study design:

Retrospective case series.Objectives:The objective of this study is to identify imaging and intraoperative characteristics that may predict surgical resection for myxopapillary ependymoma (MPE). The diffuse involvement in the conus-filum region makes complete resection challenging. The preoperative characteristics that may estimate the extent of resection has not been reported.

Setting: Toronto, Canada.

Methods: All MPE cases between 1972 and 2005 at a single institution were identified and reexamined by a neuropathologist. Neurological outcomes (Frankel scale), clinical features, operative findings, pre and postoperative imaging results were reviewed.

Results: A total of 18 operations were performed on 15 MPE patients (8 females/7 males; age range: 18-71 years). Median postoperative follow-up was 56 months. Three patients (17%) developed tumor regrowth requiring reoperations. Preoperative magnetic resonance imaging (MRI; in 14/18 procedures) determined that tumors involved the conus in 70% of cases, which was significantly associated with intraoperative findings (P=0.02). Complete microsurgical resection was accomplished in 4 out of 7 cases where conus was not involved, but in only 1 out of 10 cases with conus involvement (P=0.056). The degree of conus involvement in one case was unclear. None of patients with total surgical resection developed recurrence. All patients survived at long-term follow-up.

Conclusion: Our series is the first to correlate MPE involvement to conus medullaris on preoperative MRI with intraoperative findings, and examine its significance on surgical resectability. This information could guide clinicians in preoperative planning and advising patients on treatment options and potential risks/benefits. MRI is very sensitive (100%) and moderately specific (67%) in detecting direct anatomical contact between conus and MPE tumors.