Predicting Determinants of Spine Metastases at Initial Presentation of Pediatric Brain Tumor Patients

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Disclosures

• None
Introduction

• Pediatric patients with newly diagnosed brain tumors are screened with full neuraxis MRI at our institution in order to detect disseminated disease at initial presentation.

• Given the rarity of disseminated disease at the time of presentation for brain tumor patients, we performed a retrospective review of patients with brain tumors at our institution to identify clinical and radiographic predictors of spinal metastasis (SM) at the time of presentation.
Methods

• We performed a single-institution chart review of pediatric brain tumor patients who presented between 2004 and 2018.

• We extracted information regarding
  • patient demographics,
  • radiological attributes, and
  • histology.

• MV analysis was performed to identify factors associated with the presence of SMs at initial presentation.
Results

• Of 175 total patients, 11 had SMs at initial presentation.
• 10 of these patients had WHO grade IV tumors, including
  • 8 medulloblastomas,
  • 1 atypical teratoid rhabdoid tumor,
  • 1 diffuse intrinsic pontine glioma,
  • and 1 glioneuronal tumor.
• Median age at presentation was 7 years (range: 0-21).
• Most common symptoms at presentation were headache (n=89) and nausea/vomiting (n=69).
Leptomeningeal enhancement and 4th ventricular tumor location were most strongly associated with SM at presentation.
Conclusion

• For the first time in our knowledge, we present a retrospective review of newly diagnosed pediatric brain tumor patients in order to identify clinical and radiographic factors associated with the presence of SMs at the time of initial presentation.

• Tumors located in the fourth ventricle, and the presence of intracranial leptomeningeal disease were most frequently associated with disseminated disease at presentation.

• These findings suggest that heightened suspicion for SMs should be prospectively applied to certain subsets of pediatric brain tumor patients at the time of presentation.