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Determining the Role of Surgery in Diagnosis and Treatment of Primary CNS Lymphoma

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Determining the Role of Surgery in Diagnosis and Treatment of Primary CNS Lymphoma

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Introduction: Primary central nervous system lymphoma (PCNSL) is a rare entity typically treated with a combination of chemotherapy and radiation. The role of surgery is controversial, and biopsy may be non-definitive or injurious. We review our series of stereotactic and excisional biopsy as well as surgical debulking of PCNSL to quantify overall risk and benefits.

Methods: Patients with biopsy-confirmed intracranial PCNSL were identified from a large single-center academic institution between 2012-2018. Preoperative factors and perioperative outcomes were retrospectively reviewed.

Results: A total of 61 cases of PCNSL were identified. Most patients presented with confusion (23.0%), weakness/paralysis (19.7%), and gait disturbance (18.0%). 1.6% were incidentally identified. HIV status was positive in 8.2% of cases. CSF cytology was positive for malignancy in 33.3% of applicable cases. Of all procedures, 44.3% were needle biopsy, 27.9% were open excisional biopsies, and 27.9% were surgical debulking procedures. Prior biopsy had been performed in 9.8%, of which 83.3% (5/6) were positive for PCNSL. Intraoperative frozen pathology failed to illicit a definitive diagnosis in 39.3% of cases despite adequate sampling. Stereotactic biopsies did not demonstrate an increased risk of non-diagnostic frozen pathology compared to open excisional biopsy. Intraoperative complications, 30-day mortality, and long-term survival was not associated with open vs. stereotactic biopsy.

Discussion: Biopsy of PCNSL carries a moderate surgical risk that should not be discounted, particularly in the setting of previously diagnosed PCNSL or with evidence of malignancy in CSF cytology. Early initiation of chemotherapy continues to be the mainstay of long-term response and control.