Brain Lesions in Patients with a History of Hematologic Malignancy: How Often is it a Second Pathology?

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Introduction

Patients with a history of hematologic malignancy can develop new or recurrent brain lesions. When CSF or ocular studies cannot determine whether the lesion represents recurrent lymphoma or a second pathology, brain biopsy is often utilized. No study has examined how frequently a recurrent or second pathology is encountered.

Methods

Electronic medical records were searched from 2000-2016 for patients with a prior diagnosis of systemic or CNS hematologic malignancy that developed a new or recurrent CNS lesion and underwent cranial biopsy.

Results

Fifty patients were found; forty-nine biopsies were diagnostic. Regarding patient history, forty-eight had systemic and 1 primary CNS lymphoma. Forty-four(90%) patients had a non-Hodgkin's(NHL) lymphoma sub-type; the majority were diffuse large B-cell lymphoma[DLBCL,n=34,(77%)]. Other hematologic malignancies included Hodgkin's lymphoma(HL,n=3), acute promyleocytic leukemia(APL,n=1), and low-grade B-cell lymphoproliferative disorder(LG-BCLD,n=1). Thirty-four patients(69%) had a brain biopsy consistent with their prior lymphoma; all had a history of DLBCL, except one with a history of small lymphocytic lymphoma. Eleven patients(22%) had a biopsy different than their prior lymphoma. All patients had non-DLBCL, except for one patient. Four (8%) patients had transition from a non-DLBCL type to DLBCL (Figure 1).

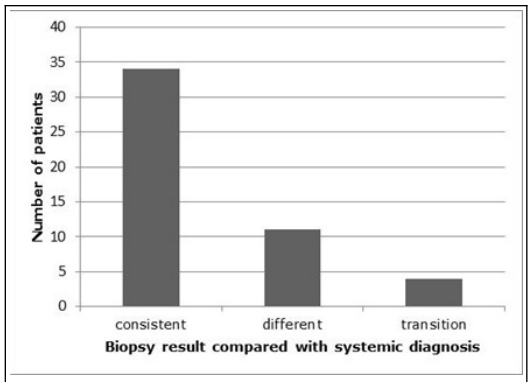

Figure 1. Number of patients that had a brain biopsy consistent with their prior lymphoma, different from their prior lymphoma, and transition from a non-DLBCL type to DLBCL.

Comparing patients with a history of DLBCL vs non-DLBCL, there was a statistically significant difference for a brain biopsy showing a second or transitional pathology in patients with non-DLBCL (Table 1, p=0.001).

Table 1

	Consistent	Different
DLBCL	33 (67%)	1 (2%)
Non-DLBCL	1 (2%)	14 (28%)

Comparison of patients with a history of DLBCL versus non-DLBCL and brain pathology consistent or different from systemic disease.

Conclusions

In our cohort of patients with a history of hematologic malignancy, we found the rate of a different or transitional brain pathology was 31%. All patients, except one, with a second pathology had a history of non-DLBCL types. All patients, except one, with a history of DLBCL had a brain lesion consistent with their lymphoma history. Patients with a history of DLBCL were likely to have a brain lesion consistent with their prior history.

Learning Objectives

Describe the frequency of which a recurrent or second brain pathology is encountered in patients with a history of hematologic malignancy.