Local recurrence of primary central nervous system lymphoma due to tumor seeding

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A 48-year old male, initially presented to the local hospital with generalized tonic-clonic seizure episodes for almost eight months. He had no previous head trauma, family history or chronic illness. There was no focal neurological deficit. Computed tomography scan of brain revealed small left parietal lobe lesions. Repeated brain imaging after two months showed progressive brain lesions. He had brain MRI which showed 3.1×4.3 soft tissue mass in left parietal lobe with low signal intensity on T1, high signal intensity on T2 and was hyper intense on FLAIR . There was no evidence of acute intra cranial bleeding. The lesion showed homogenous enhancement with contrast. Whole body Positron Emission Tomography-Computerized Tomographic fusion (PET-CT) scan did not show any significant uptake. He underwent left parieto-occipital craniotomy with complete removal of gross tumor. The pathology

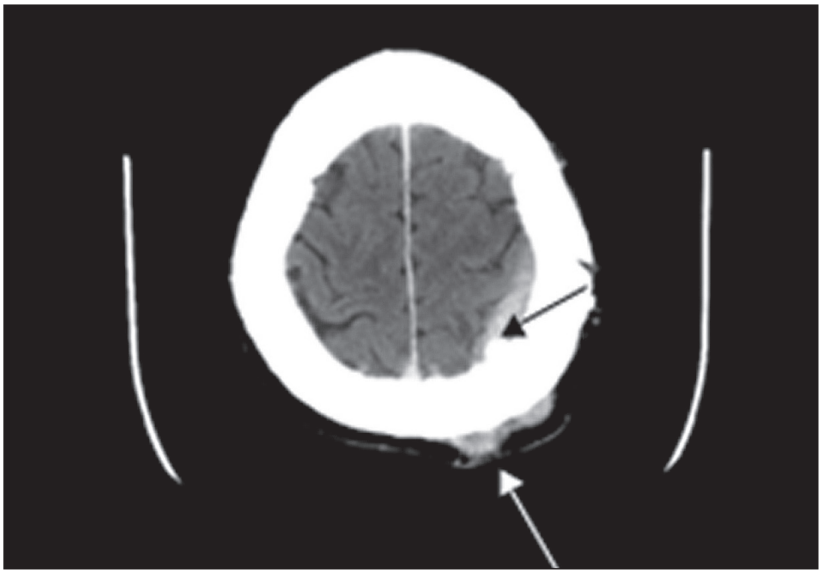

Figure 1. Coronal section of brain CT scan with contrast revealed multiple intracranial lesions and over the scalp at the region of left craniotomy.

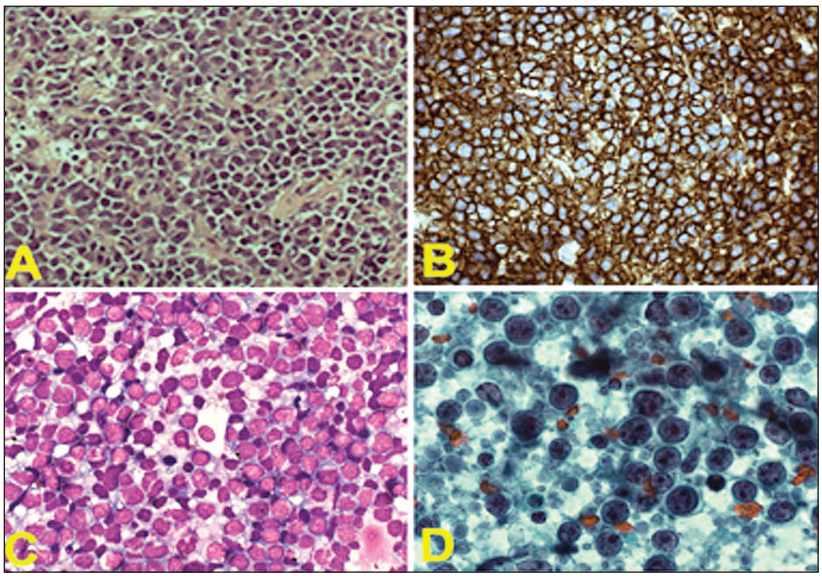

Figure 2. A) Hematoxylin and eosin stain section of left parieto-occipital tumor showing diffuse infiltration by large atypical lymphoma cells within the brain parenchyma; B) CD20 immunohistochemical stain revealing strong positive membranous staining in the neoplastic lymphoma cells; C) Wright–Giemsa stain of fine needle aspirate (FNA) cytology of skin nodule in the scalp that developed post–two cycles of chemotherapy showing large lymphoid cells with highly atypical nuclei and moderately abundant cytoplasm; D) Papanicolaou stain of FNA specimen showing markedly atypical/malignant large lymphoma cells with hyperchromatic nuclei.

showed large cell lymphoma and immuno histochemistry revealed positive CD20 (diffuse and strong), CD79A, bcl-2, bcl-6, CD5, CD43, and MUM1 while CD3, CD10, CD23, and cyclin D1 was negative. Fluorescent in situ hybridization did not reveal any chromosomal abnormality, specifically no c-myc abnormality was found. Whole brain PET-scan post craniotomy did not show any residual disease.The final diagnosis was primary CNS of diffuse large B-cell type. He was started on chemotherapy consisting of high dose Methotrexate and cytosine arabinoside. After receiving two cycles of chemotherapy, he presented with newly developed skin nodules around the craniotomy scar associated with pruritis and erythema. CT scan of the brain with contrast showed large left parietal glial and intracranial dural enhancing lesions at the region of prior surgical resection consistent with progression. In addition, there were soft tissue nodules in scalp corresponding to the original craniotomy site (**Figure 1**). FNA from skin nodules was done and revealed malignant large B-cell lymphoma (**Figure 2**). Cerebrospinal fluid analysis did not reveal leptomeningeal involvement. The patient was then started on whole brain radiotherapy.

Implantation metastasis is uncommon complication. It was reported with different types of CNS solid tumor.[1-8] However we only found one prior case with tumor seeding by a lymphoma.[9] Here we are reporting another case of primary CNS lymphoma with such complication.

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