Intracranial and Skull Base Recurrence of Hepatocellular Carcinoma in a Liver Transplant Recipient: A Complex Neurological Case

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Introduction.

Hepatocellular carcinoma (HCC) recurrence after liver transplantation is a rare but serious complication, often presenting diagnostic and therapeutic challenges. Central nervous system involvement is extremely rare and may mimic infectious or lymphoproliferative diseases, especially in immunosuppressed patients.

Discussion.

This case highlights the diagnostic complexity of neurological symptoms in immunosuppressed liver transplant recipients, emphasizing the need to consider HCC recurrence in differential diagnosis with infectious or lymphoproliferative diseases.

Conclusion.

Multidisciplinary evaluation and advanced imaging, combined with histological confirmation, are crucial for accurate diagnosis and tailored treatment. Early recognition and integrated oncological and neurological management can improve clinical outcomes in this rare presentation of metastatic HCC.

Bibliography.

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Case report.

A 19-year-old male, transplanted one year ago for congenital **HBV-related cirrhosis** complicated by **Hepatocellular Carcinoma** (HCC), presented to the Emergency Department with left-sided headache, nausea, vomiting, and fever. Acute brain CT revealed a left temporal hypodense lesion with calcifications causing bone lysis and extension to the sphenoid sinus. The following **brain MRI** with contrast showed an extra-axial mass centered at the left greater sphenoid wing and pterygoid body, with intracranial compression of the temporal pole. The patient was therefore admitted to the Neurology Department. Given his immunosuppression and imaging features, an infectious etiology was initially suspected: **lumbar puncture** and microbiological studies were negative. Empiric antifungal and antibiotic therapies were started but later modified due to nephrotoxicity. Considering possible post-transplant lymphoproliferative disease (PTLD) or HCC recurrence, immunosuppressive therapy was tapered, and steroids increased. **Alpha-fetoprotein** (AFP) levels rose significantly. **Total body CT and PET-CT scans** showed multiple nodules in the abdomen and high metabolic activity in the sphenoid lesion and adjacent structures. **Endoscopic transnasal biopsy** of the sphenoid mass revealed malignant epithelial tumor cells consistent with metastatic HCC. The patient underwent five sessions of radiotherapy and started systemic treatment with Lenvatinib, followed by Sorafenib, achieving disease stabilization.

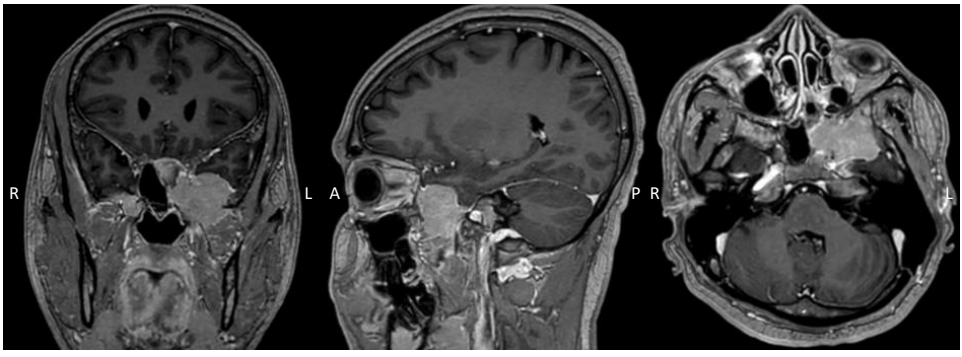

Figure 1. Brain MRI T1-weighted with gadolinium enhancement shows an extra-axial mass centered at the left greater sphenoid wing and pterygoid body, causing intracranial compression of the left temporal pole.