

# Nasopharyngeal Hepatocellular Carcinoma After Orthotopic Liver Transplant

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## INTRODUCTION/BACKGROUND

- Hepatocellular carcinoma (HCC) is the fifth-most common cancer in the world and the third cause of cancer-related mortality as estimated by the World Health Organization.
- It is the most prevalent type of liver cancer, accounting for approximately 75% of cases with incidence rates that have been rapidly rising in the United States over the past three decades.
- The disease generally manifests in the 6<sup>th</sup> and 7<sup>th</sup> decades of life, and usually at an advanced stage and has a poor prognosis with minimal chance of cure.
- Treatment options include locoregional therapy, chemotherapy, surgery, and transplant if within the Milan criteria.
- Extrahepatic metastases of HCC occur in 30%-50% of patients.
- The most common sites of extrahepatic metastases of HCC are the lungs, lymph nodes, peritoneum, adrenal glands, and bones.
- Rare sites of metastatic disease include the rectum, spleen, diaphragm, esophagus, pancreas, seminal vesicle, and bladder.
- Here we present a rare case of nasopharyngeal metastases of HCC after liver transplant.

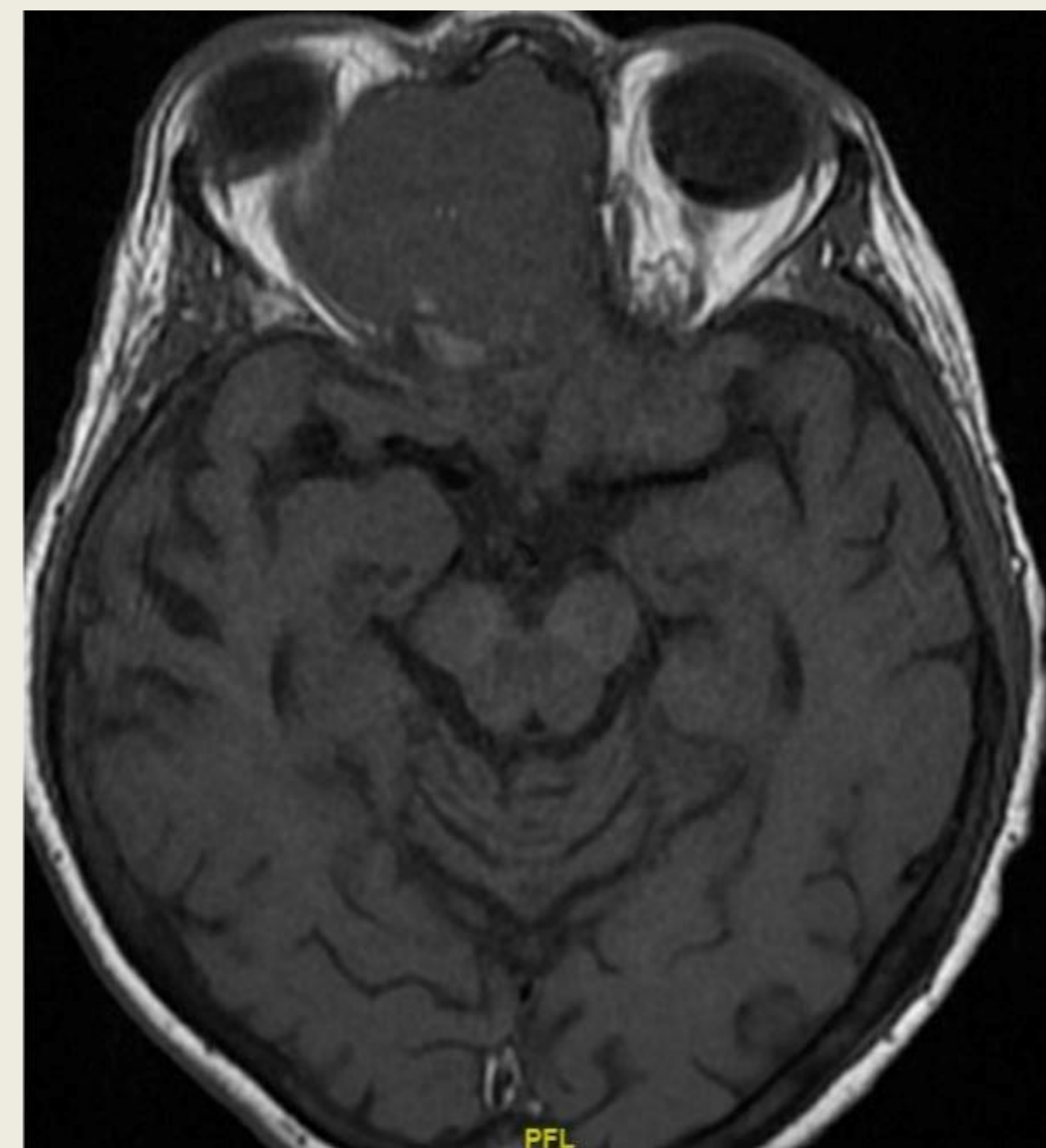
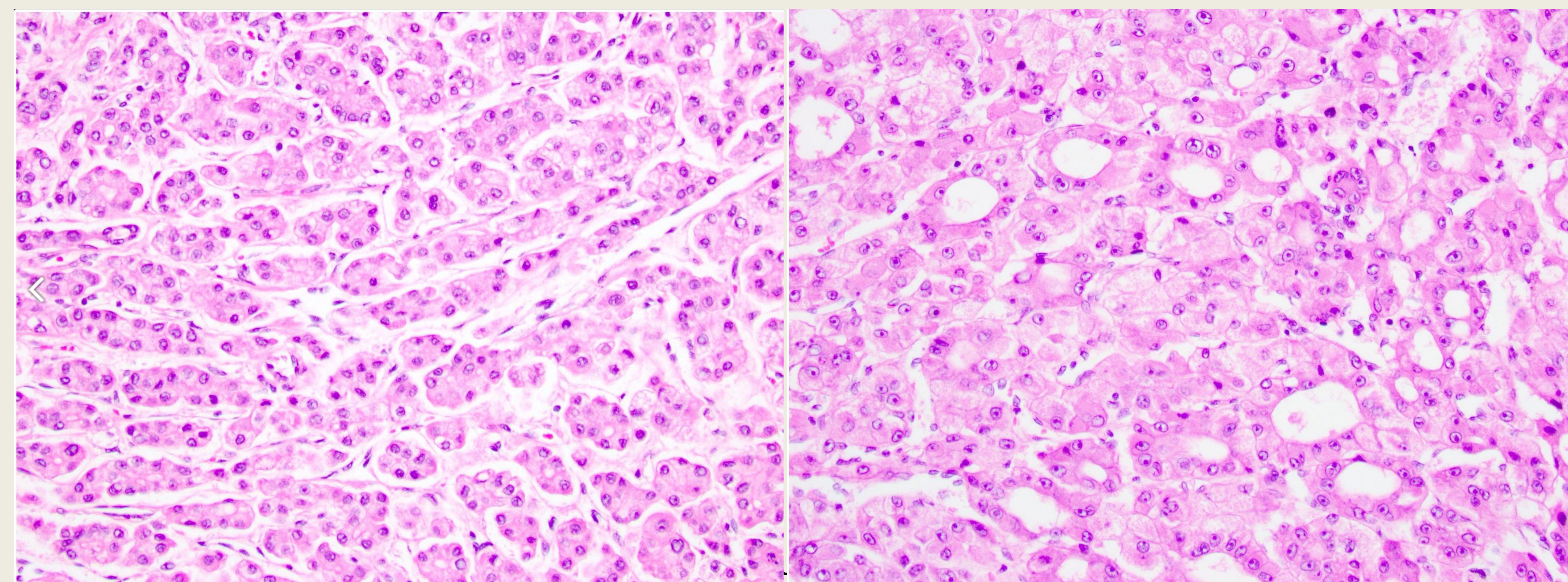


Figure 1. T1 weighted MRI orbit without contrast showing space occupying lesion extending through the right ethmoid sinuses with intracranial extension

## CASE DESCRIPTION

- A 76-year-old female with alcoholic cirrhosis complicated by HCC with known metastases to the lungs and kidney status post locoregional therapy and orthotopic liver transplant with an HBV core antibody positive donor liver (within Milan criteria), non-Hodgkin's lymphoma status post XRT in remission, and hypertension presented to the ER with one month of right eye swelling and rhinorrhea without fever.
- MRI orbit obtained outpatient showed a right orbital mass extending intracranially (Figure 1).
- Vital signs were significant for chronic asymptomatic bradycardia (40s-50s) with hypertension to 190s/60s. Physical examination was remarkable for severe right orbital swelling but no scleral icterus, injection, or drainage. Pupils were equal round and reactive to light and accommodation with intact extraocular movements. She was fully alert and oriented without any focal neurological deficits. All review of systems were otherwise negative.
- Initial liver chemistries showed aspartate aminotransferase 9 U/L, alanine aminotransferase 3 U/L, total bilirubin 0.4 mg/dL (direct 0.1). Serum AFP one month prior to presentation was 24.5. The INR was 1.2. CBC showed WBC 3.7 K/UL, hemoglobin 8.2 g/dL, and platelet count of 186 K/UL. Serum electrolytes were normal except for hyperkalemia to 5.5. Renal function showed BUN of 72 and creatinine of 4.61, at the patient's baseline.
- Non-contrast CT of the head and sinuses showed a large expansile infiltration centered at the right ethmoid and right upper nasal cavity extending to the superior medial aspect of the right orbit, into the frontal sinus and anterior cranial fossa with associated mass effect upon the frontal lobes with vasogenic edema.
- Nasopharyngeal biopsies obtained from the right middle meatus revealed poor differentiated adenocarcinoma compatible with metastatic HCC.
- Immunohistochemical staining was positive for heppar-1 compatible with metastatic HCC. The markers TTF1, CK5/6, synaptophysin, GFAP, chromogranin, glypican 3, CK7, CK20, s100, melan-a, HMB45, arginase, and AFP were negative.
- The patient underwent bifrontal craniotomy for resection of the large anterior skull base lesion by neurosurgery.
- Hospital course was complicated in several ways including electrolyte derangements, multifactorial encephalopathy, and sepsis necessitating ICU transfer. Palliative was consulted for goals of care discussion with the family, who ultimately agreed with comfort measures and discharge to hospice.



## DISCUSSION

- Extrahepatic metastases of HCC occur in 30%-50% of patients.
- The histopathological diagnosis can be made by demonstrating acidophilic cells in trabecular and pseudoacinar arrangements (Figure 2).
- Immunohistochemical studies provide additional value in diagnosis, with HepPar1, glypican 3, and AFP as the most specific markers of extrahepatic metastases of HCC.
- HCC is an aggressive malignancy, and spread can occur via either direct extension, hematogenous spread, or via lymphatic invasion.
- The most common sites of metastases and their associated frequencies include the lungs (55%), lymph nodes (53%), bone (28%), adrenal glands (11%), peritoneum and/or omentum (11%), and the brain (2%).
- Rare sites of metastatic disease include the rectum, spleen, diaphragm, esophagus, pancreas, seminal vesicle, and bladder.
- HCC metastasizing to the nasopharynx is exceedingly rare. The first case report documenting an isolated nasopharyngeal metastasis at presentation from a liver primary was described by Kattepur et al in 2014.
- Since, there have only been two other documented reports of metastases to this site, including one in a patient after liver transplant.
- In our case, the patient reported swelling behind the right eye as the initial presentation of a metastatic tumor from a primary liver malignancy.
- In patients with a history of HCC, clinicians should maintain a broad differential with clinical suspicion of uncommon presentations of extrahepatic metastases, even after liver transplant.

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