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Research Article

A rare clinic in hepatocellular cancer: Metastasis of the nasopharynx

Short Title: Atypical metastatic region of hepatocelular cancer

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ABSTRACT

Hepatocellular cancer (HCC) is the most common primary malignant tumor of the liver. The organs that HCC most commonly metastasizes to are the lungs, intra-abdominal lymph nodes, bones, and adrenal glands. Brain metastases have been reported rarely. Herein, we report a 54-year-old female patient who was diagnosed with cryptogenic cirrhosis by liver biopsy in 2010. Solid lesions were detected on radiological examination during follow-up in 2019. The patient's complaints of severe headache, nausea, and vomiting continued during the follow-up, and imaging was performed. A contrast-enhancing lesion, 2 cm in size, was reported in the left half of the clivus on T1 examination after intravenous contrast administration. A biopsy was performed on the mass extending from the clivus to the nasopharynx. The biopsy concluded that it was an HCC metastasis. Intracranial metastases of HCC have been reported very rarely compared to other extrahepatic sites. HCC

cases with intracranial metastases have a poor prognosis. Intracranial metastases should be considered in the differential diagnosis in patients presenting with central nervous system findings.
Keywords: Brain metastasis; hepatocellular cancer; malignancy.

INTRODUCTION

Hepatocellular cancer (HCC) is the most common primary malignant tumor of the liver.[1] Although it is usually diagnosed at a stage limited to the liver, it can also spread extrahepatically. Extrahepatic involvement has become more frequently observed due to improvements in diagnosis and treatment, as well as increased life expectancy. The organs to which HCC most commonly metastasizes are the lungs, intra-abdominal lymph nodes, bones, and adrenal glands.[2] Brain metastases have been reported rarely and are associated with poor prognosis. Here, we present a case of HCC with intracranial metastases presenting with a headache.

CASE REPORT

A 54-year-old female patient was diagnosed with cryptogenic cirrhosis by liver biopsy in 2010. When solid lesions were detected during an ultrasonographic examination performed for screening purposes in 2019, two heterogeneous solid lesions of 8 cm in liver segment 6 and 3 cm in segment 4 were observed in the abdominal magnetic resonance imaging (MRI) performed. The lesions were evaluated as compatible with HCC, and an AFP level of 174 ng/ml was detected. Transarterial chemoembolization (TACE) was performed in April 2020. In June 2020, a 13x8x11 cm T2-weighted lesion in the right lobe of the liver, heterogeneous, containing necrotic areas that did not show contrast enhancement after intravenous contrast agent (IVCA), showing more contrast enhancement than the liver parenchyma in the arterial phase and showing contrast enhancement with the liver parenchyma in the venous phase, was observed in the abdominal MRI. The lesion was evaluated as progressive.

The patient's complaints of severe headache, nausea, and vomiting continued during follow-up, and imaging was performed with cranial MRI and MR venography in November 2020. A contrast-enhancing lesion was reported in the left half of the clivus with a size of 2 cm on T1 examination after IVCA (Fig. 1). A biopsy was performed on the mass extending from the clivus to the nasopharynx, and it was concluded to be an HCC metastasis (Fig. 2).[3]

As a result of PET-CT, increased F-18 fluoro-2-deoxy-glucose (FDG) uptake (SUV max: 3.94) was observed at the level of malignancy in lytic lesions, which were more prominent in the anterior of the right femur neck, posterior in the upper sections of the left iliac bones, and more prominent in the right lateral of the sacrum. The clinical stage of the patient was evaluated as Barcelona Clinic Liver Cancer terminal stage (D), and pain palliation and supportive treatment were given. In January 2021, the patient presented to the emergency room with complaints of nausea, vomiting, and confusion. Based on the tests performed, the patient was diagnosed with sepsis and multiorgan dysfunction syndrome. Despite intervention, the patient's vital parameters deteriorated, and the patient passed away.

DISCUSSION

Intrahepatic and extrahepatic metastases of HCC are frequently reported. Prolongation of expected survival with new treatment methods and the development of imaging methods are among the reasons for the increased detection of extrahepatic metastases. Extrahepatic metastases are most common in the lungs, intra-abdominal lymph nodes, bones, and adrenal glands. Intracranial metastases of HCC have been reported very rarely compared to other extrahepatic sites. Nam et al.[4] reported the frequency of brain metastases as 0.6% in a study involving 1,351 patients.

Clinical presentations in cases with intracranial metastases can include headache, nausea, vomiting, changes in consciousness, seizures, and motor deficits.[5] In our case, a severe headache was the presenting symptom after TACE. The emergence of neurological symptoms after TACE raises the possibility of lipiodol embolism, which has been reported after TACE in the literature as a differential diagnosis. The advanced stage of primary liver disease and the presence of other extrahepatic metastatic foci have been suggested as factors associated with brain metastases.[6]

Considering the cases presented in the literature, similar clinical presentations have been reported. Peres et

al.[7] diagnosed HCC by biopsy taken from a hemorrhagic cerebral mass. Shapey et al.[8] reported confusion, vision loss, and extremity weakness in two cases.

HCC cases with intracranial metastases have a poor prognosis. Post-diagnosis survival is reported to be, on average, 3 months.[4-7] Survival in untreated cases is measured in weeks. However, comprehensive treatments can prolong survival up to 12 months.[9] In our case, survival after the diagnosis of metastasis was five months. Options such as whole-brain radiotherapy (WBRT), stereotactic radiosurgery, and chemotherapy have been suggested for treating cases with intracranial metastases.[9] Emergency surgery may be required in cases complicated by intracranial hemorrhage.[8] However, the lack of consensus in treatment algorithms creates difficulties in treatment. Despite aggressive treatment, prognosis remains poor.[9]

Conclusion

With increased survival, an increase in HCC cases presenting with intracranial metastases can be expected. Intracranial metastases should be considered in the differential diagnosis of patients presenting with central nervous system findings such as altered consciousness, motor deficits, and headache.

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FIGURE LEGENDS

Figure 1. Intracranial mass in MRI

A 2 cm enhancing lesion in the left half of the clivus is shown in the marked area.

Figure 2. Histopathological images of intracranial mass

(A) Neoplastic cells with moderate to adundant amount of granular eosinophilic cytoplasm andvesicular nuclei are arranged in trabecular and pseudoglandular pattern. (B) Neoplastic cells produce bile which is observed in pseudoglandular areas. (C) Positive staining with HepPar1. (D) Positive staining with Arginase1.