Rare presentation of metastatic hepatocellular carcinoma in the finger: Case report and review of literature

F. Rhana Mousavi MD FCAP[1], Bassem Bekheit[2], Nick A Hirad BS[3], Emon Alavi MS[4,] and Abanoub Gabra MD[1]

[1]Department of Pathology and Laboratory Medicine, HCA East Florida, USA, [2]Dr. Kiran C. Patel School of Medicine, Nova Southeastern University, USA, [3]Florida Atlantic University, Florida, USA, [4]PCOM – South Georgia, USA

INTRODUCTION

▪Hepatocellular carcinoma (HCC) is the most common (>80%) primary liver malignancy worldwide and 80% of HCC cases arise in cirrhosis. Hepatocellular carcinoma is the sixth most common malignancy and the fourth most common cause of cancer mortality worldwide. The median age of onset is in the sixth decade with a male to female ratio of 3:1.

▪Risk factors includes chronic liver disease leading to cirrhosis primarily due to chronic viral hepatitis (HBV and HCV), heavy alcohol consumption, nonalcoholic fatty liver disease, environmental exposures such as aflatxins, and developmental/congenital disorders such as ataxia telangiectasia and Alagille syndrome.

▪Treatment for HCC depends on the spread and pattern of extent. There are four major modalities by which HCC can be managed: surgical resection, regional therapy, transplant, and systemic therapy (Llovet et al., 2016). If a patient has a unifocal nonmetastatic noncirrhotic HCC then the patient would be a good candidate for surgical resection due to the lack of cirrhosis in the spared tissue that could become malignant (Clark et al., 2015). Regional modalities should be considered when

CASE REPORT

▪A 69-year-old male presented to the emergency department with a chief complaint of left middle finger osteomyelitis and extreme pain. He was in hospice for a stage IV liver cancer which arose in his cirrhotic liver five years ago.

▪The patient's finger was swollen and had undergone a course of unknown antibiotics orally for four weeks without any improvement. The patient was afebrile with jaundice at the time of admission with normal white blood cell count and elevated liver function tests.

▪Radiology report of his left hand revealed a destructive lesion of left third finger with differential diagnosis of osteomyelitis. On physical exam, his finger was tender to palpitation with no other significant findings. A biopsy of the lesion sent for pathology department concluded the diagnosis of as metastatic hepatocellular carcinoma.

▪He had surgical intervention by partial left lobectomy 10 years ago following systemic chemotherapy with Sorafenib which relapsed as a

RESULTS & DISCUSSION

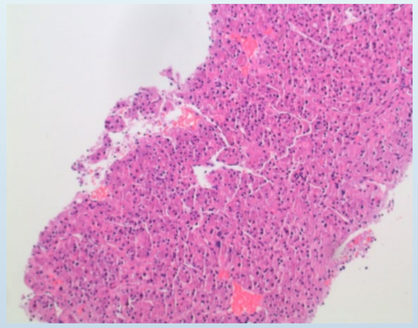

Figure 1. Hematoxylin and Eosin stain, 20x power. Polygonal cells with nuclear atypia and Eosinophilic cytoplasm, High N/C ratio.

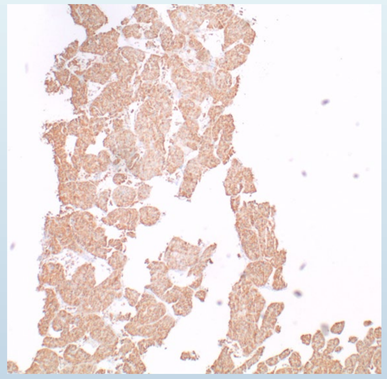

Figure 2. HEPAR, highlights hepatocelluar carcinoma cells

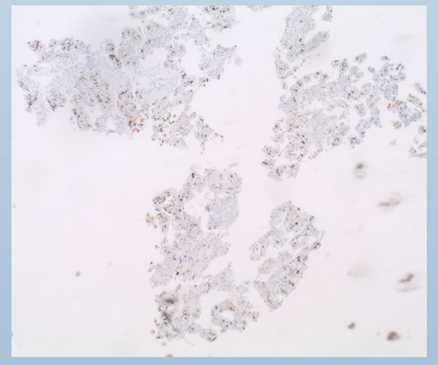

Figure 3. PANKERATIN - negative in Hepatocelluar carcinoma.

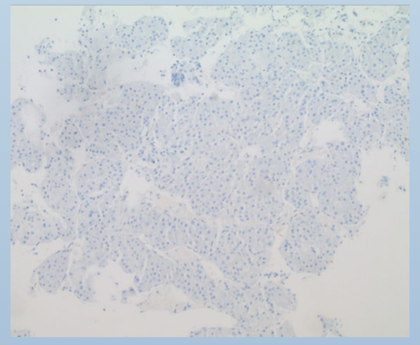

Figure 4. S100 - negative in Hepatocelluar carcinoma

- HCC has an average survival length of 36 months (Llovet et al., 2016). Moreover, metastasis to skin and soft tissue is a poor prognostic indicator and studies by Damron and Heiner report survival between 4-18 month while other studies suggest six months (Stomeo et al., 2015; Chen et al., 2017).
- Morphologically, other hepatic and non-hepatic lesions can mimic hepatocellular carcinoma metastasis. Cholangiocarcinoma has discrete glands and desmoplastic stroma, Mucicarmine-CK7-CK19- MOC31 are often positive, hepatocyte nuclear factor-β highlights most cholangiocarcinomas while most HCCs are negative, and hepatocellular immunohistochemical markers are negative (Razumilava & Gores, 2014).
- Typical mutational profile can help in making diagnosis in challenging cases as TERT promoter and CTNNB1 mutation favor HCC and IDH1/IDH2 mutation and FGFR2 fusions favor intrahepatic cholangiocarcinoma (Chaisaingmongkol et al., 2017).
- Hepatoid carcinoma is an aggressive tumor with a poor outcome and represents a rare extrahepatic tumor resembling HCC on morphology and immunohistochemistry with no definite hepatic lesions except in case hepatoid carcinoma metastasizing to liver (Miyama et al., 2020). Hepatocellular markers, including arginase-1, AFP, and glypican-3, can be positive

CONCLUSION

▪Hepatocellular carcinoma (HCC) is a primary tumor of the liver that primarily develops in the setting of chronic liver disease.

▪HCC is difficult to diagnosis due to it requiring the use of multiple imaging modalities with the goal to detect tumors when they are less than or equal to 2 cm in size to allow all possible treatment options to be used.

▪Prognosis for a five-year overall survival is 24-70% and depends mainly on TMN staging (Hartke, Johnson, & Ghabril, 2016). A poor prognosis is associated with lympho-vascular invasion, presence of cirrhosis, multifocality, tumor size > 2 cm, and portal vein thrombosis (Kim, Song, & Gong, 2012).

▪We presented a 69-year-old male with stage IV liver cancer residing in hospice presenting with left middle finger osteomyelitis and extreme pain which was biopsied and confirmed as metastasized hepatocellular carcinoma.

▪Awareness of the potentiality of hepatocellular carcinoma to present and mimic osteomyelitis would help clinicians and pathologists to have HCC in differential diagnosis.

▪Although hepatocellular carcinoma in the finger is rare, this case serves as a reminder to consider

REFERENCES

Llovet, J. M., Zucman-Rossi, J., Pikarsky, E., Sangro, B., Schwartz, M., Sherman, M., & Gores, G. (2016). Hepatocellular carcinoma. Nature reviews. Disease primers, 2, 16018. doi:10.1038/nrdp.2016.18

- Clark, T., Maximin, S., Meier, J., Pokharel, S., & Bhargava, P. (2015). Hepatocellular Carcinoma: Review of Epidemiology, Screening, Imaging Diagnosis, Response Assessment, and Treatment. Current problems in diagnostic radiology, 44(6), 479–486. doi:10.1067/j.cpradiol.2015.04.004
- Stomeo, D., Tulli, A., Ziranu, A., Perisano, C., De Santis, V., & Maccauro, G. (2015). Acrometastasis: a literature review. European review for medical and pharmacological sciences, 19(15), 2906–2915.
- Razumilava, N., & Gores, G. J. (2014). Cholangiocarcinoma. Lancet (London, England), 383(9935), 2168–2179. doi: 10.1016/S0140-6736(13)61903-0
- Chaisaingmongkol, J., Budhu, A., Dang, H., Rabibhadana, S., Pupacdi, B., Kwon, S. M., Forgues, M., Pomyen, Y., Bhudhisawasdi, V., Lertprasertsuke, N., Chotirosniramit, A., Pairojkul, C., Auewarakul, C. U., Sricharunrat, T., Phornphutkul, K., Sangrajrang, S., Cam, M., He, P., Hewitt, S. M., Ylaya, K., … TIGER-LC Consortium (2017). Common Molecular Subtypes Among Asian Hepatocellular Carcinoma and Cholangiocarcinoma. Cancer cell, 32(1), 57–70.e3. doi: 10.1016/j.ccell.2017.05.009
- Miyama, Y., Fujii, T., Murase, K., Takaya, H., & Kondo, F. (2020). Hepatoid adenocarcinoma of the lung mimicking metastatic hepatocellular carcinoma. Autopsy & case reports, 10(2), e2020162. doi:10.4322/acr.2020.162
- Hartke, J., Johnson, M., & Ghabril, M. (2017). The diagnosis and treatment of hepatocellular carcinoma. Seminars in diagnostic pathology, 34(2), 153–159. doi:10.1053/j.semdp.2016.12.011
- Kim, J. I., Song, C. H., & Gong, H. S. (2012). Finger skin metastasis from hepatocellular carcinoma: a case report. Hand surgery : an international journal devoted to hand and upper limb surgery and related research : journal of the Asia-Pacific Federation of Societies for Surgery of the Hand, 17(1), 131–134. doi:10.1142/S0218810412720148

SCAN TO READ THE PUBLISHED ARTICLE