HEPATOCELLULAR CARCINOMA ASSOCIATED WITH SPONTANEOUS LIVER ABSCESS IN A PATIENT WITH CHRONIC HEPATITS B: A CASE REPORT

V.S. LO, M.M. CHAN
UNIVERSITY OF SANTO TOMAS HOSPITAL

ABSTRACT

SIGNIFICANCE
Hepatocellular carcinoma (HCC) associated with spontaneous concurrent liver abscess is extremely rare, with available literature reporting prevalence of only 0.9 to 2%. Most of the recorded cases of HCC presenting with liver abscess are due to invasive interventions.

CLINICAL PRESENTATION
We present a case of a 65 year old male, Filipino, previously diagnosed case of Chronic Hepatitis B who was admitted due to one week history of intermittent fever and chills, accompanied by jaundice, epigastric pain, anorexia and unintentional weight loss. Abdominal exam revealed increased warmth in the right upper quadrant with no tenderness.

MANAGEMENT
White blood cell count and Alpha feto protein level were both elevated at 13.5 x 10^9/L and 443.4 ng/mL, respectively. Whole Abdominal Ultrasound revealed a 9.44 x 9.78 x 9.48 cm solid mass at Segment VI/VII of the right hepatic lobe with intralesional blood flow, which on subsequent triphasic contrast-enhanced CT scan demonstrated heterogenous enhancement with a large central area of necrosis and gas collection. Primary consideration was hepatic abscess, to rule out malignancy. Imipenem and Metronidazole were started. Patient subsequently underwent ultrasound guided percutaneous aspiration of the hepatic mass yielding 100 ml of dark red, non-clotting fluid as well as tissue cores and fragments. Cytology confirmed the presence of HCC and culture examination revealed Eschericia Coli indicative of concomitant abscess formation.

RECOMMENDATION
Pyrexia, leucocytosis and appropriate imaging findings may signify red flags that may indicate an unusual case of HCC. Differential diagnosis of HCC with abscess is difficult and may require aspiration cytology or pathology.

KEYWORDS
case report, hepatocellular carcinoma, hcc, liver abscess, pyogenic liver abscess, hepatitis b

HEPATOCELLULAR CARCINOMA ASSOCIATED WITH SPONTANEOUS LIVER ABSCESS IN A PATIENT WITH CHRONIC HEPATITS B: A CASE REPORT

VIRGILIO*.S. LO JR., MELCHOR .M. CHAN*
UNIVERSITY OF SANTO TOMAS HOSPITAL
DEPARTMENT OF MEDICINE, SECTION OF GASTROENTEROLOGY

INTRODUCTION

Hepatocellular carcinoma (HCC) is the 4th most common cancer in the Philippines with an age-standardized rate of 6.7 per 100,000 persons and the 2nd most common cause of cancer death with annual death rate of 7,477 (Sollano et al, 2015). In most cases, HCC is already at an advanced stage upon diagnosis and treatment may be delayed. Occasionally, HCC could mimic pyogenic liver abscess (PLA) with symptoms like pyrexia and leukocytosis upon presentation. HCC associated with spontaneous concurrent liver abscess is extremely rare, with available literature reporting prevalence of only 0.9 to 2%, mostly in East Asia. Majority of the recorded cases of HCC presenting with liver abscess are due to invasive interventions (Huang et al, 2009).

CASE REPORT

We present a case of a 65 year old male, Filipino, previously diagnosed case of Chronic Hepatitis B (on entecavir) who was admitted due to one week history of intermittent fever and chills, accompanied by jaundice and epigastric pain. The pain was of moderate intensity and non radiating. There was history of anorexia and weight loss of approximately 10 kilograms over two months. On physical examination, patient was febrile (38.1°C), tachycardic (103bpm), and had an increased warmth in the right upper quadrant. The liver was firm in consistency and had smooth margins. No tenderness was illicited. Baseline chest x-ray wsas unremarkable. Initial laboratory findings were as follows: Complete blood count with a hemoglobin of 12.4g/dl, platelet of 244 x 10^9/L., white blood cell count of 13.5 x 10^9/L, segmenters of 61%, lymphocytes of 35%. Serum sodium of 138 mmol/L, potassium of 4.2 mmol/L, creatinine of 0.59 mg/dL. Liver function tests revealed an elevated aspartate aminotransferase (AST), alanine aminotransferase (ALT) and alkaline phosphatase of 68.3, 48.2 and 185.7U/L, respectively. Albumin was low at 2.9 g/dl with a Total protein of 6.8 g/dl, globulin of 3.8 g/dl and A/G ratio of 0.80. Total bulirubin was 1.12 mg/dl with the conjugated fraction at 0.75mg/dl. Prothrombin time was 15.5 with an INR of 1.3 . Alpha feto protein was elevated at 443.4 ng/mL,

Whole Abdominal Ultrasound revealed a normal sized liver with parenchymal changes and a slighlty nodular outline that is consistent with cirrhosis. A 9.44 x 9.78 x 9.48 solid mass in segment VI/VII of the right hepatic lobe with intralesional blood flow (Figure 1). Multiple hepatic cysts, largest at segment VI exhibitng septation with minimal perihepatic and perisplenic fluid collection. Subsequent triphasic contrast-enhanced CT scan demonstrated a 11.8 x 10.7 x 11.8 cm early enhancing mass in the right hepatic lobe with central area of necrosis and gas collections (Figure 2). Primary consideration was hepatic abscess, to rule out malignancy. Intravenous Imipenem and Metronidazole were started. Due to the uncertainty of an underlying malignancy, patient subsequently underwent ultrasound guided percutaneous aspiration of the hepatic mass yielding 100 ml of dark red, non-clotting fluid as well as tissue cores and fragments. Drainage was attempted but was unsuccessful. The cellular smears and cellblock disclosed cellular preparations composed of large atypical cells arranged in clusters, some scattered singly and some in trabecular architecture. These cells had pale to hyperchromatic, round to ovoid nuclei, irregular nuclear bordoers, some with prominent macronucleoli and scant to ample amount of eosinophilic cytoplasm.

These were admixed with numerous inflammatory cells and are set in a fibrinous and necrotic background (Figure 3). Cytology confirmed the presence of HCC and culture examination revealed Eschericia Coli indicative of concomitant abscess formation.

Parenteral antibiotics were continued and patient was clinically improving with fever lysis after 7 days of antibiotic therapy. Given the Bacelona Clinic Liver Cancer (BCLC) B staging of our patient, transarterial chemoembolization (TACE) was offered. Unfortunately, he later developed complications of hospital acquired pneumonia and succumbed to septic shock.

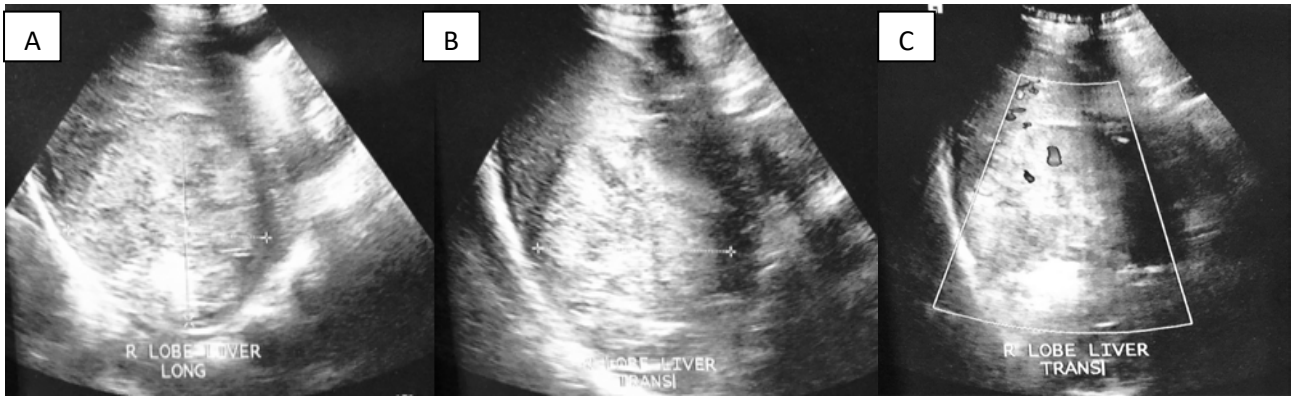

Figure 1. Ultrasound of the Whole Abdomen focused on the liver (A to C): Solid mass at Segment VI/VII of the right hepatic lobe showing minimal intralesional vascularity in color Doppler (C)

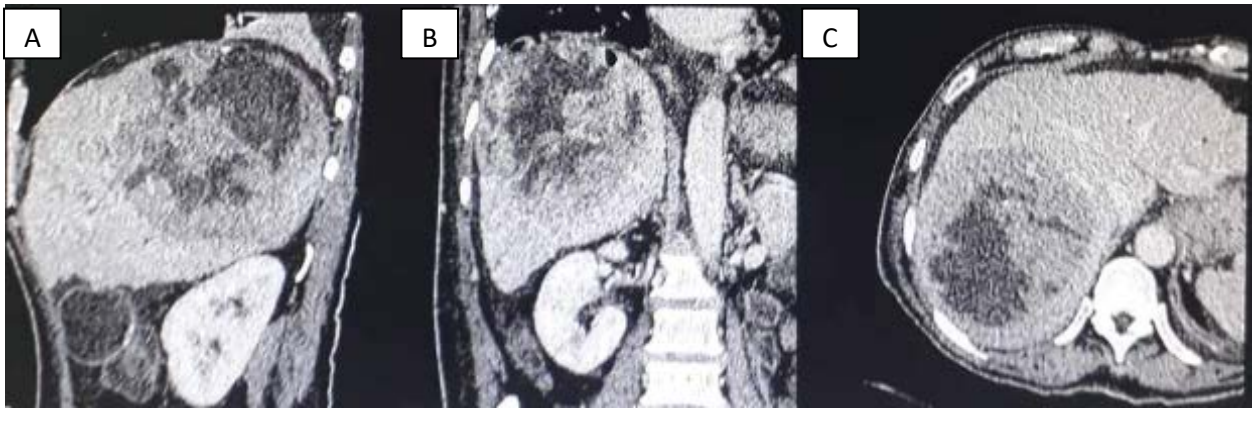

Figure 2. Contrast-enhanced Whole Abdominal CT scan in the portal venous phase (A to C): Sagittal (A), Coronal (B) and Axial (C) reconstruction of the heterogeneously enhancing mass almost encompassing the entire right lobe with central area of necrosis and intralesional air pockets.

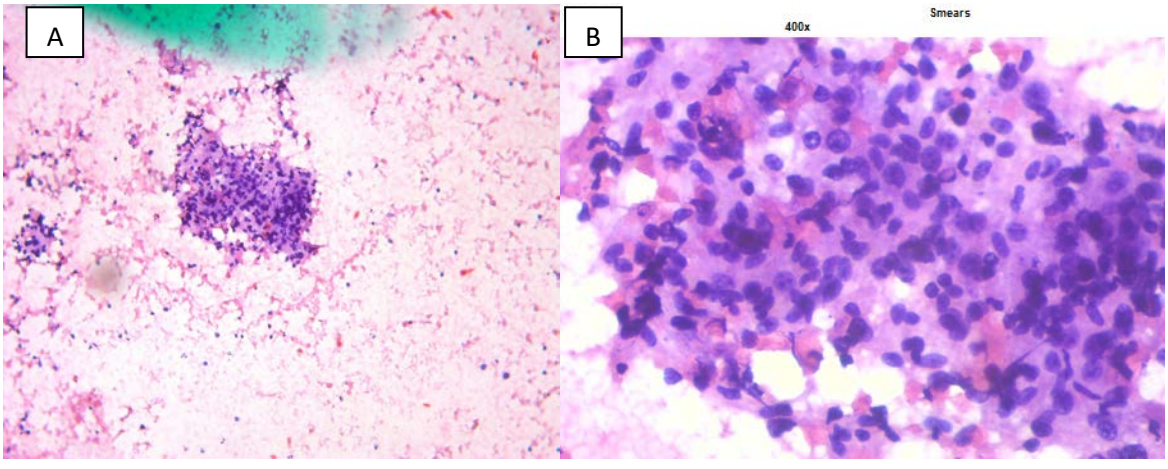

Figure 3. Cytology of Hepatic Mass (A & B). Large atypical cells arranged in clusters, some scattered singly and some in trabecular architecture (A). Pale to hyperchromatic, round to ovoid nuclei, irregular nuclear bordoers, some with prominent macronucleoli and scant to ample amount of eosinophilic cytoplasm. These are admixed with numerous inflammatory cells and are set in a fibrinous and necrotic background (B).

DISCUSSION

Pyogenic licer abscess as the initial manifestation of underlying hepatocellular carcinoma has been reported only in a small case series. The underlying mechanism of HCC presenting as PLA is through spontaneous tumor necrosis and/or biliary obstruction caused by tumor thrombi, superimposed with bacterial infection. *Escherichia coli* is the most common causative agent. Clinical features of liver abscess caused by underlying HCC are mainly fever, chills, right upper quadrant pain, hepatomegaly, malaise, anorexia, and jaundice. One differential diagnosis to always keep in mind is an abscess-like clinical presentation of HCC, particularly with the coexistence of tumor necrosis (Huang et al, 2006).

Contrast-enhanced Triphasic CT is essential to diagnose HCC or PLA. HCC classically enhances during arterial phase and washes out during the portal and delayed phases. The radiographic appearances of PLA range from well circumscribed cystic lesion with enhancing rim to heterogeneously enhancing mass-like lesion, which is sometimes indistinguishable from HCC. However, in most cases, it is not difficult to diagnose hepatic abscess based on the imaging features by using US, CT or MRI (Kim et al, 2013). If a diagnostic dilemma persists, a biopsy may be needed for an accurate diagnosis Elevated serum AFP levels may help in diagnosing HCC but they may not always be raised.

In a study by Lin et al, they found that liver cirrhosis, hepatitis B virus infection, hepatitis virus C virus infection, and advanced age were independent risk factors for pyogenic liver abscess as the initial manifestation of underlying HCC. Furthermore, diabetes was more frequently associated with pyogenic liver abscess only in patients without underlying HCC. In terms or prognosis, PLA as the initial manifestation of underlying HCC had poorer outcomes compared with HCC without PLA. One factor is that the infectious process itself adversely delays the time for definitive management of HCC. In the study of Okuda and Yeh, HCC presenting with pyrexia and leukocytosis had a poor outcome with a mean survival of only 2.35 and 3.5 months, respectively.

All patients with HCC presenting as PLA should receive appropriate parenteral antibiotics. Percutaneous aspiration or drainage of the liver abscess is a rational treatment because of its effectiveness. Nevertheless, whenever percutaneous aspiration or drainage fails, surgical drainage of the liver abscesses should be undertaken without hesitation (Yeh et al, 1998). If imaging features indicate an opportunity of tumor resection or surgical drainage, needle biopsy and percutaneous drainage should be avoided. Without timely and reasonable surgical management, tumors could progress rapidly and the chance of surgery could be missed. Failure of percutaneous needle aspiration or discovery of tumor cells are definite indications for surgical drainage or hepatectomy and exploratory laparotomy should be considered. (Li et al, 2012).

CONCLUSION

In conclusion, HCC presenting as spontaneous liver abscess represents a diagnostic challenge and usually carries a grave prognosis. Pyrexia, leucocytosis and appropriate imaging findings may signify red flags that may indicate an unusual case of HCC. Differential diagnosis of HCC with abscess is difficult and may require aspiration cytology or pathology.

REFERENCES:

1. Lin YT, Liu CJ, Chen TJ, et al. Pyogenic liver abscess as the initial manifestation of underlying hepatocellular carcinoma. Am J Med 2011; 124: 1158–64.
2. Yeh et al., Hepatocellular Carcinoma Presenting as Pyogenic Liver Abscess: Characteristics, Diagnosis, and Management; Clinical Infectious Diseases 1998;26:1224–6
3. Li et al., Primary Liver Cancer Presenting as Pyogenic Liver Abscess: Characteristics, Diagnosis, and Management; J. Surg. Oncol. 2012;105:687–691
4. Jun et al.,Clinical research of primary liver cancer mimicking liver abscess; *Int Surg J. 2017 Mar;4(3):1033-1038*
5. Sollano et al, Asia Pacific Working Party on Prevention of Hepatocellular Carcinoma *2005*
6. Huang et al., HEPATOCELLULAR CARCINOMA ASSOCIATED WITH LIVER ABSCESS; *Kaohsiung J Med Sci* 2009;25:537–43
7. Kim et al., Hepatic abscess mimicking hepatocellular carcinoma in a patient with alcoholic liver disease; Clinical and Molecular Hepatology 2013;19:431-434
8. Okuda K, Kondo Y, Nakano M. Hepatocellular carcinoma presenting with pyrexia and leukocytosis: report of five cases. Hepatology. 1991;13(4):695-700.