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Diagnostic Challenges Hepatocellular Carcinoma: Case Report and Review of the Literature

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Abstract: ***Hepatocellular carcinoma (HCC) is now the fifth-most common cancer in the- world. HCC often more often in males than females (2, 4:1). Chronic liver disease and cirrhosis remain the most important risk factor for the development of HCC of which viral hepatitis and excessive alcohol intake are the leading risk factors worldwide. Surveillance for HCC should have the goal of decreasing mortality and improving patient outcomes. Modalities available for HCC screening include both radiographic tests and serological markers. Although the standards are clear, we often see patients with advanced HCC in clinical practice, who cannot be offered any effective treatment. Some of the patients presenting with inconclusive and changeable test results, constitute a separate problem. In such cases the diagnostic process is typically long-term and delayed. In this paper we present a case report where the diagnosis could be concern for HCC.***

Keywords: hepatocellular carcinoma, diagnosis challenge

1. Introduction

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. (1, 2) In country with high prevalent of hepatitis B, vaccination for hepatitis B virus (HBV) showed decrease in HCC incidence (4). HCC particularly affect more in males than females (2, 4:1). Higher incidence happen in Eastern and Southern Asia, Middle and Western Africa, Melanesia and Micronesia/Polynesia (3).

There were some risk factor for HCC which chronic liver disease and cirrhosis is the most important for the development of HCC (4,5).Viral hepatitis and excessive alcohol intake are the leading risk factors worldwide(4).Both hepatitis B and C are the most common causes of chronic hepatitis in the world (5). Patient with dual infection (HBV and HCV) in a cirrhotic can be increases the risk of HCC (6). Alcohol consumption and liver disease correlates with the amount of alcohol consumed over a lifetime (4). Heavy alcohol intake defined as consumption or drinking alcohol more than 50-70 g/day(5). Diabetes mellitus and obesity also increase the risk of HCC (7, 8). Other risk factors may include smoking. Cigarette smoking is associated in increase the development of HCC (9).

Surveillance for HCC is important to decreasing mortality and improving patient outcomes (10). All the patient with cirrhosis should be screened for HCC. This screening might be less value in some cases such as patient with autoimmune hepatitis cirrhosis and patient with decompensated cirrhosis (11).

There were two modalities used for screening HCC include radiographic tests and serological markers. ultrasonography (US) commonly used for surveillance. Other radiographic used for surveillance is multiphase computerized tomography (CT) and magnetic resonance imaging (MRI) with contrast (4). Serological marker that use to test HCC is alpha-fetoprotein (AFP) and des-gamma carboxyprothrombin (DCP) (12). AFP play rule in regulation of fatty acids in both fetal and proliferating adult liver cells (13). The upper limit of normal that is often use is 20 ng/mL because AFP levels in healthy individual rarely exceed more than this level (4, 14).

The key to obtain good treatment for HCC is early diagnosis. Nodules <1 cm detected from US that cannot be defined should be followed upin 3-4 months with US. If nodules >1 cm detected via US should have further radiologic investigation (4). Other radiologic investigation including contrast-enhanced triple or quadriphasic CT or MRI (15). Confirmation with different technique was needed if the first radiologic test is equivocal (4). If the diagnosis still remains uncertain, a serum AFP level >400 ng/mL has a high positive predictive value (16).

Stratification of patients with HCC into groups is the primary aim of staging systems (4). Staging systems will guide in organizing patients based on prognosis and guide clinicians in a choice proper therapy and aid patient counselling (17). The staging system that widely accepted in clinical practise is Barcelona Clinic Liver Cancer Staging System (BCLC). BCLC also the forefront of many clinical trials used to establish the effectiveness of new HCC drugs (18).

Pulmonary metastases is the most frequently metastasize process in HCC patient. 34.5 % of patients with HCC experience this problem. The prognosis of these patients is be very poor.The 1-year survival rate of HCC patients with extrahepatic metastasis being only 21.7–24.9% (19).

The diagnosis of HCC can be challenging and obtained result can be ambiguous. This is a cases that we need to be concern for HCC.

2. Case Report

A 48 year old man came to the Emergency Room (ER) at Wangaya Hospital complaining weakness, pain on chest, a mass on upper right abdomen and on the centre of the chest getting bigger since 6 months ago. At the first time, he complained pain on the chest and he went to GP. He was diagnosed with infection process in his lung based on thorax photo. His symptom was not getting better and small mass appear on the right upper abdomen. He was not continue to control himself until the mass continue getting bigger.

He also feels weight loss more than 10 kg in the past 4 months. The patient said 2 months ago, his body started become yellow and getting normal by itself. Patient did not know history of hepatitis before since he was never get hepatitis test.

He had history of alcohol abuse when he was young until 10 years ago. He drink alcohol almost everyday and increase the amount of alcohol during traditional ceremony. He also had history of smoking since he was young until now. History of diabetes and metabolic syndrome was denied by patient. There is no other family member have the same symptom like patient.

Figure 1: Mass on upper right abdomen & chest

On admission, the patient was conscious with normal vital signs (Blood Pressure 125/80, heart rate 86 bpm, Respiratory Rate 20x/minutes, and axillar temperature of 36.5^0C. On physical examination there are anemic on both eyes, mass on chest, hepatomegaly, splenomegaly, oedema on both legs. There are no icterus, cyanosis, no wheezing & ronchii.

Laboratory results showed microcytic hypochromic anemia (haemoglobin 8.7 g/dL, mean corpuscular volume 80.2 fL, mean corpuscular haemoglobin 25.7 pg, thrombocyte count 478.000/uL, leucocyte count 4.840/uL, blood glucose 60 mg/dL, albumin count 2.3 g/dL, SGPT 34 U/L, SGOT 104 U/L, urea 32 mg/dL, blood creatinine 0.6 mg/dL, Na 133 mmol/L, Kalium 4.1 mmol/L, Chloride 92 mmol/L.

The ultrasound scan showed liver size getting bigger >14cm with multiple nodul in right and left liver lobe. Chest and pulmonary X-ray showed there are multiple nodules on parahiller and paracardial right – left of lung. On CT Scan Thorax with contrast showed that solid mass with lipid dense in left liver lobe with size 7,46 x 5,4 6,3 cm and contrast enhancement on solid part. There are multiple necrotic nodul on the right and left liver lobe and heterogenoud contrast enhancement that suggestive of HCC. There are also multiple nodul on both lungs suggestive to metastase process. The results of Alfa Feto Protein (AFP) showed that the results remained stable (AFP = 12.73 ng/mL).

The patient was treated with IVFD D10% 20 drops per minute, 3 Albumin 20% flash 1 every 24 hours, 3 blood transfusion 1 every 24 hours, Omeprazole injection 40mg every 24 hours.

3. Discussion

HCC is now the fifth-most common cancer in the- world and the third cause of cancer-related mortality as estimated by the World Health Organization. HCC often more often in males than females (2, 4:1), with a higher incidence in Eastern and Southern Asia, Middle and Western Africa, Melanesia and Micronesia/Polynesia (2).

Chronic liver disease and cirrhosis remain the most important risk factor for the development of HCC. Alcohol consumption remains an important risk factor for the development of HCC. The relationship between alcohol and liver disease correlates with the amount of alcohol consumed over a lifetime. Other risk factors may include smoking. Cigarette smoking is associated with significant increase in the development of HCC.

Our patient is male, 48 years old, Indonesian with history for this patient was an active smoker and a social drinking which can increase the chance to get HCC. The amount of alcohol that he consumed were extremely high and started since he was young. Those lifestyle lead our concern as the main risk factor for liver damage. But the history of hepatitis remained unclear since he never got tested before. He got once complained yellowish skin but it getting better by itself.

Early diagnosis is the key to obtain the best treatment result for HCC.Modalities available for HCC screening include both radiographic tests and serological markers. Radiological tests commonly used for surveillance include ultrasonography (US), multiphase computerized tomography (CT) and magnetic resonance imaging (MRI) with contrast. Serological marker that usually use to test HCC is alpha-fetoprotein (AFP). The upper limit of normal that is often adopted is 20 ng/mL because AFP levels in healthy individual rarely exceed this level. The diagnosis should be confirmed with a cytological or histopathological evaluation. According to international diagnostic guidelines, if the lesion larger than 2 cm, HCC can be diagnosed based on contrast-enhanced imaging, confirming hyper vascularization during the arterial phase and quick washout during the venous phase. If the histopathological evaluation

fails to confirm cancerous lesion, diagnostic imaging should be performed repeatedly every 3-6 months.

In this patient we did both radiographic test and serological test. The ultrasound scan showed liver size getting bigger >14cm with multiple nodul in right and left liver lobe. On CT Scan Thorax with contrast showed that solid mass with lipid dense in left liver lobe with size 7,46 x 5,4 6,3 cm and contrast enhancement on solid part. There are multiple necrotic nodul on the right and left liver lobe and heterogenoud contrast enhancement that suggestive of HCC. We continued to serological test by measure AFP level.AFP level remained stable (12, 73 ng/mL) although the size of the mass from CT scan more than 5cm.

A similar cases reported by Monika Pazgan-Simon et.al showed a 65 year old female with alcohol abuse and Hepatitis C infection. Patient found with stable AFP level by two measurement in space time. A further follow up and investigation is needed in this patient. Our planning is to do histopathological testing but patient did not give his consent to invasive diagnostic procedure. Patient will retake the AFP measurement later. Repeat imaging testing and serology test will be done in the next 3-6 month.

Unfortunately, The diagnosis of HCC is too often made with advanced disease when patients have become symptomatic and have some degree of impairment. About 34.5 % of patients with HCC experience pulmonary metastases, as HCCs most frequently metastasize to the lungs.

In this patient, the delayed diagnose of HCC caused by the low awareness of the disease from patient and waited for 6 month to do advanced check. Misleading diagnose also happened earlier of the disease by the GP. The metastase process is already appear from the CT scan with contrast that showed multiple nodul on both lungs.

4. Conclusion

Excessive alcohol intake is the leading risk factors worldwide for the development of HCC. Awareness of the disease is needed for all doctors to get early diagnosis and choose proper diagnostic tools. Low sensitivity of ultrasound imaging and poor quality CT preclude early diagnosis of HCC. Histopathological evaluation not always easy to obtain. The technical difficulties in obtaining specimen preclude early histopathological diagnosis in many cases. The ambiguity of diagnostic as well as long waiting time for hospital admission deprives many patients of their chance to get effective treatment. The prognosis of these patients is very poor, for example, the 1-year survival rate of HCC patients with extrahepatic metastasis being only 21.7–24.9%.

5. Author Contribution

All authors contributed equally.

6. Conflict of interest

There is no conflict of interest in this case report.

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