



Hepatocellular carcinoma masquerading as Hemangioma: A case report

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Abstract

Hepatocellular carcinoma (HCC) is the most common primary malignancy of liver and the leading cause of cancer-related deaths worldwide. It is commonly associated with advanced stage presentation with high recurrence rates and poor prognosis due to the limited availability of treatment options. Radiology plays an important role in the diagnosis of HCC. But tissue analysis is often required because imaging is not always specific. So histopathology remains the gold standard in the diagnosis of HCC. We report a case of a 70-year-old female with clinical and radiological diagnosis of a giant hemangioma. The patient was then taken up for exploratory laparotomy with right hepatectomy and the mass was sent for histopathological examination. A diagnosis of Moderately-differentiated hepatocellular carcinoma was made.

Keywords: Biopsy, Diagnosis, Hemangioma, Hepatectomy, Hepatocellular carcinoma, Histopathology.

Introduction

Hepatocellular carcinoma (HCC) is a primary liver malignancy with hepatocytic differentiation which arises from hepatocytes in different stages of differentiation. ⁽¹⁾ Despite substantial progress in the diagnostic arena, life expectancy of patients with HCC remains poor. ⁽²⁾ Radiological imaging plays a significant role in the diagnosis of HCC as the non-invasive diagnosis in high-risk patients by typical imaging findings alone is widely used in major practice guidelines for HCC. ⁽³⁾ Despite technical advancements and progression in the field of imaging, tissue analysis is often required because imaging is not always specific, has limited expertise and the lack of advanced imaging facilities in many centres act as limitations of imaging in the diagnosis of small, mixed, and other variant forms of HCC. Therefore, histopathological examination is gold standard in diagnosis. ⁽⁴⁾ Hepatic hemangioma is the most frequent benign hepatic tumor with prevalence ranging from 1-2% to 20% in the general population. ⁽⁵⁾ It is usually detected

on a routine ultrasound examination due to its silent clinical behaviour. The typical ultrasound features of hemangioma are easily recognizable and rapidly guide diagnosis without need for further investigations. But there also exists an entire spectrum of atypical and uncommon ultrasound features which can lead to a misdiagnosis. ⁽⁶⁾ So histopathological diagnosis is quintessential for appropriate diagnosis. This report focuses on the significance of histopathology in the diagnosis of HCC. ⁽⁴⁾ Despite of the fact that diagnosis of HCC relies on non-invasive approaches, evaluation of histopathology is still indispensable in the clinical care of patients, as it not only allows for a definitive diagnosis but also provides significant prognostication information. ⁽⁷⁾

Case History

A 70 year-old female presented to the OPD with chief complaints of pain in the abdomen in right upper quadrant radiating to the right shoulder. On examination, a palpable mass was felt which was associated with tenderness. The radiological investigations were suggestive of a giant hemangioma (Figure 1).

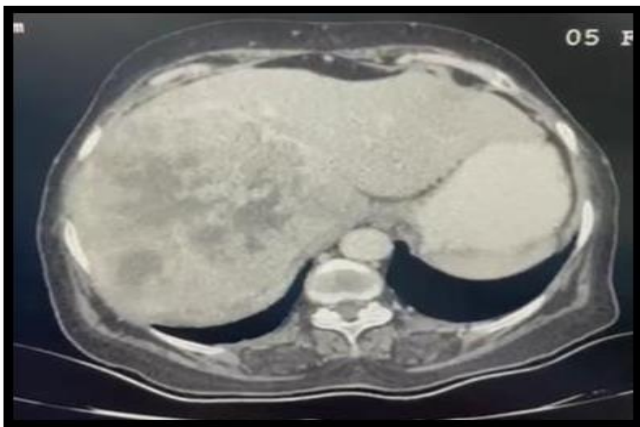


Figure 1: CT Abdomen-Pelvis (Plain + Contrast): A large 16.1 x 12.5 x 20.2 cm sized, ill-defined multilobulated smooth marginated heterogenous attenuating lesion with few hypodense areas within, involving right lobe of liver.

A clinical diagnosis of hemangioma was made and the patient then underwent exploratory laparotomy with right hepatectomy (Figure 2). The specimen was sent for histopathological examination.

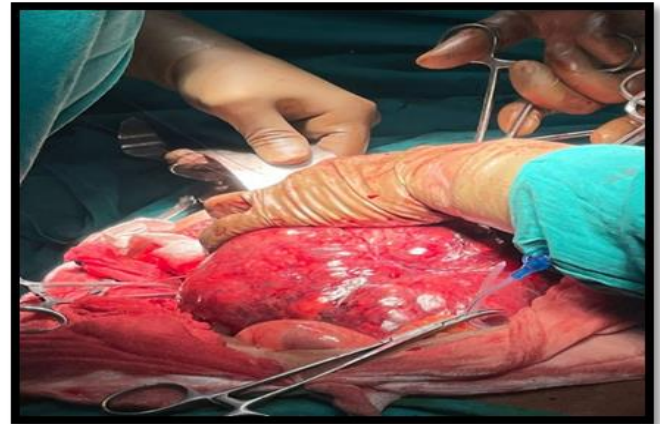


Figure 2: Intra-operative findings: A mass, weighing 3.4 kgs, was seen involving segments 5,6,7,8 of liver, encasing the inferior vena cava.

Grossly, a right hepatectomy specimen was received measuring 18 x 13 x 10 cm along with gall bladder attached to the liver measuring 7.8 x 3.5 cm. (Figure 3) External surface of the liver was well-encapsulated and bosselated. No capsular deposits were noted.



Figure 3: Right hepatectomy specimen measuring 18 x 13 x 10 cm along with gall bladder attached to the liver measuring 7.8 x 3.5 cm.

Cut surface revealed multiple nodules of varying sizes, largest measuring 11.5 x 8.5 x 8 cm, replacing almost the entire liver parenchyma. (Figure 4) The mass was solid,

soft-to-firm, homogenous, whitish, light tan to pale green. There was no evidence of necrosis or hemorrhage.



Figure 4: Cut surface showed multiple nodules of varying sizes, largest measuring 11.5 x 8.5 x 8 cm, replacing almost the entire liver parenchyma. The mass is solid, firm-to-soft at places, homogenous, whitish, light tan to pale green.

External surface of gall bladder was unremarkable. Cut surface showed thinned out wall with loss of rugosity.

Microscopic examination revealed normal hepatocytes separated from the tumor by a fibrous band. The tumor cells were arranged in trabeculae. Individual tumor cells were polygonal with moderate nuclear atypia, vesicular-to-hyperchromatic nuclei, prominent nucleoli and moderate eosinophilic as well as clear cytoplasm. (Figure 5)

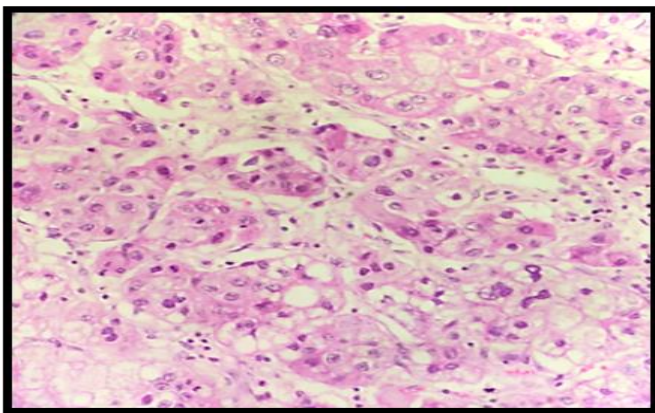


Figure 5: Tumor cells arranged in trabeculae. Individual tumor cells are polygonal with moderate nuclear atypia,

vesicular-to-hyperchromatic nuclei, prominent nucleoli and moderate eosinophilic as well as clear cytoplasm.

The tumor cells were also seen infiltrating into the serosa of gall bladder. Vascular invasion was noted, small vessel type. The closest parenchymal margin was < 1 mm. There was no evidence of cirrhosis. A diagnosis of Moderately-differentiated Hepatocellular carcinoma [pT2N (AJCC 8th edition)] was made.

Discussion

The incidence of hepatocellular carcinoma (HCC), one of the most common cancers worldwide, has been rising in the past three decades. It is associated with a huge health burden in terms of morbidity and mortality. Currently, the diagnosis of HCC based on histopathological evaluation is still indispensable in clinical practice. ⁽⁸⁾ It frequently presents with advanced disease stage, has a high recurrence rate and limited treatment options, leading to very poor prognosis. ⁽⁴⁾ Although we report a case of a 70-year old female, HCC is more commonly seen in males. ⁽⁹⁾ Multiple risk factors are likely to be involved in the etiology of HCC. ⁽¹⁰⁾ Nevertheless, cirrhosis is the most important risk factor for the development of HCC regardless of etiology, which was absent in our case. ⁽¹¹⁾ It is a multistage disease linked to environmental, dietary and lifestyle factors. HCC usually arises in the setting of chronic hepatopathy, cirrhosis, or in association with hereditary diseases such as hemochromatosis, Wilson's disease and alpha-1-antitrypsin deficiency. However, in approximately 15%-20% of cases, HCC may occur in non-fibrotic liver or in livers with minimal portal fibrosis without any septal fibrosis, similar to our case. ⁽⁹⁾ HCC is a heterogeneous tumor with variable gross and microscopic appearances. It can be classified based on the gross appearance into vaguely nodular, expanding nodular, multinodular confluent, nodular with perinodular extension and

infiltrative types. Infiltrative type is associated with worse prognosis. ⁽⁴⁾ An additional characteristic feature of HCC has been found to be its frequent occurrence in the form of multiple nodules. ⁽⁹⁾ The classical histomorphological features of HCC include well vascularized tumors with wide trabeculae (> 3 cells), prominent acinar pattern, small cell changes, cytologic atypia, mitotic activity, vascular invasion, and absence of Kupffer cells and the loss of the reticulin network. The most frequent histologic growth patterns are trabecular-resembling normal liver tissue which was seen in our case, pseudo-glandular or acinar. Bile production may be frequently observed. Mallory-bodies and pale bodies may also be found. ⁽⁹⁾ Clinically, alpha-fetoprotein (AFP) is the tumor marker for HCC. However, it has limitations in terms of sensitivity and specificity. AFP levels greater than 20 ng/mL, along with lower but slowly increasing levels, are serious indicators for HCC. Levels more than 200 ng/mL are highly suspicious for diagnosis of HCC if imaging is positive. However, AFP levels do not correlate very well with the size of HCC. ⁽¹⁾ On gray-scale ultrasound, hemangiomas are usually hyperechoic. Hemangiomas are occasionally hypoechoic, especially if the liver is fatty, or shows mixed echogenicity. Fast-filling hemangiomas often display complete homogeneous enhancement in the arterial phase without central fill-in pattern on CT and MR imaging and therefore the diagnosis of hemangioma can be uncertain. ⁽³⁾ Hence, although few recent diagnostic approaches for HCC are based on radiological assessment, imaging techniques falter in some situations, like in our case and hence histopathology assessment becomes mandatory for the diagnosis of all equivocal lesions. Imaging by itself has been found to be insufficient for the diagnosis of well-differentiated HCC. Biopsy offers advantage over imaging as comparison with non-lesional liver tissue

provides essential information, particularly for the diagnosis of well-differentiated HCC. ⁽⁴⁾ Tumor histopathology also plays multiple other important roles such as distinguishing from other lesions, prognostication and influencing treatment decisions, which cannot be substituted by imaging techniques or tumour markers. Assessment of histological features in tumour resection specimens has also been shown to predict recurrence and metastatic potential and thus indicate the need for salvage transplantation. ⁽⁴⁾

Conclusions

Although the diagnosis of hepatocellular carcinoma (HCC) based on non-invasive approaches has been suggested, evaluation of histopathology is still indispensable as pathology not only allows for a definitive diagnosis but also provides significant prognostication information. ⁽⁷⁾ Additionally, understanding the correlation of patients' prognosis with their histopathological characteristics also helps establish a personalized management strategy for each individual. ⁽⁸⁾ We highlight a clinically and radiologically diagnosed case of hepatic hemangioma which was ultimately diagnosed as hepatocellular carcinoma after histopathological examination, thereby highlighting the importance of histopathological assessment in diagnosis of HCC.

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