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Case Report

Steato-hepatitic HCC with cystic degeneration mimicking as hydatid cyst

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ABSTRACT

Hepatocellular carcinoma is 6th most common malignancy and 4th most common cause of cancer related mortality worldwide. Chronic viral hepatitis. Non-alcoholic fatty liver disease, heavy alcoholic consumption leading to chronic liver disease and cirrhosis. Which can eventually lead to hepatocellular carcinoma. Here we are presenting a case of steatohepatitic variant of HCC with cystic degeneration mimicking as Hydatid cyst in radiology. This case highlights the importance of histopathological examination and immunohistochemistry role in accurate diagnosis.

1. Introduction

Hepatic carcinomas have a wide range of histomorphological patterns, such as conventional, clear cell, macrotrabecular variant, fibrolamellar, sarcomatoid, schirrhous, lymphocyte rich, steatohepatotic and undifferentiated HCC. The original definition of Steatohepatitic-HCC was that it had the typical characteristics of steatohepatitis, including at least 5% macrovesicular steatosis, at least mild intratumoral inflammation with neutrophils or lymphocytic, ballooned hepatocytes, Mallory-Denk bodies, and pericellular fibrosis. The percentage of tumors with steatosis that were eligible for SH-HCC was decided as 50%.[1]

This histological variant of hepatocellular carcinoma (HCC) which has been recognized by the WHO, in which tumor cells have histologic features that resemble nonneoplastic steatohepatitis, arises in the setting of both nonalcoholic as well as alcoholic steatohepatitis, and it Constitutes 5-20% of hepatic carcinoma. Males are affected more commonly at 6^{th}- 7^{th} decade.

Possible etiology include those that causes steatohepatitis such as obesity, diabetes, hypertension, dyslipidemia and alcohol.

It may also exhibit in the absence of non-alcoholic steatohepatitis or metabolic syndrome.

Hepatocellular carcinoma subtypes are important for two main reasons. Firstly, different histomorphological subtypes of hepatocellular carcinoma have their own course of progression and prognosis. For example, when SH-HCC is well differentiated tumor, which may resemble conventional steatohepatitis or benign lesions of liver such as steatosis, inflammation and benign lesions like focal nodular hyperplasia, regenerative nodules and adenomas.[2,3] The second important reason is to recognize HCC subtypes to provide more appropriate care to patients.

HCC with cystic degeneration is a rare manifestation.[4] Various mechanisms and theories have been proposed for cystic changes in HCC, which includes arterial thrombosis formation, inflammation, rapid tumor growth, and androgen therapy, but the exact mechanisms has not been explained.[5] Few authors suggested that it involves immune-related mechanisms, in which interleukin-

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18 induces T lymphocytes and natural killer cells to release gamma interferon, resulting in cell-mediated tumor lysis.[6]

Inflammatory response due to tumor necrosis associated with infiltration by leukocytes or massive lymphoid infiltration have been reported as an evidence in pathology.[7]

Tapeworm causes two types of diseases, taeniasis and cysticercosis. Taeniasis is an intestinal infection caused by eating improperly processed meat such as pork and beef. This causes pain abdomen, diarrhea, constipation when tapeworm is fully developed in the intestine.

Cystecercosis is caused by ingesting food contaminated by eggs of pork tapeworm. The eggs are passed through feces of infected person, which contaminates the soil and water. The larvae develop in muscles, skin, eyes and brain (neurocysticercosis).

Ultrasound / CT scan reveal cysts with septations showing double wall sign (cyst wall layers with pericyst and endocyst), snowstorm sign (due to movement of scolices within the cyst fluid), waterlily sign (floating of membranes due to detached endocyst / daughter cyst).

2. Case Discussion

60 years old male patient presented with pain abdomen to the OPD.

Patient was evaluated further revealing LFT, RFT were in normal limits.

Viral screening was negative, Electrolytes were normal. Hemogram showed mild anaemia (hemoglobin-8.90gm/dl).

Patient was evaluated furthermore where a CT scan abdomen was done revealed a well-defined exophytic oval cystic lesion with multiple irregular septations measuring 5x7.2x7.8cm (APx TRxCC), noted arising from segment II and III of left lobe of liver.

So, a complex cyst in liver -likely hydatid cyst with large irregular shaped daughter cyst occupying the other cyst was suggested. So, the patient was planned for laproscopic cystectomy.

On gross a globular soft tissue was received measuring 8.5x7x5cm. Cut section revealed a multiloculated cystic cavity with semitranslucent and jelly like material. Peripheral rim of liver tissue noted with yellowish parenchyma.

On microscopy the sections from liver parenchyma showing extensive steatotic change accounting upto 90-95% with ballooned hepatocytes. Vascular invasion and capsular invasion not seen.

Scattered unpaired arteries noted. Lobular Lymphocytic inflammation noted. Portal tract not seen and lamellated membranes or Hooklets of hydatid cyst not seen. On immunohistochemistry the hepatocytes were diffusely positive for CK and Hep-ar. Hence concluded as steatohepatitic variant of Hepatocellular carcinoma with cystic change.

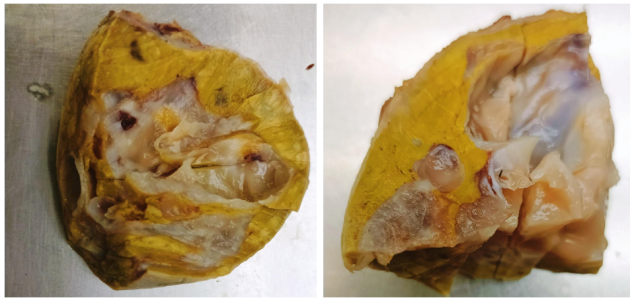

Figure 1: Gross images of liver

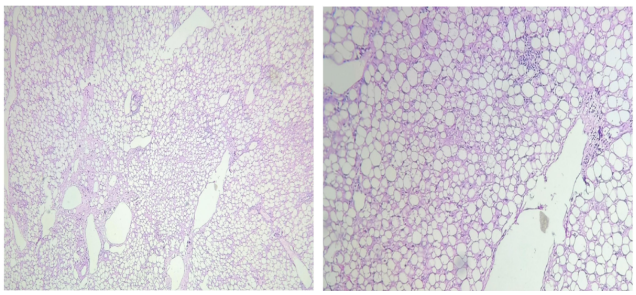

Figure 2: Histomorphology of liver sections

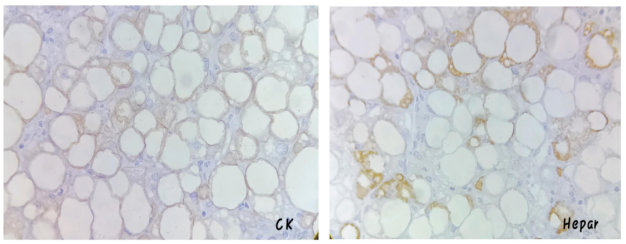

Figure 3: Immunohistochemistry

3. Discussion

Patients presenting with chronic liver disease, HCC can be easily diagnosed without histological confirmation due to typical vascular patterns on CT and MRI, due to recent advances in imaging technology and increased interpretation and follow-up of patients with high-risk features.[8] On another aspect where unusual radiological findings of HCC are difficult to diagnose by imaging alone, it needs histopathological evidence. Thus, radiological detailing is very important when clinicians encounter cystic lesions of liver associated with chronic liver disease, such as cirrhosis. As in the present case, distinguishing between cystic lesions of the liver and cystic degeneration of HCC can be difficult if it does not have its own key radiological features. Inspite of the fact cystic degeneration in HCC is rare, its characteristic radiologic pattern has been reported: which is an irregular, multilocular lesion with hypoattenuation and peripheral ring enhancement.[9]

The imaging pattern is thought to be related to the pathologic features of central necrosis and surrounding residual malignancy. [10] In addition, the imaging findings of a cystic tumor of the liver are similar to those of peliotic HCC in terms of multisite and peripheral enhancement. A thin septum and variable calcification are strongly suggestive of a cystic tumor of the liver rather than classic HCC. [11]

In the current case, as peripheral enhancement was not observed, but multiloculation and septations were observed. Background liver was non-cirrhotic and appeared hypointense on CT scan. Malignancy was not suspected and in view of septations and hydatid cyst was suggested.

In cases like these histopathological examination turns out to be crucial in concluding the diagnosis. Due to absence of lamellated membranes and protoscolices, parasitic infection was ruled out. On further examining extensive steatosis (macrovesicular) accounting to 90-95%, unpaired arteries, lack of portal tracts raised the suspicion of malignancy.

Further, for confirmation immunohistochemistry was helpful. The tumor expressed positive for CK and Hepar. Confirming hepatocellular carcinoma and considering the criteria that is >50% of steatosis in tumor, steatotic HCC was concluded.

These kind of cases highlights the importance of histopathological examination and clinico-radiological correlation. Because it changes the course of treatment for the patient as well as prognosis. Knowing these subtypes and their imaging characteristics may allow the radiologist to suggest their presence.

4. Source of Funding

None.

5. Conflict of Interest

None.

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