Case Report

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Hepatocellular Carcinoma- Sarcomatoid Variant: A Rare Occurence

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Abstract

Background: Primary liver cancer is the second most common cancer in Asia, hepatocellular carcinoma being the most common histological type. Hepatocellular carcinoma with sarcomatoid features and osteoclast like giant cells is a rare malignancy and has higher risk of metastasis as compared to usual Hepatocellular carcinoma. *Case Description:* We recently encountered an autopsy case of cirrhotic liver with sarcomatoid variant of Hepatocellular carcinoma in a 59 year old male. Macroscopically, it presented as a grey white to grey yellow ill defined nodule with central necrosis and surrounding micronodular cirrhotic changes. Microscopically, tumor predominantly composed of two cell types were noticed- classical hepatocellular carcinoma with atypical hepatocytes and pleomorphic spindle cells with frequent mitosis and multinucleated giant cells. As the tumor had both epithelial and mesenchymal differentiation in the same lesion, the diagnosis of sarcomatoid variant of hepatocellular carcinoma was made. *Literature Review*: Sarcomatoid variant of carcinoma has to have both epithelial and mesenchymal differentiation in the same lesion. Occasionally when the tumor is fully composed of malignant spindle cells, it is difficult to distinguish from various primary sarcoma and has to be confirmed by immunohistochemical staining Clinical relevance: The prognosis of the sarcomatoid variant of Hepatocellular carcinoma is unfavourable compared with classical Hepatocellular carcinoma which could be attributed to aggressive intrahepatic spreading and frequent metastasis. Histopathological study is the only effective diagnostic tool for confirmation.

Keywords: Hepatocellular Carcinoma; Sarcomatoid; Osteoclast Like Giant Cells.

Introduction

Primary liver cancer is the second most common cancer in Asia, hepatocellular carcinoma being the most common histological type [1]. Sarcomatoid variant of Hepatocellular Carcinoma is a rare variant comprised of malignant spindle cells in varying proportions. In the liver, the incidence of spindle cell HCC has been found in only 1.8% of surgically resected HCCs and 3.9-9.4% of autopsy cases of HCC [2]. When such sarcomatoid features are prominent, the tumour is called Sarcomatoid HCC.

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The 2010 World Health Organisation classification of gastrointestinal tumors classifies Sarcomatoid HCC under special types of carcinoma [1]. They have been reported in many organs including the esophagus, upper aerodigestive tract, thyroid, uterus, lung, breast, stomach and gall bladder [2].

Here we report a recent case of sarcomatoid HCC in an autopsy specimen with review of relevant literature.

Case Report

A 59 year old male patient was admitted to the hospital with complaints of abdominal distension, epigastric discomfort, pedal edema since one month. He was a chronic smoker and alcoholic for past 30years. On examination, abdominal distension with bilateral pedal edema was noted. Shifting dullness was present. Organomegaly could not be

appreciated.

Laboratory test results were as follows: Hb%- 10.8g%, PCV-31.6%, Total protein- 7.4g/dl, Serum albumin- 2.6g/dl, Total bilirubin-5.8mg/dl, Direct bilirubin-2.6mg/dl, SGOT, SGPT, ALP- within normal limits.

Urea and Serum creatinine were slightly above the normal range. However, CECT KUB revealed no detectable abnormalities.

The viral markers for Hepatitis B and Hepatitis C were not done.

Utrasound abdomen showed cirrhotic liver with ill defined heterogenous lesion involving the right lobe of liver measuring 5.8 x 5cm, suspicious of Hepatocellular Carcinoma. Portal venous thrombosis and splenomegaly were the other notable findings that were detected.

Patient expired before other investigations could be done and was sent for autopsy examination. It revealed 1.5litres of ascitic fluid in the peritoneum with cirrhotic changes in the liver. Also an ill defined nodule was noted in the right lobe of the liver. The specimen was then sent to the laboratory for histopathological examination.

Pathological Findings

The specimen was sent in 3 pieces, largest piece measuring 12x8x2.5cm contained an ill defined nodule measuring 5.5 x 4.5cm. Cut section of the nodule showed non encapsulated expansile grey-yellow to grey white solid mass with central necrosis (Figure 1). Surrounding non tumorous liver showed micronodular cirrhotic changes.

Microscopically, two tumour cell types were seen. One area showing features of classical hepatocellular carcinoma with atypical hepatocytes arranged in sheets and microtrabecular pattern. These cells have increased nucleo cytoplasmic ratio, large pleomorphic hyperchromatic nuclei, few of them showing prominent nucleoli with moderate to abundant granular eosinophilic cytoplasm. Edmonson-Steiner's nuclear grade of grade III was considered (Figure 2).

Other area exhibited sarcomatoid pattern of growth where malignant spindle cells are arranged in syncitial sheets and storiform pattern. These cells have large irregular vesicular nucleus, large prominent nucleoli (Figure 3). Numerous atypical mitotic figures and osteoclast like giant cells were seen (Figure 4). Surrounding area showed extensive necrosis, fibrous stroma showing hyalinization at places, chronic inflammatory cell infiltrate and congested blood vessels.

Sections studied from tumor free liver parenchyma showed marked chronic periportal hepatitis and moderate fibrosis.

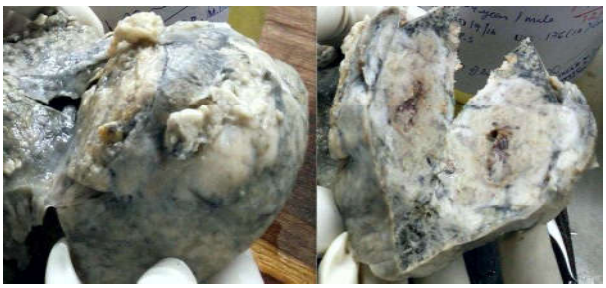

Fig. 1: Ill defined macronodule measuring 5.5x4.5cm with extensive central necrosis

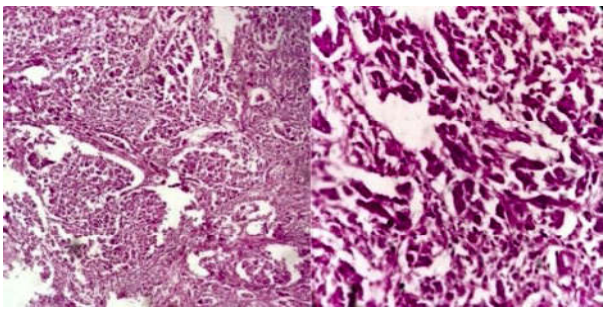

Fig. 2: Tumor cells showing classical variant of Hepatocellular carcinoma

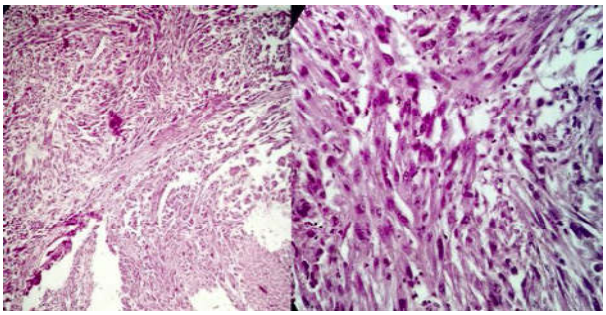

Fig. 3: Tumor cells showing spindle cell differentiation

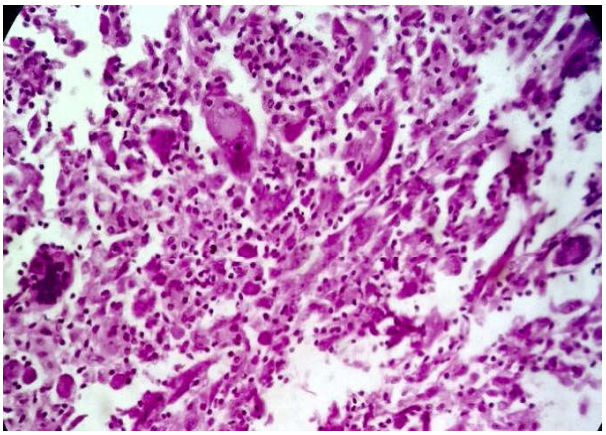

Fig. 4: Osteoclast like giant cells

Discussion

Carcinomas with spindle cell components are unusual neoplasms and have been referred to using various terms such as spindle cell carcinoma, sarcomatoid carcinoma, pseudosarcoma and carcinosarcoma. Clinically, HCCs with sarcomatous appearance do not differ from ordinary HCC in incidence regarding age and sex distribution [1].

By definition, the sarcomatoid variant of carcinoma has to have both epithelial and mesenchymal differentiation in the same lesion [3]. Occasionally when the tumor is fully composed of malignant spindle cells, it is difficult to distinguish from various primary sarcoma and has to be confirmed by immunohistochemical staining. However considering the rarity of these tumours and paucity of literature, whether a sarcomatous component with specific lineage will influence the clinical course remains unclear [3].

The pathogenesis of the sarcomatoid appearance of hepatic carcinoma has not been thoroughly studied. Several hypotheses have been reported in the literature that includes: 1) transdifferentiation or dedifferentiation from the original carcinoma cells, 2) biphasic differentiation from pluripotent stem cells, 3) metaplastic process of carcinoma, and 4) redifferentiation of immature multipotent carcinoma cells transformed from carci-noma cells [3].

Literature also suggests that sarcomatoid change is more frequent in HCC with repeated chemotherapy or transarterial chemoembolisation [1]. However in this case, patient had not received any treatment and hence that possibility can be safely ruled out.

Sarcomatoid HCC with multinucleated giant cells is a rare occurrence. It has been reported in various other organs including pancreas, thyroid, lung, breast and salivary glands. These osteoclastic giant cells are considered reactive histiocytic cells rather than true malignant tumor cells [4].

The prognosis of the sarcomatoid variant of HCC is unfavourable compared with classical HCC which could be attributed to aggressive intrahepatic spreading and frequent metastasis [3]. Histopathological study is the only effective diagnostic tool for confirmation.

The present sarcomatoid hepatocellular carcinoma with osteoclast-like giant cells is a rare tumor of the liver. These tumors have areas of classic liver cell carcinoma and a sarcomatous tumor with multiple osteoclast like giant cells. Analogous features might be observed in similar tumors from different sites. As sarcomatoid variant of HCC has unfavourable prognosis, histopathological confirmation of diagnosis plays an important role in further management.

Abbreviations

HCC: Hepatocellular carcinoma

CECT-KUB: Contrast enhanced computerized tomography- Kidney Ureter Bladder

SGOT: Serum glutamic oxaloacetic transaminase

SGPT: Serum glutamic pyruvic transaminase

ALP: Alkaline phosphatase

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