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Microfilariae in Cytological Smears of Hepatocellular Carcinoma

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To the Editor,

Filariasis is a major public health problem in tropical countries like India, with *Wuchereria bancrofti* (*W. bancrofti*) being the most common filarial infection accounting for about 95% of the total filarial infections.¹ The conventional diagnosis of filariasis rests on the presence of microfilariae in peripheral blood smear, however incidental detection of microfilariae in various cytologic specimens have also aided in the diagnosis of unsuspected cases.² Microfilariae have been reported in fine needle aspiration cytology (FNAC) of various organs, but very rarely in liver.²⁻⁴ To the best of our knowledge, not more than 4 cases of microfilariae in liver have been reported and in only one of the cases microfilariae were coexisting with the malignant neoplasm in liver.²⁻⁴ We report one more case of microfilariae coexisting with hepatocellular carcinoma detected on cytology.

A 35-year-old man presented to our hospital with history of mass in the abdomen and loss of appetite over a period of 5 months. He had continuous throbbing pain in the right hypochondriac area for the last 2 months. Physical examination revealed jaundice, pallor and tender hepatomegaly. Liver was palpable 6 cm below the right costal margin. Laboratory investigations revealed haemoglobin of 8.4 gm/dl, total leucocyte count - 10.2×10^9 /L, with 7% eosinophils. Total serum bilirubin was 14 mg/dl. Alanine aminotransferase and aspartate aminotransferase were 52 U/L and 72 U/L respectively. Alkaline phosphatase was 504 U/L, prothrombin time was prolonged, and HBsAg was negative. Ultrasound examination of the abdomen revealed a large solitary hyperechoic mass in the liver measuring 10x8x6 cm with ill defined margins, dilatation of common bile duct and minimal ascitis. Clinical and radiological diagnosis of hepatic tumour was offered and patient was referred for ultrasound guided FNAC. The aspirated material was subjected

for both wet and dry smears as well as for cell block. Microscopic examination of the smears showed pleomorphic tumour cells with few polygonal cells, arranged in loose clusters and trabecular pattern. Peripheral and transgressing endothelial cells were noted in some tumour clusters. Nuclei of the tumour cells were large and centrally placed, having unevenly distributed coarse chromatin with irregular nuclear borders. More than one prominent macronucleoli were noted in some cells. Intracytoplasmic bile pigment was noted at places. Many singly scattered stripped atypical nuclei and multinucleated tumour giant cells were noted against a hemorrhagic background. Amidst these tumour cells was noted a sheathed microfilaria of *W. bancrofti* having multiple, coarse discrete nuclei extending from head to tail, except in small terminal portion of the caudal end (Fig.1). Based on the above findings, a diagnosis of malignant tumour suggestive of hepatocellular carcinoma with microfilariae of *W. bancrofti* was offered. The peripheral blood smear did not reveal any microfilariae. Cell block section revealed features of hepatocellular carcinoma showing tumour cells in

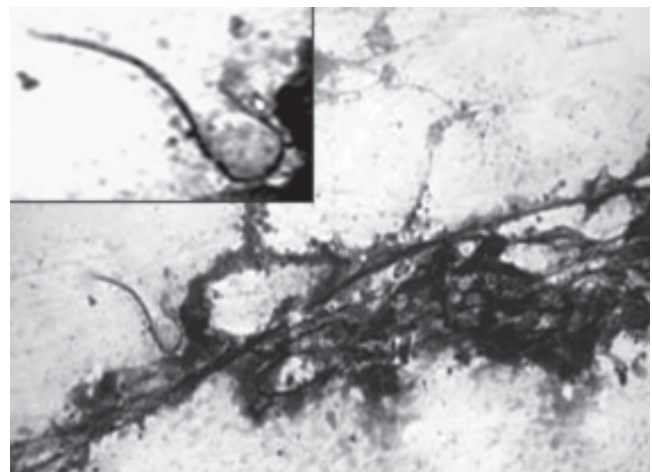


Fig.1 : Microphotograph of FNAC smear showing tumour clusters with endothelial transgressing and microfilaria (Pap, x 200). Inset showing microfilaria (Pap, x 400).

trabecular pattern with sinusoid like spaces lined by flattened endothelial cells. Microfilariae were not seen in the cell block section. Anti-filarial therapy in the form of hetrazan was administered. Alpha fetoprotein assay was advised and the patient was referred to cancer centre for further treatment. However the patient refused the treatment and died after 6 months.

Microfilariae have been reported in almost all tissues but very rarely in the liver. A literature review revealed only 4 cases of microfilariae in liver aspirate.^{2,4} Reddy et al³ reported 2 such cases whereas Agarwal et al² reported a case of microfilariae in a cavernous hemangioma of the liver. There was a single case report of microfilariae in liver associated with metastatic pancreatic adenocarcinoma.⁴ In our case, microfilariae were coexisting with primary hepatic malignancy. A review of available literature failed to reveal any instance of microfilariae in an aspirate from primary hepatic malignancy.

In most of the reported cases association of microfilariae have been seen in tumours of lymph node and lymphatics and malignant effusions of pleural and

ascitic fluid.¹ Occasionally they have been reported in association with primary malignant tumours of thyroid,¹ testis,¹ pancreas⁴ and urinary bladder.¹ These authors were of the opinion that rich blood supply in tumours could encourage the concentration of parasites at tumour site and subsequent rupture of these blood vessels may lead to haemorrhage and release of parasites into the tumour tissue. Thus the presence of microfilariae in neoplasm is an incidental finding.¹ Similar explanation may hold good in our case for finding microfilariae in hepatocellular carcinoma.

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