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RESEARCH ARTICLE

ULTRA SOUND GUIDED FINE NEEDLE ASPIRATION CYTOLOGY OF LIVER – FOUR YEAR STUDY

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Abstract

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INTRODUCTION

Liver is involved in many non-neoplastic and neoplastic diseases .The diagnosis and management of various hepatic mass lesions is a common clinical problem and their appropriate clinical management depends on accurate diagnosis.^[1] Here, FNAC can play a major decisive diagnostic role and performing ultrasound guided FNA helps to diagnose cases with 90-95% accuracy and minimizing the requirement of biopsy^[2]. The present study is being conducted to evaluate the role of Ultrasound guided FNA and to look for spectrum of diseases affecting liver.

Material & Methods :

A total of 212 image guided intra abdominal FNAC were done, of which 91 (42.92%)cases were performed on liver lesions, diagnosed clinically and radiologically, with normal range of prothrombin time index over a period of four years From Jan 2010 to Dec 2013 . Patients with bleeding diathesis, suspected hydatid cyst, hemangioma or already diagnosed cases were excluded from the study. A disposable spinal needle (22/23 gauge), connected to 10 ml plastic syringe was used.

The smears were stained by Papanicolaou, May-Grunwald-Giemsa (MGG), and Hematoxyline & Eosin stain (H&E).

Observation and results :

During the study period out of 212 image guided abdominal FNAC ,91(42.92%) cases were performed on liver lesion. The age ranging from 20 - 88 years. The maximum number of cases were in between 50-69 years of age showing a male predominance with a male to female ratio of 3.1:1.

Among 91 cases, it was conclusive in 83 cases (91.2%) aspirate. the distribution of total aspirates are given in (Table: I) out of total aspirate benign were 4 cases (4.3%), malignant were 79 cases (86.8%) and non representative samples were 8 cases (8.9%) as it contains only blood and scattered hepatocytes.

TABLE-1: Distribution of liver aspirates

Aspirates	No of cases	Percentage %
Benign aspirate	4	4.3%
Malignant aspirate	79	86.8%
Inadequate	8	8.9%
Total	91	100%

TABLE-2: Different types of malignant tumors diagnosed

Malignant lesions	No of cases	Percentage
Metastatic adenocarcinoma	47	59.5
Squamous cell carcinoma	09	11.4
Small cell carcinoma of lung	06	7.6
Neuroendocrine	01	1.3
Hepatocellular carcinoma	12	15.1
Cholangiocarcinoma	04	5.1
Total	79	100

Metastatic tumors were the most common among the malignant liver lesions and constituted 63 cases (79.8%)cases. The different types of metastatic lesions were adenocarcinoma 47 cases (59.5%) (Fig:1), followed by squamous cell carcinoma 9 cases (11.4%) (Fig:2), and 6 cases (7.6%)of small cell carcinoma of lung (Fig:3), and one case(1.3%) of neuroendocrine tumor.

The primary for metastatic adenocarcinoma are as follows Adenocarcinoma NOS 27 cases(57.4%), GIT 13 cases (27.6%), and Breast 7 cases (15%)

The commonest primary malignant lesion was Hepatocellular carcinoma 12 cases(15.1%), and Cholangiocarcinoma 4 (5.1%)cases. The hepatocellular carcinoma was further differentiated into 3 grades. Grade I – 2 cases (17%) (Fig:4), Grade II – 6cases (50%)(Fig:5), - and Grade III – 4 cases (33%) (Fig:6).

TABLE-3:-Different grades of hepatocellular carcinoma

GRADES OF HCC	NO.OF CASES	Percentage
Grade I	2	17%
Grade II	6	50%
Grade III	4	33%
TOTAL	12	100%

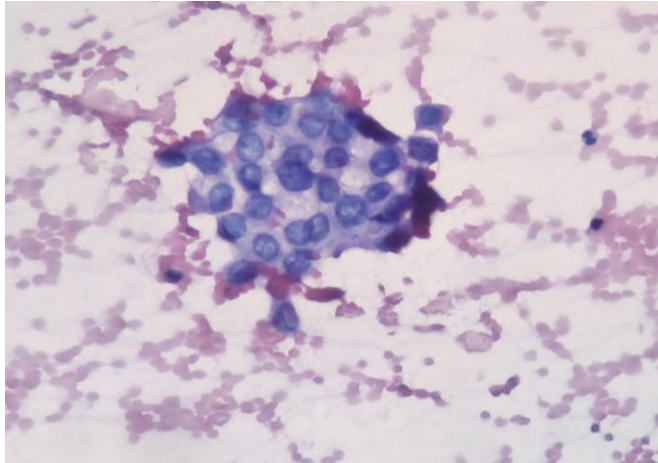


Fig. 1 : Metastatic adenocarcinoma - showing a well formed gland or acini (H&E, x 40).

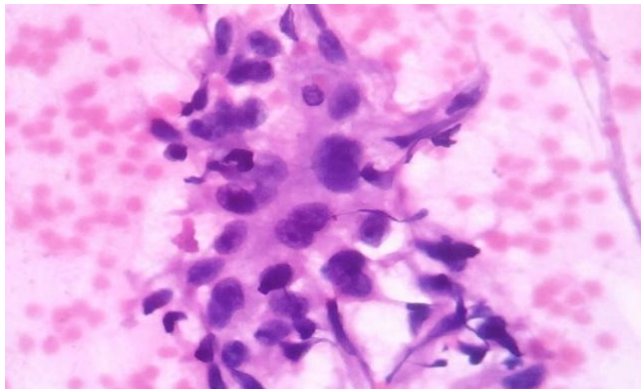


Fig. 2 : Metastatic squamous cell carcinoma – large pleomorphic squamous cells in syncytial pattern (H&E , x 40)

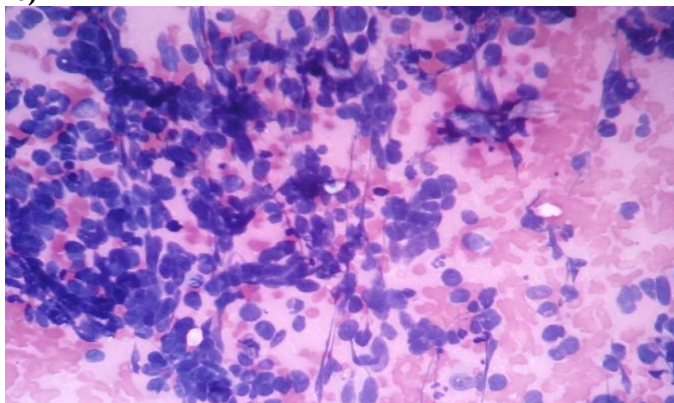


Fig :3 Metastatic small cell carcinoma of lung .(H&E, X40)

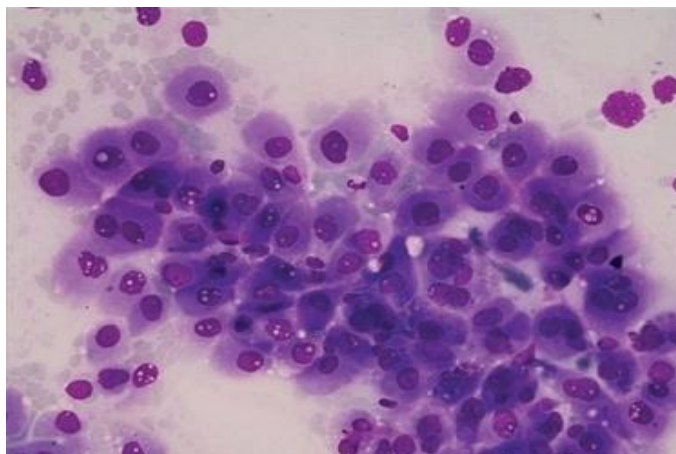


Fig :4 - Well differentiated HCC- uniform tumour cells with N/C ratio slightly higher than normal hepatocyte and few binucleate cells enveloped by endothelial cells (H&E, x 400).

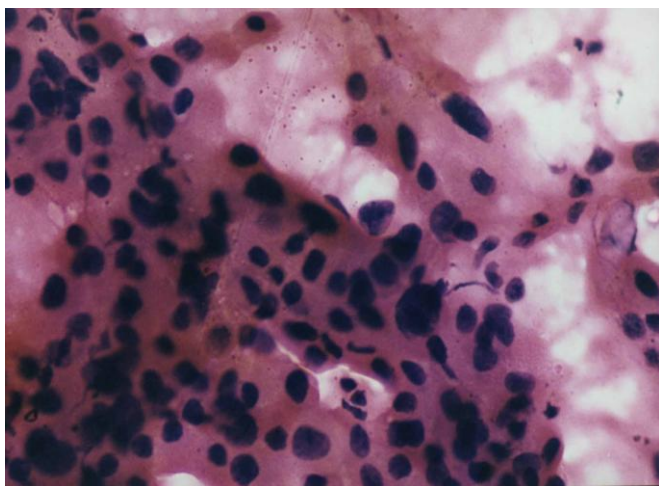


Fig. 5: Moderately differentiated HCC - cells with high N/C ratio, many lying singly and loosely grouped monotonous cells with multinucleated giant cells (H&E, x 400).

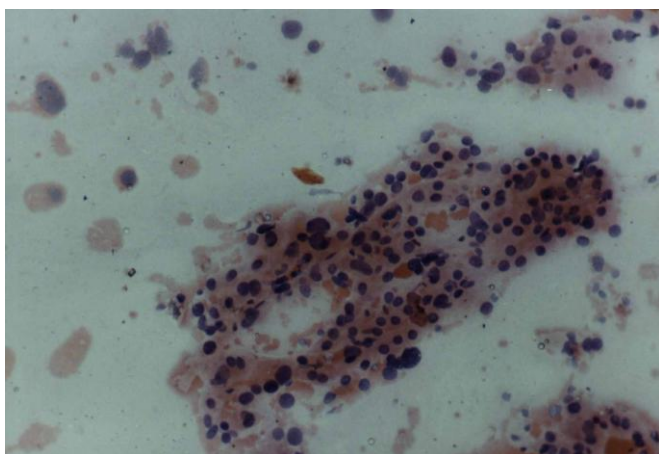


Fig. 6 : Poorly differentiated HCC - many naked nuclei, , hardly resembles hepatocytes (H&E, x 200).

Discussion :

FNAC is very useful procedure for the diagnosis of various hepatic lesions, if combined with image guidance, its utility further increases. It offers accuracy without major complications and minimal intervention at low cost.³

In this present study, diagnostic yield of 91.2% was in accordance with the observations which were made by Avinash M et al^[1], Goyal S et al^[2], Rasnia A et al^[4]

In this study malignant hepatic lesions 86.8% outnumbered the benign lesion of 4.3% , similar results were obtained by Avinash M et al also found 9.61% cases of benign and 80.76%cases were malignant and concordance with various studies^[1,2,3,5,6]

Among the malignant hepatic lesions majority of cases were metastatic 79.8% in origin followed by hepatocellular carcinoma 15.1% which is concordance with various studies^[1,2,3,5,6]. But Hemalatha AL^[7] et al found 44.4% cases of HCC as compared to metastatic hepatic lesion in 27.7%.Equal number of cases of HCC and metastatic lesion was observed by Ahuja A et al^[8].

We studied and evaluated the different features in different lesions as described by Ali et al^[9], and Tao et al^[10] to grade the HCC into grade I, II, III.

Adenocarcinoma is the most common metastatic malignancy.^[1,2,4,5,6] Cytological features of metastatic SCC were similar to those described by Kuo et al.

Conclusion :

USG-guided FNAC is a quick, safe, simple, cost-effective and accurate method for diagnosing hepatic lesions. It not only helps in differentiating between inflammatory, benign and malignant lesions, but also in categorizing different malignant lesions.Early diagnosis by guided aspiration minimizes further ancillary investigations and decreases the length of hospital stay.

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