



SPECTRUM OF ULTRASOUND GUIDED FINE NEEDLE ASPIRATION CYTOLOGY OF LIVER LESIONS IN A TERTIARY CARE HOSPITAL

Pathology

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ABSTRACT

Introduction: Fine needle aspiration cytology(FNAC) is a rapid, less invasive method that can be employed for pathological evaluation of both benign and malignant liver lesions. Late diagnosis and socio-economic status of patients in a hospital set up like this makes it difficult to operate or even go for a core needle biopsy. Therefore, a quick FNAC diagnosis saves valuable time and enables the clinician to plan treatment accordingly.

Aim: To study the spectrum of lesions involving the liver and its cytomorphological features in ultrasound guided FNAC. **Materials And**

Methodology: A retrospective study on USG guided FNAC of liver lesions diagnosed in the Cytology section between December 2023 to November 2024 were obtained. Prior to FNAC procedure a consent from every patient was taken along with a complete history and investigations. FNAC was performed under all aseptic precautions and smears were air dried and routinely stained by Giemsa and PAP stain. Diagnosis was based on cytological features. **Results:** Total 16 cases were reported for USG guided FNAC of liver lesions out of which 9 cases were diagnosed as metastatic carcinomatous deposits in liver, 4 cases as hepatocellular carcinoma, 1 case of liver abscess and rest 2 cases were reported as non diagnostic. **Conclusion:** In the present setup from this study it is felt that USG guided FNAC is a very useful in diagnosis of different liver lesions as the procedure is simple and safe. The results are obtained quickly without serious complications related to the procedure and among all liver lesions, malignant lesions were diagnosed more accurately when compared to non neoplastic lesions.

KEYWORDS

Fine needle aspiration cytology, Hepatocellular carcinoma, Adenocarcinoma, Liver abscess

INTRODUCTION

Liver lesions can be both neoplastic and non-neoplastic among which liver malignancy is one of the most common causes of death in adults and is also the most common site of metastasis in solid malignancies.¹ Ultrasound guided Fine needle aspiration cytology (FNAC) is a very useful procedure for the diagnosis of various hepatic lesions.⁴ It offers accuracy without major complications and minimal interventions at low cost.³ It also provides less discomfort to the patient with an added advantage of multiple aspirations at one sitting in the outpatient department.⁵

Late diagnosis and socioeconomic status of patients in a hospital set up like this makes it difficult to operate or even go for a core needle biopsy. Therefore, a quick FNAC diagnosis saves valuable time and enables the clinician to plan treatment accordingly.² In the literature, the sensitivity of FNA of liver neoplasms ranges from 92 to 96%.³

Aim:

To study the spectrum of lesions involving the liver and its cytomorphological features in ultrasound guided Fine Needle Aspiration Cytology (FNAC).

MATERIALS AND METHODS:

The retrospective study was done at Department of Pathology, Assam Medical College and Hospital, Dibrugarh, Assam over a period of 1 year from December 2023 to November 2024. A total of 16 cases of Ultrasound guided FNAC of liver lesions were included.

Each case was evaluated with a brief clinical history, physical examination and appropriate investigations. Ultrasound guided FNAC was performed using a needle attached to 10 ml syringe with 20 to 22 gauge needle attached to a plunger under all aseptic precautions and the aspirated smears were numbered with a specific case number then air dried and routinely stained by Giemsa and PAP stain.

All the stained smears were assessed and diagnosis was determined based on cytological features and clinical presentation. The data obtained was analyzed systematically.

RESULTS:

Table 1: Distribution of FNAC diagnosis of 16 cases of liver lesions with percentage.

Diagnosis	Number of Cases	Percentage
Metastatic Adenocarcinoma	07	43.7%
Hepatocellular Carcinoma	04	25%
Metastatic Melanoma	01	6.2%
Metastatic Cholangiocarcinoma	01	6.2%

Liver abscess	01	6.2%
Non Diagnostic	02	12.5%

Among the 16 cases, 13 cases were malignant lesions, 2 cases were non diagnostic, 1 case is of a liver abscess. Out of 13 malignant cases 7 cases were diagnosed as Metastatic adenocarcinoma, 4 cases were of Hepatocellular carcinoma, 1 case of Metastatic Melanoma and 1 case of Metastatic cholangiocarcinoma.

Age range of the patients with liver lesions, were from 40 to 77 years in which nearly 56.25% were females and 43.75 % were males.

Metastatic tumours were the most common among the malignant lesions. The commonest primary hepatic lesion was hepatocellular carcinoma.

Table 2: Age and Sex distribution of each case with Diagnosis.

SL No.	Sex	Age(years)	Diagnosis
1.	Female	55	Hepatocellular Carcinoma
2.	Male	65	Metastatic Adenocarcinoma
3.	Female	55	Metastatic Cholangiocarcinoma
4.	Male	58	Metastatic Adenocarcinoma
5.	Male	48	Metastatic Adenocarcinoma
6.	Female	60	Metastatic Adenocarcinoma
7.	Male	40	Liver Abscess
8.	Female	46	Non Diagnostic
9.	Male	50	Metastatic Adenocarcinoma
10.	Female	57	Metastatic Melanoma
11.	Female	51	Metastatic Adenocarcinoma
12.	Male	62	Hepatocellular carcinoma
13.	Female	76	Hepatocellular carcinoma
14.	Female	58	Metastatic Adenocarcinoma
15.	Female	56	Non diagnostic
16.	Male	77	Hepatocellular carcinoma

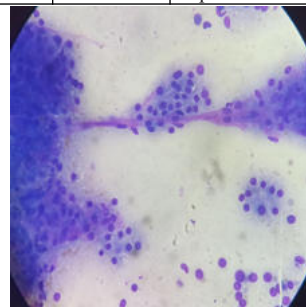
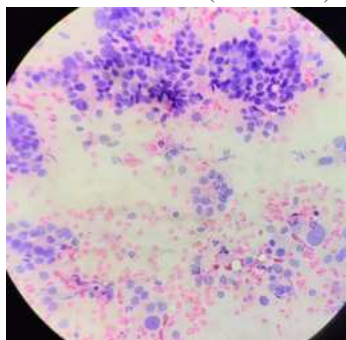
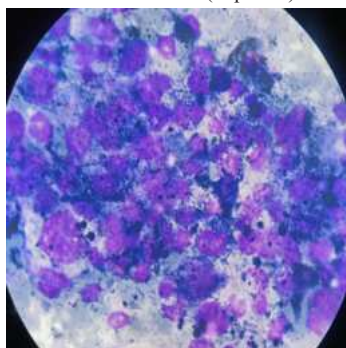
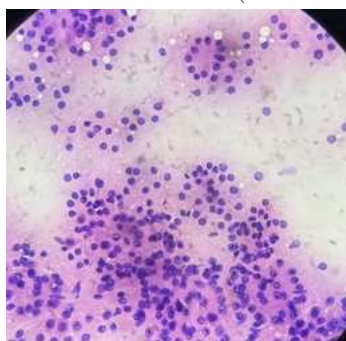
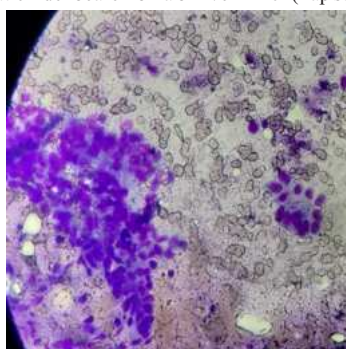
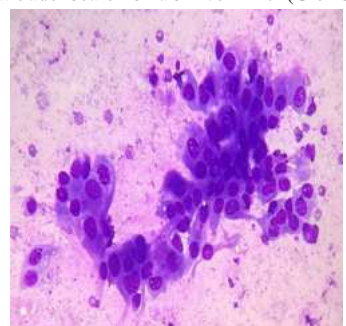


Fig 1: Hepatocellular carcinoma in 10 x(Giemsa stain)**Fig 2:** Hepatocellular carcinoma in 10x(Pap stain)**Fig 3:** Metastatic Melanoma of liver in 40x(Giemsa stain)**Fig 4:** Metastatic Adenocarcinoma of liver in 10x(Pap stain)**Fig 5:** Metastatic adenocarcinoma of liver in 10x(Giemsa stain)**Fig 6:** Metastatic cholangiocarcinoma of liver in 40x(Giemsa stain)**DISCUSSION:**

Mass lesions of liver are generally evaluated by Fine needle aspiration and it is especially useful in the investigation of non-neoplastic and neoplastic mass lesions of the liver. This was a retrospective study of total 16 cases of liver lesions diagnosed over a period of one year. Diagnosis was made based on cytological findings out of which most of the cases i.e. 13 cases were malignant, amongst which majority i.e. 9 cases were metastatic carcinomas, while there were 4 cases of primary hepatocellular carcinoma. The malignant lesions were seen most commonly between the age group of 50 to 77 years. Our findings were similar with the other studies done by Valecha et al., Rasania A et al. and Barbhuiya et al. where most cases of liver lesions were diagnosed as metastatic carcinomatous deposits followed by hepatocellular carcinoma and only few cases were diagnosed as benign lesions.^{1,2,6}

CONCLUSION:

From this study it is felt that USG guided FNAC can serve as a rapid, cost effective and valuable diagnostic tool which can help in segregating the benign from malignant cases and also Hepatocellular carcinoma from Metastatic carcinomatous deposits. Correlation with clinical, pathological and radiological findings may further aid in accurate diagnosis of the lesion and minimizing the biopsy procedure which is more traumatic with risk of hemorrhage. Among all liver lesions, malignant lesions were diagnosed more accurately when compared to non neoplastic lesions.

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