ORIGINAL RESEARCH PAPER VOLUME-6 | ISSUE-8 | AUGUST - 2017 | ISSN No 2277 - 8179 | IF : 4.176 | IC Value : 78.46

INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

EVALUATION OF ULTRASOUND GUIDED FNAC IN DIAGNOSIS OF HEPATOBILIARY LESIONS – OUR EXPERIENCE.

Radiodiagnosis

Rahul Ranjan M.D., DNB, Associate Professor, Department of Radiodiagnosis, Rama Medical College & Hospital, Mandhana, Kanpur - Corresponding Author

Supriya Katiyar M.D. Assistant Professor, Department of Pathology, Rama Medical College & Hospital, Mandhana, Kanpur

ABSTRACT

Aim – To evaluate diagnostic yield of ultrasound (USG) guided fine needle aspiration cytology (FNAC) of hepatobiliary lesions.
Material and method – Ultrasound guided fine needle aspiration cytology was done in 200 patients who presented with masses in liver, gall bladder or intra hepatic biliary tree.
Result – Among 200 lesions of hepatobiliary origin in which FNAC was done, cytological diagnosis was made in 164 (82%) cases.
Conclusion – USG guided FNAC of hepatobiliary lesion is a minimally invasive procedure of high diagnostic yield that can be used for diagnosis of hepatic and gall bladder lesions, thus avoiding open biopsy.

KEYWORDS:

Cytology, Fine needle aspiration cytology, Gall bladder, Hepato biliary, Liver, Ultrasound.

INTRODUCTION

Patients presenting with mass lesions of liver and gall bladder are common occurrence in tertiary care hospital. Especially the prevalence of gall bladder and biliary malignancy are common in central part of Uttar Pradesh along Gangetic Belt. FNAC serves as first line of pathological investigation after diagnosis of hepatobiliary mass lesion is made radiologically by ultrasound/ computed tomography (CT). These lesions in most cases are easily accessible to FNAC. It is important to establish primary or metastatic nature of the lesion and in case of later to comment upon probable site of primary tumor.[1, 2] Late diagnosis and poor socioeconomic status of patient makes it difficult to operate and go for open biopsy.[3] A quick FNAC diagnosis saves valuable time and enables the clinician to plan treatment accordingly. In this prospective study, we have evaluated diagnostic yield of such FNAC in hepatobiliary lesions.

MATERIAL AND METHOD

This prospective study was done between January 2016 till June 2017 in Rama Medical College, Kanpur. A total of 200 cases presenting with mass lesion of liver, gall bladder and central biliary tree diagnosed radiologically by Ultrasound / CT Scan were included in study with normal prothrombin time index. FNAC was done using 22/20 gauze needle/long spinal needle attached to 10 ml disposable syringe. The area was cleaned with antiseptic and during suspended respiration, needle was introduced percutaneously into the lesion under USG guidance. At least Six smears were made from aspirated material, Two of these were immediately fixed in 95% ethanol for 15 minutes and then stained with Hematoxylin and Eosin (H & E) stain, other two dry smears were stained by May - Grunwald Giemsa (MGG) stain. Periodic – Acid – Schiff (PAS), Mucicarmine (MC) and Hall's stain were done as required.

RESULT

FNAC was done in 200 patients. Mean age of patients was 40.5 +/- 10 Years. 55% cases were female and 45% cases were male. FNAC was conclusive in 164 cases (82%). Almost similar results were seen in previous studies[4,5] . The distributions of aspirate are given in Table 1. Out of total aspirates, 35 cases (17.5%) were benign, 121 cases (60.5%) were malignant and 36 cases (18%) were non representative as it contained only few scattered hepatocytes, blood or bile. 8 cases (4%) were suspicious of malignancy.

The carcinoma of gall bladder were commonest among malignant lesions followed by metastasis in liver. Among benign aspirates, cholecystitis was commonest finding.

Table 1 – Distribution of aspirates

Findings	Number of cases	Percentage
1. Benign aspirate		
a) Normal liver	3	1.5 %
b) Cirrhosis	3	1.5 %
c) Abscess	3	1.5%
d) Cholecystitis	15	7.5%
e) Xanthogranulomatous Cholecystitis	2	1.0%
f) Haemangioma	5	2.5%
g) Parenchymal diseases & granuloma	2	1.0%
h) Biliary cystadenoma	2	1.0%
2. Malignant aspirate		
a) Adenocarcinoma gall bladder with liver infiltration	29	24.5%
b) Adenocarcinoma gall bladder without liver infiltration	30	15.0%
c) Squamous cell carcinoma gall bladder	05	2.5%
d) Lymphoma gall bladder	02	1.0%
e) Liver metastasis	45	22.5%
f) Hepatocellular carcinoma	10	5.0%
3. Suspicious of malignancy	08	4.0%
4. Non representative		
a) Haemorrhage with few scattered hepatocytes	24	12.0%
b) Bile	12	6.0%

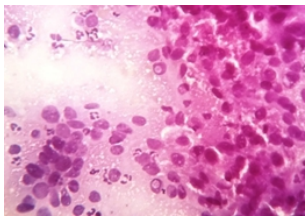


Fig 1a- H&E x400 Smears show moderately anisomorphic tumor cells with intranuclear vacuolations – hepatocellular carcinoma (HCC).

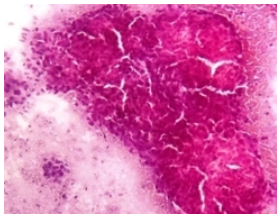


Fig 1b- H&Ex100- HCC showing Fragments of tumor cells traversed by endothelial cells

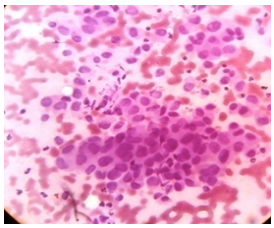


Fig 2a- Gall bladder adenocarcinoma- H&Ex400 Clusters and acini of tumor cells in a hemorrhagic background.

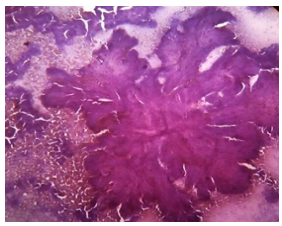


Fig 2b -Papillary adenocarcinoma of gall bladder H&Ex100- Smears show tumor cells disposed in papillaroid fragments, sheets, clusters, acinar pattern and scattered singly in a hemorrhagic background

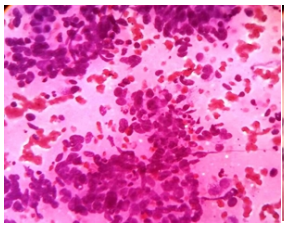


Fig 3- H&Ex100- Metastatic adenocarcinoma of liver with known primary in lung
Smears show clusters and acini of tumor cells in a hemorrhagic background.

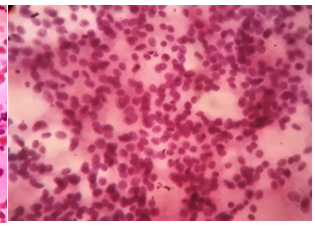


Fig 4 H&Ex400- GB lymphoma
Smears show dispersed population of medium to large sized atypical lymphoid cells.

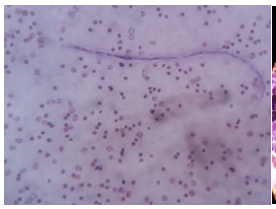


Fig 5 H&E x100- Hemangioma with microfilaria

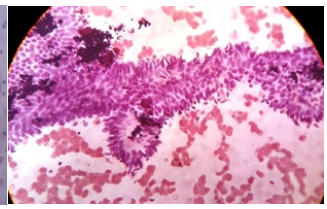


Fig 6 H & Ex400- Smears show fragments and clusters of tall columnar ciliated epithelial cells along with neutrophilic infiltrate in a hemorrhagic background- BILIARY CYSTADENOMA

DISCUSSION

FNAC is a very useful procedure for the diagnosis of various hepatobiliary lesions. It offers accuracy without major complications at low cost. The only absolute contra indication are marked haemorrhagic diathesis and suspected vascular lesion.[6,7] No complications were seen in our study. All cases were subjected to ultrasonography guided FNAC which has been reported to be safe, useful and accurate technique for making cytological diagnosis of hepatic masses.[8,9]

The patient's age ranged from 10 to 70 years with female predominance. The malignant lesions were more common in elderly age group.

The different features used in differentiating these lesions were cellularity, acinar pattern, trabecular pattern, hyperchromasia, prominent nucleoli, multiple nucleoli and atypical naked nuclei as described by Cohen et al.[10] The atypical naked nuclei were included as one of the important criteria for the diagnosis of hepatocellular carcinoma by Pedio et al9 as these were rarely seen in benign and metastatic conditions.

CONCLUSION

In the present study, it is felt that USG guided FNAC is a very useful procedure in making diagnosis of different hepatobiliary lesions as the procedure is simple and safe and result are obtained quickly.

ACKNOWLEDGEMENT

The authors are thankful to Mr. Mohan Chandra, Medical Transcriptionist, Department of Radio diagnosis, Rama Medical College for helping in preparing the manuscript and in data collection.

REFERENCE

1. Jambhekar NA, Saxena R, Krishnamurthy S, Bharadwaj R, Sheth A. Fine needle aspiration cytology of liver: An analysis of 530 cases. J Cytol. 1999;16:27–35.
2. Li ZY, Liang QL, Chen GQ, Zhou Y, Liu QL. Extra-gastrointestinal stromal tumor of the liver diagnosed by ultrasound-guided fine needle aspiration cytology: A case report and review of the literature. Arch Med Sci. 2012;8:392–7. [PMCID: PMC3361056] [PubMed: 22662017]
3. Barbhuiya MA, Singh TD, Poojary SS, Gupta S, Kakkar M, Shrivastav BR, et al. Gallbladder cancer incidence in Gwalior district of India: Five year trend based on registry of a regional cancer centre. Indian J Cancer. 2012;49:249–57.
4. Ho CS, Mc. Loughlin MJ, Tao LC, Blendis L, Evans WK. Guided percutaneous fine needle biopsy of liver. Cancer 1981;47: 1781-5.
5. Shah A, Jan GM. Fine needle aspiration cytology of the liver. A study of 518 cases. Journal of Cytology 2002; 19: 139-43.
6. Pinto MM, Arila NA, Heller CI, Criscuolo EM. Fine needle aspiration of the liver. Acta Cytol 1988; 32: 15-21.
7. Whitlach S, Nunez. C, Pitlik DA. Fine needle aspiration of the liver. A study of 102 consecutive cases. Acta Cytol 1984; 28:719-25
8. Das DK. Cytodiagnosis of hepatocellular carcinoma in fine needle aspirates of the liver, its differentiation from reactive hepatocyte and metastatic adenocarcinoma. Diagn Cytopathol 1999; 21 : 370-7.
9. Pedio G, Handolt U, Zobeli U, Gut D. Fine needle aspiration of the liver. Significance of hepatocytic naked nuclei in the diagnosis of hepatocellular carcinoma. Acta Cytol 1988; 32: 437-42.
10. Cohen MB, Haber MM, Holley EA, Ahm DK, Bottus K, Sitoloff AC. Cytologic criteria to distinguish hepatocellular carcinoma from nonneoplastic liver. Am J Clin Pathol 1991; 95 : 125-30.