ORIGINAL RESEARCH PAPER
Volume - 9 | Issue - 12 | December - 2020 | PRINT ISSN No. 2277 - 8179 | DOI : 10.36106/ijsr
INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

ROLE OF FINE NEEDLE ASPIRATION CYTOLOGY IN HEPATIC LESION: A PROSPECTIVE STUDY

Medical Science

Dr. Surbhi Sindhu Assistant Professor, Department Of Microbiology, Lord Buddha Koshi Medical College & Hospital, Saharsa.

Dr. Abhishek Anand* Assistant Professor, Department Of Pathology, Lord Buddha Koshi Medical College & Hospital, Saharsa. *Corresponding Author

ABSTRACT

Liver is a common organ of non- neoplastic and neoplastic mass. Fine needle aspiration cytology (FNAC) is one of the easy and very good technique in distinguishing between primary and metastatic malignancies. USG guided Fine needle aspiration was done on subjects referred to the department of pathology with a provisional clinical diagnosis of lump or mass lesion of liver from Lord Buddha Koshi Medical College and Hospital at Saharsa, Bihar. From March 2019 to February 2020 a total number of 40 suspected cases of liver disease were enrolled for study. The ultrasound finding were noted and correlated with cytological features. Among 40 cases 5 (12.5%) were benign, 29 (72.5%) were malignant, 4 (10%) were reported as inflammatory and in 2 (5%) cases inadequate sample were able to collected. In this study USG guided FNA is very much useful in diagnosis of hepatic lesion.

KEYWORDS

FNAC, USG, CT, Metastatic, Hepatic.

INTRODUCTION

Fine needle aspirate cytology (FNAC) is a diagnostic procedure used initially to investigate superficial lump or masses. It is one of the easy and very good technique in distinguishing between primary and metastatic malignancies. Modern imaging technique i.e ultra sonography, CT, MRI, have made FNAC possible for deeper lumps or masses in abdominal cavity like liver, gall bladder, lymph nodes, spleen, kidney, and the retro peritoneal tumors accessible to fine needle aspiration (FNA).[1]

The FNAC technique was first introduced by Kum in 1847 for the diagnosis of tumours, lumps and masses. It was an exploring needle with small sharp edge depression at its top. Now it has emerged as a versatile diagnostic tool for evaluating neoplastic and non-neoplastic lesions.[2]

The reason for its gaining popularity is because FNAC safe and simple procedure, patients discomfort is minimal due to non-surgical method, quick diagnosis, lack of complication, outdoor procedure, less expensive and rapid report. Considering the advantages of FNAC technique and fact that still much work is to be done is this field, an attempt is being made study to show the efficacy and importance of this procedure in the diagnosis of liver disease. FNAC is less demanding technology then surgical biopsy[3]. In this respect, it is suitable for practice in remote area places with scant resources. The low risk of complications is an additional advantage.

FNAC is used as a initial investigation of palpable mass either small or large in size, superficial or deep which may prove to be non-neoplastic or neoplastic some time with the correlation of histopathology and cell markers. The aim of the present study is the role of FNAC in the diagnosis of liver palpable or non-palpable lump/mass.

MATERIAL AND METHODS

A total of forty samples were collected by FNAC at department of Pathology, Lord Buddha Koshi Medical College and Hospital in Saharsa, Bihar during March 2019 to February 2020. USG or CT guided Fine needle aspiration was done on suspected cases of liver disease after all routine (hematological test like CBC, BT, CT PT, ESR biochemical test like LFT, KFT and finally radiological investigation like USG, CT, MRI). Before FNAC patients were informed about the procedure and written consent was taken. Patient was laid in supine position. FNAC was done under aseptic condition without anesthesia. A 20 ml of disposable plastic syringe was connected to the disposable 21, 22 and 23 gauge needle. Needle was moved to the lesion at anti-gravity area with Zic Zac movement so that no sinus formed, then moved to and fro gently with syringe and then plunger pulled at slow so that negative pressure is created in the syringe. The tissue fragments were aspirated in the syringe. After getting material, needle was drawn out and material was pushed on clean glass slides and smears were prepared. These smears were fixed and stained with H&E stain and PAP stain for microscopic examination for reporting.

RESULT

Cytology	No of Cases	Percentage (%)	Age Group	No of Cases	Male	Female
Pyogenic liver abscess	04	10.0%	00 – 20 21– 40 41 – 60 >60	- 01 03 -	03	01
Hemangioma	02	5.0%	0 – 20 21- 40 41 -60 >60	- - 01 01	01	01
Hepatocellular Carcinoma	16	40.0%	0 – 20 21 – 40 41 – 60 >60	- 02 11 03	12	04
Metastatic adeno Carcinoma	11	27.5%	0 – 20 21 – 40 41 – 60 > 60	- 01 07 03	08	03
Metastatic SQ Cell CA	02	5.0%	0 – 20 21 – 40 41 – 60 >60	- - 01 01	02	00
Cyto Diagnosis Lymphoma	03	7.5%	0 – 20 21 – 40 41 – 60 >60	01 01 01 -	02	01
Inadequate Sample	02	5.0%	0 – 20 21 – 40 41 – 60 >60	- - 01 01	01	01

A total no of 40 FNAC were done from cases between age group 12 years 70 years. Out of total no of cases 29 were male and 11 were female. The most common presentation was abdominal lump with or without pain and total loss of appetite. The indication of FNAC was hepatomegaly with severe pain.

The ultrasound finding were noted and correlated with cytological features. Among 40 cases 5(12.5%) were benign, 29 (72.5%) were malignant, 4(10%) were reported as inflammatory and in 2 (5%) cases adequate sample were able to collected. Hepatocellular carcinoma found in 16 (40%) was the most common malignant disease in our study followed by metastatic adenocarcinoma, 11 (27.5%) then pyogenic liver abscess, 4 (10%) followed by lymphoma i.e 3 (7.5%).

In most of the primary carcinoma, neoplastic cells were recognizable as hepatocytes and showed a variable degree of pleomorphism. The classic cytologic features like the tubercular arrangement, endothelial

wrapping, bear and oval nuclei, intra nuclear inclusions and cytoplasmic vacuoles were observed.

DISCUSSION

A total number of forty cases of liver aspiration cytology were studied; out of which male to female ratio was 2.1: 1. A study conducted by G Sudhakar et al supports our findings. Maximum numbers of malignant cases were found 4th to 6th decade which is correlating with tailor and Kothari et al in 2016.[2,3]

The material aspirated was adequate in 38 (95%) cases out of 40. These findings are correlating with study conducted by Tsui et al with 96% accuracy, Talukder et al with 93.5% accuracy and Tailor & Kothari et al with 97.5% effecasy was there.[3,4,5]

Tao LC et al stated that Radiological techniques were frequently used in the diagnosis of liver diseases. But in the case of liver lesions combination of ultrasonography and fine needle aspiration yields accurate diagnosis and it has been used since 1970 to diagnose liver lesions. In china this technique has become significant since accuracy of differential diagnosis of both benign and malignant lesions could reach 88.8%.[6,7,8]

Herszenye et al (1995) in a study on 244 cases of hepatic masses, malignant lesions in 73% cases and benign lesion in 27% of cases. In present study the total malignant cases were 72.5% while benign lesions were 10.5%.

In present study most of the lesions in the liver are malignant 72.5% , 29 were benign 10.5%cases are diagnosed as inflammatory, 12.5% cases as metastatic benign lesion and 05% case are of inadequate sample.

Hepatocellular carcinoma shows smears with very rich cell containing neoplastic cell and the neoplastic cells are forming widened trabeculae, acine and multi layered sheath. In few cases endothelial cells lining with cell grouping in small capillaries transgressing clusters of tumor cells with increased N: C ratio are seen. In maximum smears of HCC the nuclear size were increased with atypia and multinucleation. Smears are characterized with scant to aboundant eosinophilic with granular cytoplasm. Many atypical stripped nuclei were also present. None of the case seen with bile duct epithelium.

One reason of the large number of malignant cases could be the presence of more number of elderly patients in the study. The cytological smears of pyogenic abscess revealed heavy neutrophillic inflammatory cellular exudates with necrotic cell and debris. Macrophage, reactive fibroblast degenerating hepatocytes were infrequent and amoebic liver abscess revealed more necrotic debris, degenerating hepatocyte and fewer inflammatory cells.

CONCLUSION

FNAC is safe, simple, non- surgical, less complicated, OPD based, cost effective and quick investigation procedure in superficial or deep lumps. More over its importance is increased in our remote based setup of Bihar where most of patients could not afford for costly investigation. It is helpful in counselling of patients and follow up. Carcinoma are more accurately diagnosed than any other benign lesion in our study. Radiology assistance plays an important role to getting proper sample in dipper lesion seated in organ like liver.

REFERENCES

1. Silverman JF; Geisinger KR. Fine needle aspiration cytology of the thorax and abdomen. Edinburg: Churchill Livingstone; 1996.
2. Kun M. a new instrument for diagnosis of tumors. Monthly J Med Sci. 1847;7:844-847.
3. Orell&Sterrett's. Fine needle aspiration cytology. 5th ed; chapter 1; page 02.
4. G Sudhakar et al. Study Of Ultra Sound Guided FNAC of Liver Lesions. IJCMR;4(7): 2017:1621-1623.
5. Tailor SB et al. ultrasound guided fine-Needle Aspiration Cytology of Liver Lesion:APrispectve Study. Int J Sci Stud 2016;3(11):249-254.
6. Tsui W. Fine needle aspiration cytology of liver tumors. Ann contempDignPathol 1998;2:79-93.
7. Talukder SI et al. Ultrasound guided fine needle aspiration cytology for diagnosis of mass lesions of liver. Mymensingh Med J 2004;13:25-9.
8. Tao LC et al. Percutaneous FNAC Of liver: cyto diagnosis of hepatic cancer. Actacytol .1979;23:287-291.
9. Wee A, Nilsson B et al. FNAC Of hepatocellular carcinoma. Diagnostic dilemma at the end of the spectrum. Actacytol 199:38:347-354.
10. Prasad N et al.journal of cytology. 2006:23;133-137.