FINALE NEEDLE ASPIRATION CYTOLOGY OF HEPATIC LESIONS IN IRAQI PATIENTS

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ABSTRACT

Study design and Objective: This was a cross-sectional hospital-based descriptive study aimed to assess the role of Fine Needle Aspiration Cytology (FNAC) in diagnosis of the hepatic lesions in Iraqi patients.

Material and Methods: During a period of six months, percutaneous fine needle aspirations, either blindly or under ultrasound guidance, were performed preoperatively on 34 patients with hepatic lesions attended Mosul hospitals.

Results: Cytological diagnosis revealed 33 malignant lesions and one liver abscess. Diagnosis of all cases was confirmed by histopathological examination of tissue biopsies. The sensitivity, specificity, and overall accuracy of the technique were 100%.

Conclusion: FNAC of the liver has proved to be reliable, accurate, safe, economic, and can save the patient unnecessary surgical approach.

Key Words: FNAC, Liver, Iraq

INTRODUCTION

Investigation of liver lesions detected by clinical and/or ultrasound examination may necessitate wide bore needle biopsy and even open liver biopsy. [1, 2] Such techniques may need hospitalization and application of anesthesia; they are associated with considerable rates of complications such as bleeding and tumor spread. [3, 4, 5] Fine needle aspiration of such lesions provides quick, easy, painless, and accurate method of preoperative diagnosis; in experienced hands, no complications are faced. [6, 7, 8] The aim of the current study was to evaluate the technique and assess its role in Iraqi patients with liver mass lesions.

MATERIAL AND METHODS

This was a cross-sectional hospital-based descriptive study conducted at Mosul City during the period between January and July 1998. Preoperative percutaneous FNAC was performed on 34 clinically or ultrasonically detected hepatic mass lesions. The aspirates were obtained from patients in departments of pediatric surgery at Al-Khanasahospital, general surgery at Al-Zahrawi hospital, and internal medicine at Ibn-Sina hospital. All patients were suspected of having malignancy. Verbal permission and approval for all aspirates were obtained from head departments at the mentioned hospitals and from patients and/or co-patients.

Aspirations were done without any routine fasting or premedication. Prothrombin time, PTT, and platelet counts or any other laboratory investigations were not evaluated routinely before the procedure.

Prior to the aspiration, labeled glass slides were put ready for the samples. The skin overlying the mass was cleaned with alcohol or iodine. Topical or local anesthesia was not administered.

The technique was performed by the use of 10 ml disposable syringe with 21-22 gauge needles. Palpable lesions were aspirated directly without the need for ultrasound control (13 cases). Deeper and smaller lesions required more precise localization by ultrasound (21 cases); the largest and most superficial one was selected for aspiration.

After localization of the mass, the needle was introduced into the lesion and negative pressure was applied; the needle was then moved back and forth and in different directions several times during maximum aspiration to soften the lesion. When material appeared into the needle, suction was stopped, and the needle was withdrawn.
No case needed more than one pass to get the material. The patient was kept lying down for 10 minutes and re-examined by ultrasound to notice any possible complications, such as bleeding or hematoma at the site of aspiration.

Two to four thin or central concentrated smears were then made from each aspirate, fixed immediately into 95% ethanol for 15 minutes and stained with Hematoxylin and eosin staining technique. Slides were then evaluated under a light microscope and results were compared with the histological diagnosis which was considered as the conclusive diagnosis. The histological diagnosis was made by open liver biopsy in 14 patients and by core needle biopsy in the remaining 20 patients.

**RESULTS**

All the aspirates were prepared, stained, and reported within 45-60 minutes of obtaining the material. The patients included 30 adults and 4 children, 9 females and 25 males, ranged in age between 7 and 62 years. The presenting clinical findings were dyspepsia in 7 patients, palpable mass in 12 patients, general ill health with loss of weight in 10 patients, and in the remaining 5 patients the lesion was discovered accidentally during follow up after resection of a malignant lesion.

The cytological diagnosis of the aspirated hepatic lesions included 33 malignant lesions and one benign lesion; this is shown in table 1.

The primary sources of the metastatic lesions are shown in table 2.

The cytological diagnosis was consistent with the histological diagnosis in all cases. The sensitivity, specificity, and overall accuracy were 100%.

A mild dizziness followed by fever was noticed in a 50 years old female with hepatic secondaries from carcinoma of the breast.

The technique was acceptable by all the patients. Re-examination of the sites of aspiration by ultrasound showed no signs of bleeding or hematoma in any of the guided aspirations.

**DISCUSSION**

FNAC has proved to be effective preoperative diagnostic tool in superficial lesions [9, 10], however, it is now extended to diagnoses such deep lesions as liver masses. In this site, its role as preoperative diagnostic method can be even more important than the superficial organs; it may save the patient a major surgical operation. In some cases the technique may abolish the need for surgery when the lesion is inoperable or the treatment of choice is radiotherapy or chemotherapy [11, 12, and 13].

The results of this study indicate that FNAC of the liver is very reliable and highly accurate in diagnosis of hepatic lesions, especially malignant ones. It is safe, quick, and economic technique. These results are compatible with several other studies performed on lesions of the liver [14 - 17].

The sensitivity, specificity, and overall accuracy of this study were similar to several studies. [18 - 21].

Comparing the accuracy of FNAC of liver lesions with the accuracy of tru-cut needle biopsy, it was found that FNAC is more accurate, safe, and economic. [4].

Ultrasound guidance during aspiration was especially important in small and deep lesions [22], added to that it is helpful in avoiding aspiration of hydatid cyst in which FNAC is contraindicated. [23].

The complications of FNAC of liver in this study were negligible. [24]. Bile peritonitis and intraperitoneal bleeding reported with core needle biopsy [5] were not observed in this study.

**CONCLUSIONS**

It can be concluded from this study that FNAC of the liver, especially when guided by ultrasound, is accurate, safe, quick and economic preoperative test. It is useful in differentiating neoplastic from nonneoplastic lesions, and benign from malignant ones. It is trusted by surgeons; they usually depend on FNAC results and refer the patient to treatment by radiotherapy or chemotherapy. It can help to predict the primary of an aspirated metastatic tumor.

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**Conflict of Interest**

The author declares that there is no conflict of interest.

**Author's Contribution:**

The author is responsible for conception and design of the study, data collection, interpretation of the findings, and review of the whole manuscript.
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REFERENCES


Table 1: The cytological diagnosis of the aspirated hepatic lesions.

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>Number of Cases</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Metastases</td>
<td>26</td>
<td>76 %</td>
</tr>
<tr>
<td>Hepatocellular Carcinoma</td>
<td>3</td>
<td>9 %</td>
</tr>
<tr>
<td>Hepatoblastoma</td>
<td>2</td>
<td>6 %</td>
</tr>
<tr>
<td>Cholangiocarcinoma</td>
<td>2</td>
<td>6 %</td>
</tr>
<tr>
<td>Pyogenic Abscess</td>
<td>1</td>
<td>3 %</td>
</tr>
<tr>
<td>Total</td>
<td>34</td>
<td></td>
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</table>
Table 2: Origins of the metastatic lesions in the liver

<table>
<thead>
<tr>
<th>Origin</th>
<th>Number of Cases</th>
<th>Percentage</th>
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</thead>
<tbody>
<tr>
<td>Carcinoma of Colon</td>
<td>6</td>
<td>23%</td>
</tr>
<tr>
<td>Intestinal NHL</td>
<td>4</td>
<td>15%</td>
</tr>
<tr>
<td>Lung</td>
<td>3</td>
<td>12%</td>
</tr>
<tr>
<td>Pancreas</td>
<td>2</td>
<td>8%</td>
</tr>
<tr>
<td>Breast</td>
<td>3</td>
<td>12%</td>
</tr>
<tr>
<td>Unknown</td>
<td>8</td>
<td>30%</td>
</tr>
<tr>
<td>Total</td>
<td>26</td>
<td>100%</td>
</tr>
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