Journal of Muhammad Medical College
Website: jmmc.mmc.edu.pk

Original Article

Diagnostic yield of FNAC: Our Experience.

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Abstract

Introduction: Fine needle aspiration cytology (FNAC) is currently recommended as first line investigation in suspected malignancy as it provide useful information to plan surgery. FNAC is the most cost-effective method of obtaining a morphological diagnosis and prognostic purpose of superficial and deep-seated lesion throughout body and also as less expensive than diagnostic surgery.

Objective: To document diagnostic yield of FNAC at Mirpurkhas.

Methodology: This retrospective study was conducted between 1st January 2019 to August 2020 at My Diagnostic Laboratory Mirpurkhas city. A total of 162 patients with the mostly swelling of head and neck and Breast underwent Fine needle aspiration procedure was performed. Tuberculosis suspected was additional sample was sent for slides were also stained with Ziehl Neelsen (Z.N) methods to detected acid fast bacilli (AFB) directly.

Results: In our series 162 cases were analyzed that had underwent FNAC. In 29.62% cases, finding was cystic & mesenchymal lesion, followed by granulomatous inflammation in 28.22% cases. In 20.37% cases lesion diagnosed as malignant.

Conclusion: Tuberculosis is found as most common cause of cervical lymphadenopathy. Breast malignant lesion particularly in young patient can also be diagnosed with reasonable accuracy.

Keywords: FNAC, Cytology, Breast Carcinoma, Cervical Lymphadenopathy.

Introduction:

The current practices of FNAC has primary useful in diagnosing neoplasm, however, also can be helpful in evaluating other diseases such as infection and cyst. FNAC is the most cost-effective method of obtaining a morphological diagnosis and prognostic purpose of superficial and deep-seated lesion throughout body and as less expensive than diagnostic surgery.[1,2] FNAC is simple, accurate highly sensitive and specific with rare false positive. Rapid diagnosis can direct further diagnosis and therapeutics planning which can be discussed with the patient at the visit.[2] There is also psychological advantage of the relieving anxiety or convincing the patient of the need for immediate therapy. However serious complication is rare especially for superficial target.[3] Most of breast cancers are asymptomatic and most of them diagnosed during screening.[4] However large breast tumor present as a painless mass. Painful breast lump usually non-cancerous.[5]

Objective:

To document the diagnostic yield of FNAC in our local set up.

Methodology:

This study is carried out at My Diagnostic Laboratory at Mirpurkhas City. A retrospective study was conducted from 1st January 2019- August 2020. At "My diagnostic laboratory" Mirpurkhas. A total of 162 patients with the mostly swelling of head and neck and Breast underwent Fine needle aspiration procedure was performed by attending senior Pathologist. If tuberculosis was suspected was additional sample was sent for

slides were also stained with Ziehl–Neelsen methods to detect acid fast bacilli (AFB).

We follow the code of practice recommended by The British Society for Clinical Cytologist [6] (Cytopathology 2009; 20:211–23) this encompasses the entire procedure from informed consent to the preparation of the slides and disposal of the aspiration. Fine needle is always preferred as it is almost painless, causes minimum bleeding if any and overall reduces the risk, albeit rare, of tumor seeding.[7]

Brief Procedure: After applying pressure over the swelling to be examined by one hand, 23-gauge needle inserted into the swelling by other hand. Aspirate obtained, spread over the slide as smear and immediately fixed in 95% alcohol and dried immediately. Smear than put in 60%,70% and 80% alcohol for 10-15 minutes. Slide put into hematoxylin for 10-15 minutes Excess stain is washed with tap water. Slide dried and covered smear with cover slip by DFX. Finally examine for cytological findings.

Results:

In our series 162 cases were analyzed that had underwent FNAC, Table 01 shows 102 (63%) cases Female and 60 (37%) cases Male as shown in Fig No.1.

Fig No.1.Gender Distribution.

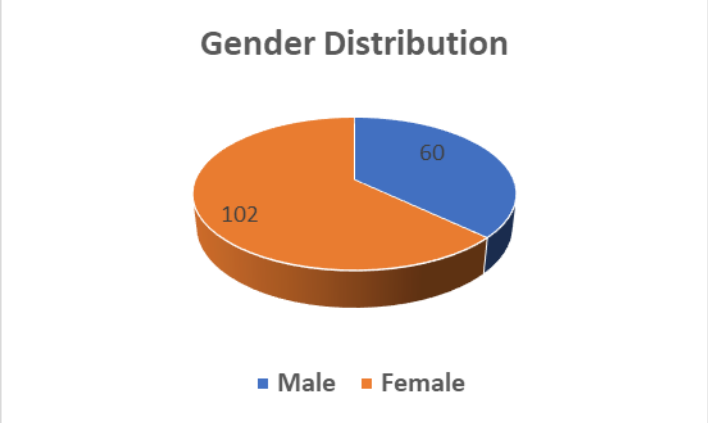
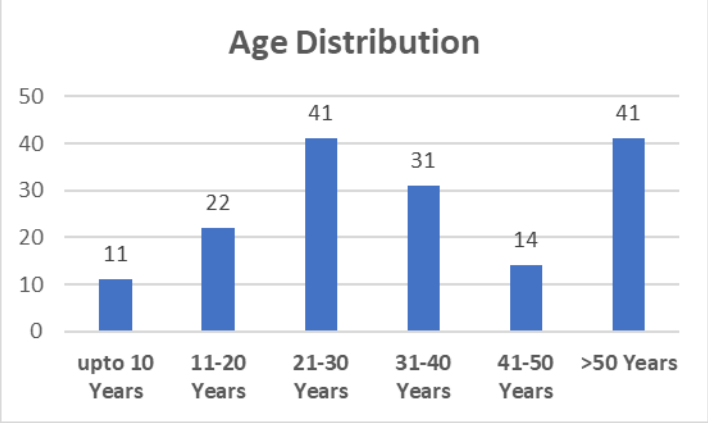


Fig No.2: Age Distribution.



It is evident from fig no 2 majority of patients (25%) were between 21-30 years; another largest group (25%) with respect to age were patients having age 50 years or greater.

Table No 1 shows distributions of lesion and staining performed.

Table No 1: Cytological Findings (n=162)

	FNAC	Z-N Staining*
Chronic granulomatous inflammation (T.B)	46	21
Reactive Hyperplasia	21	
Abscess	14	
Benign (Cystic & Mesenchymal)	48	
Malignant	33	
Total	162	

*Ziehl–Neelsen staining

Most prevalent cytological findings were consistent with chronic granulomatous inflammation identified in 46 (28.6%). Aspirate from these cases was also stain with Ziehl–Neelsen staining; 21 case were positive for Ziehl–Neelsen stain. Next in frequency (n=48; 30%) were Cystic and Mesenchymal benign lesions. 3rd most prevalent cytological finding was malignancy identified in 33 (20%) cases, Reactive hyperplasia 21 (12.9%) cases and 14 (08%) cases were abscess. Reactive Hyperplasia identified in 21 (12.9%) cases; in 14 cases (08%) finding were suggestive of abscess.

Discussion:

In FNAC plays an important role in the investigation of lymphadenopathy, breast and others lesion of the body.

FNAC is first line screening method has been recommended in suspected malignancy and gives extremely useful information for the surgeon. If the result is positive for malignancy, then patients can proceed to the appropriate form of therapy without need for excision biopsy[8]. However, if FNAC is negative but strong clinically suspicious of malignancy the aspiration can be repeated and other investigations such as CT or MRI are helpful[1]

Breast cancer caused 458,503 deaths in 2008 and world health organization (2011) data showed that over 508,000 women died due to breast cancer worldwide[9]. In our study, out of 162 cases, benign were 129 (79%) and 33 (20.3%) cases were malignant.

Among 129 benign cases, most common 46 (35.6) cases were chronic granulomatous inflammation (Tuberculosis), 48 (37.2) cases were cystic and mesenchymal lesion followed by 21 (16.2%) cases were Reactive hyperplasia and (10.8%) cases were Abscess. Among 33 malignant cases, majority of cases found in Breast 18 (54%) cases and 15 (45%) case found in head and neck.

In our study majority cases of cervical lymphadenitis (Tuberculosis) may be due to endemic disease in Pakistan[1]. Moreover, after pulmonary tuberculosis, the 2nd most common form of extrapulmonary tuberculosis is tuberculous lymphadenitis within cervical lymph node. In our study, 46(28.6%) cases of cervical tuberculosis were diagnosed, a finding in close approximation to that reported by Chandrasekhar Jana gam.[1]

Among 21(45%) cases of tuberculosis where Ziehl–Neelsen stain found positive, Hematoxylin & Eosin-stained showed extensive necrosis. However negative Ziehl–Neelsen cases of tuberculosis may be due to granuloma. But clinical strong suspicious, high ESR and chest x-ray findings favor tuberculosis[10-11].

Reactive lymphadenopathy identified in 21 (12.96%) cases. Reactive Hyperplasia due to infections from oral cavity, ears, nose and paranasal drain in theses nodes[12-13]. In our study, 33 (20.37%) cases were malignant. Among these malignant cases 18 (54.6%) were in breast; followed by 15 (45.4%) cases from swelling in Head and Neck region. Here 11 identified as primary lesion while 04 identified as metastatic deposits to lymph node. These results are in agreement with published data.[14-17]

Conclusion:

Tuberculous lymphadenitis, most common cause of cervical lymphadenopathy can easily be identified on FNAC. Breast malignant lesion in young age (< 40 years) when submitted for FNAC, technique may identify lesion accurately and help planning appropriate management strategy with breast conserving surgery with consequent less morbidity.

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