

A cross-sectional study to study the role of Fine Needle Aspiration Cytology in Lymphadenitis: a study from tertiary care Hospital

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Abstract

Background: In patients with lymphadenopathy, the use of fine-needle aspiration cytology (FNAC) for early diagnosis and treatment is recommended due to the ease with which enlarged lymph nodes can be aspirated. The method's simplicity and lack of complexity make it a good choice. Reactive lymphadenitis, inflammation, granulomatous illnesses, and neoplastic diseases can all be diagnosed with a high degree of accuracy using this test. **Aims and Objectives:** This research aims to examine the FNAC results in lymphadenitis, which are frequently encountered by this population. **Materials and Methods:** A hundred patients were studied at the Department of Pathology, name of study place from May 1st, 2021 to August end 2021. All slides and reports were collected and reported. Age, sex, lymphadenopathy sites, and cytological analysis findings were recorded. **Results:** Patients with lymphadenopathy belong to 31-40 years (56%) followed by 21-30 years (26%). With a mean age of 34.56±8.12 years, females (73%) compared to males (27%). The most common site of lymphadenopathy was cervical (69%), followed by axillary (21%), inguinal (8%), and Generalized (2%). Cytological analysis revealed that the majority of the patients were diagnosed with tuberculous lymphadenitis (47%), followed by Chronic reactive hyperplasia (24%), Acute lymphadenitis (16%), and metastatic (12%). **Conclusion:** Fine needle aspiration is an essential modality for the initial diagnosis and management of patients with lymphadenopathy.

Keywords: lymphadenopathy, cervical, biopsy, fine needle aspiration cytology

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Introduction

When it comes to viral diseases, cancers, lipid storage diseases, hormonal imbalances, and other health issues, lymph nodes frequently play a role. A surgical biopsy is regarded as the gold standard for determining the cause of a disease. The downside is that it's expensive, time-consuming, and has many more issues. Fine needle aspiration (FNAC) is recommended for the initial diagnosis and management of individuals with lymphadenopathy because larger lymph nodes are easily accessible for aspiration. The method's simplicity and lack of complexity make it a good choice. Reactive lymphadenitis, inflammation, granulomatous illnesses, and neoplastic diseases can all be diagnosed with a high degree of accuracy using this test. These cases should be investigated in greater detail or followed upon in the future. As a result, an excisional biopsy is rarely necessary. [1] SAFE is the acronym used by De May to describe the benefits of FNAC. It means that it is simple, accurate, fast, and cost-effective. FNAC can be utilized in underdeveloped countries with inadequate financial and health care resources to evaluate peripheral lymphadenopathy as an alternative to excision biopsy. FNAC of peripheral lymph nodes has been used to diagnose various disorders in different country regions [1-4] This research aims to examine the FNAC results in lymphadenitis, which are frequently encountered by this population.

This study was done in the Department of Pathology, name of study place from May 1st, 2021 to August end 2021. All slides and reports collected from the Department of Pathology and MRD were collected and reported. The total sample size was thus 100. The design of the study was retrospective cross-sectional. Uncertain slides and inadequate sample slides were excluded from the present study. Age, sex, lymphadenopathy sites, and cytological analysis findings were recorded. Collected data were entered in an excel file, and frequency distribution was performed using IBM SPSS ver. 25 software. Data were expressed as numbers and percentages.

Results

A total of 100 patients were studied. Most of the patients had ages between 31-40 years (56%), followed by 21-30 years (26%). The mean age of the study population was 34.56±8.12 years. The majority of the patients were females (73%) compared to males (27%).

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Materials and Methods

Table 1: Showing site of lymphadenopathy

Site	No of patients	Percentage
Cervical	69	69
Axillary	21	21
Inguinal	8	8
Generalized	2	2

The most common site of lymphadenopathy was cervical (69%), followed by axillary (21%), inguinal (8%), and Generalized (2%).

Table 2: Showing findings of Cytological study

Findings	No of patients	Percentage
Acute lymphadenitis	16	16
Chronic reactive hyperplasia	24	24
Lymphoma	1	1
Tuberculous lymphadenitis	47	47
Metastatic	12	12

Cytological analysis revealed that the majority of the patients were diagnosed with tuberculous lymphadenitis (47%), followed by Chronic reactive hyperplasia (24%), Acute lymphadenitis (16%), and metastatic (12%).

Discussion

The method of fine-needle aspiration (FNA) is performed to investigate tumors or tumors in the body. Hollow needles of the 23–25 gauges are inserted into the mass for cell collection, then stained and inspected under a microscope following staining (biopsy)[5-7]

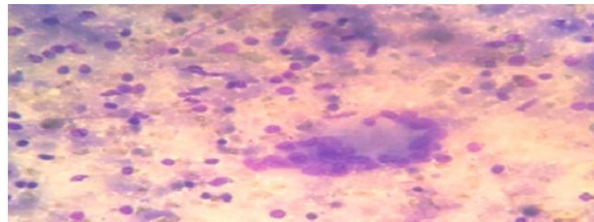


Fig 1: Tuberculous lymphadenopathy

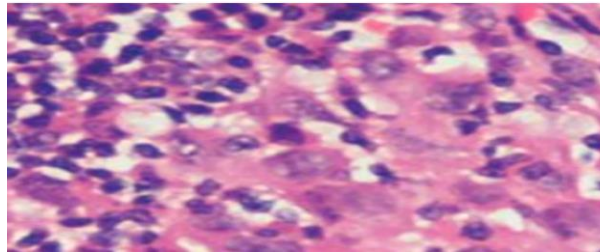


Fig 2: Metastatic Lymphadenopathy

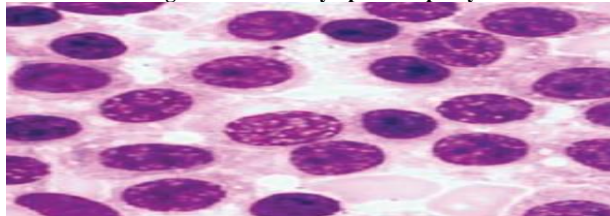


Fig 3: Lymphoma

Fine-needle aspiration biopsy (FNAB) and fine-needle aspiration cytology (FNAC) describe the sampling and biopsy process when combined. Aspiration biopsies using fine-needle aspiration are quite safe[8]. A needle aspiration biopsy can often be performed instead of a large surgical (excisional or open) biopsy, hence avoiding the requirement for hospitalization. Maimonides Medical Center performed the first fine-needle aspiration biopsy in the United States in 1981. The most prevalent complication in outpatients is lymphadenopathy. As a clinical manifestation of regional or systemic disorders, it reveals the disease's root cause. Malignant or nonmalignant factors may be responsible for this. Depending on where you live, the cause can be different. It is critical to determine the underlying cause for accurate diagnosis and treatment. Despite the risks, excision biopsy is the gold standard diagnostic test. FNAC has been proven to be a safe, inexpensive, and accurate method for determining the presence of a superficial mass. This approach is commonly used in the first diagnosis of lymphadenopathy. It has been proposed as an alternative to more expensive surgical excision

biopsies, particularly in developing countries with limited resources. Clinicians aware of the predominant pattern of lymphadenopathy causes in a particular area find their work easier. In the current study, FNAC was used to examine the Cytomorphological Pattern of Lymph Node Swellings of Patients With Peripheral Lymph Node Swellings. As Shah et al. explained, cytomorphological characteristics were employed to diagnose disease[9-11]

Conclusion

The most common findings encountered in the present study were Tuberculous lymphadenitis and Chronic reactive hyperplasia. The present study is intended to assist the practicing pathologists of this region.

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