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Research Article

**THE CERVICAL LYMPHADENOPATHY DIAGNOSIS BY  
EXCISION BIOPSY AND FINE NEEDLE ASPIRATION  
CYTOLOGY (FNAC) WITH COMPARISON****\*Dr. Muhammad Aatir Bhatti, \*Dr. Muhammad Adnan Yousaf, \*Dr. Rehan Muzaffar**  
\*Islam Medical College, Sialkot Pakistan**Abstract:**

**Objective:** To determine the fine needle aspiration cytology accuracy when compared with biopsy in the diagnosis of cervical lymphadenopathy.

**Study Design:** A prospective study.

**Place and Duration:** Between February 2017 to February 2018 for one year duration in the Surgery department Unit II of Services Hospital, Lahore.

**Methodology:** Patients after informed consent with enlarged cervical lymph nodes were selected for the study. FNAC and excisional biopsy were performed in all patients. Both samples were sent separately to the histopathology and cytology departments of laboratory. Both laboratory units work separately and none have received information about each other's reports.

**Results:** Totally 15 patients (30%) were male and 35 (70%) were female. The mean age was 28.7 years. Cytological report was finalized in 48 (96%) patients and only 2 (4%) patients were incapacitated due to lack of material. There were 48 reports of cytology, 11 patients with benign diagnosis as malignant cytology and 37 patients with benign histopathology. Therefore, FNAC had a sensitivity of 96.08%, specificity of 100% and 92.99% accuracy. In 35 patients (68%) the most common disease was Tuberculosis, followed by in 7 patients (12%) with metastatic carcinoma.

**Conclusion:** FNAC is a very simple but accurate technique for the cervical lymphadenopathy diagnosis.

**Key Words:** FNAC, Cervical lymphadenopathy, Tuberculosis, Biopsy.

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**INTRODUCTION:**

In our body, there are about 800 lymph nodes and at least 300 out of them are in the neck. Lymphadenopathy is an abnormal increase in consistency or size and of lymph nodes. It is a clinical presentation of systemic or regional disease and gives clue of the underlying disease. Cervical lymphadenopathy may be caused by malignant or benign causes. The ratio of different etiologic processes for enlarged lymph nodes varies according to the geographical situation and socioeconomic configuration. For the evaluation of cervical lymphadenopathy, different methods such as cytology fine needle aspiration; automated needle biopsy, needle biopsy and open biopsy are used in radiological guided, flow cytometry. Fine needle aspiration (briefly with fnac) is a fast, easy and economical technique for enlarged lymph nodes diagnosis with a greater degree of cytology. The FNAC diagnosis accuracy has been reported to vary from 79% to 94.5% of malignant lymphadenopathy but the limitations of FNAC are high sampling diagnostic rate, a high rate of false negative diagnosis of Hodgkin's disease, and the incomplete Non-Hodgkin's lymphoma classification among them. When open biopsy is done as the 2nd step for frequent diagnosis, the results of cervical lymphadenopathy cannot be explained in the FNAC non-diagnostic or indefinite report. The benefit of open biopsy is that it gives an adequate sample of tissue almost always for diagnosis. However, there are a number of draw bags, such as being risk of infection, highly invasive, vascular structures and damage to nerve and negative recovery.

**MATERIALS AND METHODS:**

This Prospective Study was held in Between February 2017 to February 2018 for one year duration in the Surgery department Unit II of Services Hospital, Lahore. Patients after taking consent with enlarged cervical lymph nodes were

selected for the study. Patients with lymph nodes except salivary, thyroid glands or any other inflammation in the neck were excluded. In addition, aspiration, haze was detected, sent for culture and sensitivity and patients were excluded. FNAC and excisional biopsy were performed in all patients. Both lymph node specimen that was disseminated to cytology (preserved in 90% alcohol) and removed for histology were sent separately to the histopathology and cytology departments of a laboratory. Both laboratory units work separately and none have received information about each other's reports.

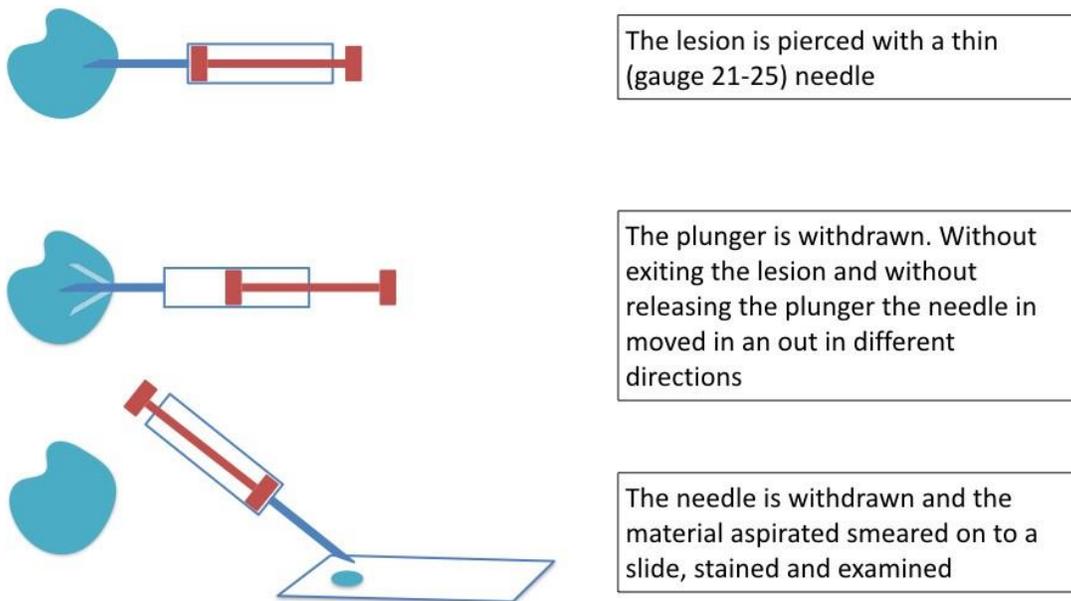
**RESULTS:**

Fifty patients (30%) were male and 35 (70%) were female. 28.7 years was the average age. In addition to cervical inflammation, fever was the most common symptom in 23 patients (44%), in 16 patients (32%) cough was present, in 15 patients (30%) weight loss was noted, and in 10 patients (20%) painful swelling was present. There were no symptoms except 16 (32%) cervical swelling. The mean duration of nodal expansion during presentation is between 2.5 months and 1 to 18 months. Cytological report was finalized in 48 (96%) patients and only 2 (4%) patients were incapacitated due to lack of material. This means that there are 2 false negatives. Of the 48 cytology reports, 37 were benign and none were negative in histopathology, 11 were malignant in cytology and the other was benign in histopathology. Therefore, FNAC had a sensitivity of 95.8%, 100% specificity and 93.0% accuracy. In 34 patients (68%) the most common disease was Tuberculosis, in 7 (13%) patients metastatic carcinoma, non-Hodgkin's lymphoma 4 (7%), in 2 (4%) Hodgkins disease, and in 4 patients (6%) reactive hyperplasia. No complications were seen after FNAC. 2 patients developed a sinus after the biopsy and three had wound infection. There was no nerve damage or bleeding.

Type of lesion	Sensitivity	Specificity	Positive predictive value	Negative predictive value	% of False negatives	% of False positives
TBLN	87.2 %	97.8 %	97.14 %	90 %	12.82 %	2.17 %
CNSL	85.71 %	93.75 %	81.82 %	95.24 %	14.28 %	6.25 %
NTGL	83.3 %	97.5 %	71.4 %	98.71 %	16.67 %	2.53 %
Metastasis	100 %	97.4 %	77.78 %	100 %	00 %	2.56 %
HL	100 %	100 %	100 %	100 %	00%	00%
NHL	100 %	100 %	100 %	100 %	00 %	00 %
Leukemia	100 %	100 %	100 %	100 %	00 %	00 %

**DISCUSSION:**

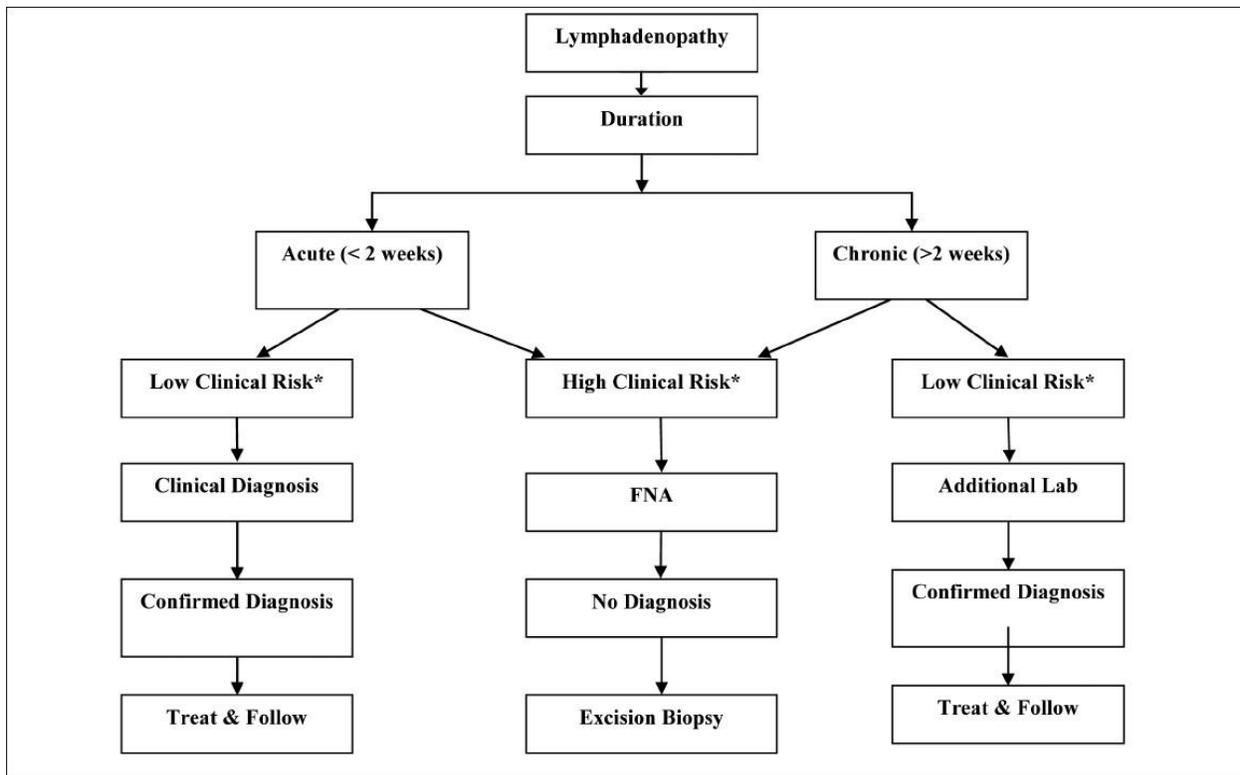
Our analysis proved that FNAC can be used as the only diagnostic method in most of cervical lymphadenopathy because all the diagnoses obtained with cytology were confirmed in histology; So the gold standard. Poddar reported that all FNACs in cervical lymph nodes were true compared to histopathology. Prasad reported FNAC results in 2,418 superficial lymphadenopathy for 5 years. FNAC results were compared with histopathological diagnosis followed in 1,052 cases. These sensitivity rates were found to be 83.3, 97, 30 and 80.3%, respectively, with metastatic tumors fnac tuberculosis, Hodgkin's disease with a specificity of 94.3, and smoking HOM lymphoma, 98.9, 98.6 and 95.4%, respectively.

**FNAC**

From [thecancertextbook.com](http://thecancertextbook.com)

Immunocytochemical evidence of aspirate helped to classify metastatic tumors which are poorly differentiated and confirmed the non-Hodgkin's lymphomas diagnosis. They found that FNAC is economical, reliable and simple for the lymphadenopathy routine. Advani determined the efficacy and accuracy of (FNAC) fine needle aspiration cytology in cervical lymphadenopathy in 36 patients. His studies showed that 87.5% sensitivity, 90.0% specificity and accuracy was 92.04%. All these analysis proved our analysis that the FNAC cervical lymphadenopathy as a first-line assessment is a reliable, safe and accurate test, as it may differentiate the infectious process of evil and prevent unnecessary surgery. In this study, 74% of benign lesions, for example, 50 of the 37 patients and

37 (68%) of the most common disease (68%) were cervical linfadnopatía histology (false positive). With such an endemic history of tuberculosis in our region, you can fully rely on FNAC to detect tuberculosis. If the disease is very rare and very fatal, the early diagnosis significantly increases the prognosis, so high sensitivity is required. Cancers are usually examples of this type where false positive results can be tolerated but false negative results cannot be tolerated. Being malignant in the cytology, therefore, a significant amount of FNAC clinical evidence should not be used as the only diagnostic test for suspected cases of malignancy, and these meaningful errors organized by unqualified examination officers may lead to serious diagnostic damage to the patient.



Since FNAC can be performed quickly and is in an economic manner with minimal discomfort for patients, this procedure is considered to be the first step to study the most common and neck masses, such as common lymph nodes. In fact, it provides FNAC diagnosis for most patients and help in proper treatment. However, FNAC has significant limitations. First, an experienced cytologist is required to interpret the slides. Second, the cytological spreading process of aspirate prevents histological examination of the cellular architecture; It is not possible to perform complete immunohistochemical analysis of aspirate. The use of FNAC establish a challenge to diagnose lymphoma or, therefore, undifferentiated carcinoma, and in these cases, to establish an excisional biopsy of FNAC.

### CONCLUSION:

FNAC is a very simple and accurate technique for the cervical lymphadenopathy diagnosis. If FNAC results are negative, it should be considered as first line and excisional biopsy as second-line for diagnosis.

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