

**Research Article**

## A study of FNAC for evaluation of cervical lymphadenopathy in tertiary care hospital of Jharkhand, Dhanbad

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**Abstract**

**Introduction:** FNAC is a simple, rapid and minimally invasive technique employed for evaluation of a wide variety of superficial palpable lesions. Enlarged cervical lymph nodes are a common presenting complain across patients of all age groups which are subjected to FNAC. This is a standard baseline study for knowing the pattern of cervical lymphadenopathy. In a study conducted by Gaurav Batni et al, almost half of the lymph nodes (51.56 %) were reactive without a known cause which was followed by tubercular (28.12 %), malignancy (17.18 %) and lymphoma (3.1 %). Higher incidence of malignancy was seen in 51-60 years and more than 60 years age group. Tuberculous lymphadenitis was common in 21-30 years age group. O A Silas et al observed on total of 56 samples, out of which 76.8 % were inflammatory and 23.2 % malignant. However tuberculous lesions were seen in only 9.3 % cases.

**Material and Methods:** A retrospective study will be conducted by analyzing the reports of cervical lymph nodes FNAC from June 2015 to November 2017 at pathology department of Patliputra Medical College, Dhanbad in its cytology section. The study would be done on FNAC with 21/22-gauge needle with 20 ml plastic disposable syringe. Three smears would be prepared –

1. Air dried smear stained with MGG stain
2. Wet fixed smear stained with rapid Papanicolaou stain
3. Air dried smear kept reserved for ZN staining.

**Conclusion:** FNAC is an important tool for clinical diagnosis which helps in planning the medical and surgical management of neck lesions. It can be confirmed with histopathological examination which is a gold standard for diagnosis.

**Introduction**

Lymph nodes, the nodular aggregates of lymphoid tissues are most widely distributed in body and are easily accessible. Among them enlarged cervical lymph nodes is a common presenting complain across the patients of all age groups particularly in adults and children. These may be caused by non-

neoplastic conditions like nonspecific and specific reactive lymphadenitis as well as neoplastic conditions of primary or secondary malignancy. Tuberculous lymphadenitis is an important disease particularly in developing countries. FNAC is a simple, rapid, economic and minimally invasive technique employed for evaluation of a wide

variety of superficial palpable lesions including cervical lymphadenopathy. This is a standard baseline study with early results. This provides an important diagnostic aid for knowing the pattern of cervical lymphadenopathy particularly in developing world with limited human and financial resources in comparison to more expensive surgical excision biopsies.

### Material and methods

A retrospective study was carried out in cytopathology section of pathology department of Patliputra Medical College & Hospital, Dhanbad, Jharkhand. The cases with cervical lymphadenopathy from records of a period -June 2015 to November 2017 were included in our study. FNAC was performed with 21 /22 gauge needle on 20 ml syringe attached to syringe holder under antiseptic and aseptic measures without any local anesthesia. Three well labelled smears were prepared and stained according to standard procedure-

1. Air dried smear stained with MGG stain.
2. Wet fixed smear stained with rapid Papanicolaou stain.
3. Air dried smear kept reserved for Z N staining.

The cases of insufficient material or equivocal cytological diagnosis were excluded. The ages were arranged into age group of ten and sexes into male and female. The standard guidelines for cytological diagnosis were followed. The cases were categorized into following groups-

1. Non-specific reactive lymphadenitis –A polymorphous population of lymphoid cells with histiocytes.
2. Tuberculous lymphadenitis – Epithelioid cells and caseation necrosis with or without giant cells. Smears showing only caseous material were also included in this category.
3. Granulomatous lymphadenitis – Epithelioid cells without caseation necrosis and with or without giant cells.

4. Suppurative lymphadenitis – Purulent material showing predominantly degenerated polymorphs and necrotic cellular debris.
5. Metastatic malignancy – Malignant cells in clusters and or dispersed along with lymphoid cells and classified into squamous cell carcinoma and adenocarcinoma.
6. Lymphoma – Classified into Hodgkin lymphoma, Reed -Sternberg cells in polymorphous population of lymphoid cells and Non-Hodgkin lymphoma, monotonous population of lymphoid cells.

### Results

A total number of 216 cases of cervical lymphadenopathy were included in our study (Table 1). There were 84 males and 132 females showing female preponderance. The male female ratio was 0.64:1. Most of the cases were in age group of 21 to 30 years followed by 11 to 20 years and 31 to 40 years. The least number of cases were in age group more than 60 years. Non-neoplastic pathology was noted in 207 cases (95.82%) while neoplastic pathology only in 9 cases (4.16%). Non-specific reactive lymphadenitis (106,49.07%) was observed in approximately half of the cervical lymphadenopathy which was the most common presentation in our study. The next in number was tuberculous lymphadenitis (59,27.31%) followed by suppurative lymphadenitis (24,11.11%) and granulomatous lymphadenitis (18,8.33%). Tuberculous lymphadenitis was most commonly observed in age of 3<sup>rd</sup> and 2<sup>nd</sup> decade. There were total 5 cases with secondary malignancy, 4 cases of squamous cell carcinoma and 1 case of adenocarcinoma. Hodgkin lymphoma and Non-Hodgkin lymphoma were noted with equal frequency, each of 2 cases. No case of malignancy either primary or secondary was seen in 1<sup>st</sup> and 2<sup>nd</sup> decade of age group. Lymphoma was found in 3<sup>rd</sup> and 4<sup>th</sup> decade while secondary malignancy in later age group.

**Table 1:** Present study of FNAC of cervical lymphadenopathy

Age in years	No. of cases	NSLA	TBLA	GLA	SLA	NHL/HL	SEC
<11	19 (8.79%)	11	04	01	03	-	-
11 - 20	51 (23.61%)	25	16	04	06	-	-
21 -30	67 (31.01%)	34	19	05	07	02	-
31 - 40	36 (16.66%)	16	11	04	03	02	-
41 - 50	23 (10.64%)	09	07	02	04	-	01
51 - 60	12 (5.55%)	05	02	02	01	-	02
>60	08 (3.70%)	06	-	-	-	-	02
TOTAL	216	106 (49.07%)	59 (27.31%)	18 (8.33%)	24 (11.11%)	04 (1.85%)	05 (2.31%)

**NSLA** -Non-specific lymphadenitis; **TBLA**-Tuberculous lymphadenitis; **GLA** -Granulomatous lymphadenitis; **SLA** -Suppurative lymphadenitis; **NHL** -Non-Hodgkin lymphoma; **HL** -Hodgkin lymphoma; **SEC** – Secondary

**Table 2:** Other studies showing the causes of cervical lymphadenopathy

Author	Total cases	Reactive lymphadenitis	Tuberculous lymphadenitis	Malignancy (Primary & Secondary)	Others
Khuba R	50	10(20 %)	08 (16 %)	03 (6 %)	13(26 %)
Vapi et al	34	10(29.4 %)	08(23.5 %)	03(8.8 %)	13 (38.2%)
Tariq et al	100	18 (18 %)	36(36 %)	14(14 %)	32(32 %)
Koo V et al	18	00	05 (27.8%)	06(33.3 %)	07(38.9%)
Bai M	50	03(6 %)	31(62 %)	16(32%)	00

**Discussion**

Enlarged lymph nodes should be considered for FNAC regardless of age, symptoms & location. Various infections are the most common causes of reactive, specific/nonspecific lymphadenopathy. The role of FNAC in investigation of lymphadenopathy has been previously well documented (Table 2).

In present study the most common cytological diagnosis was nonspecific reactive lymphadenopathy (106,49.07%) which is in accordance with the study of Gaurav Batni et al. This was found in all age groups of our study with preponderance in 2<sup>nd</sup> to 4<sup>th</sup> decade of life (154,71.29%) which may be due to infections from oral cavity, nose, ears which drain into cervical nodes. Tuberculous lymphadenitis was another important cytological diagnosis in present study, of which high incidence may be due to endemicity of the disease. This is the most common form of extrapulmonary tuberculosis. In study of Meera Bai 2004, Tariq et al 2008 & others tuberculous lymphadenitis was found to be the most common pathology of the cervical lymph nodes. Early diagnosis is important for its curability. The accuracy of cytological diagnosis

of lymphoma has been reported with wide variations. In our study only 4 cases (1.85%) of these diseases have been seen. FNAC is usually considered for evaluation of suspected recurrent lymphoma or deep seated primary lymphoma. Metastatic carcinoma was found in 5 cases (2.3%) with squamous cell carcinoma more in number than adenocarcinoma (4.1). Hirachand et al also observed that commonest type of metastatic carcinoma in lymph node was squamous cell carcinoma. Cervical lymph nodes drain head & neck & may harbor metastatic carcinoma originating in nasopharynx, tongue, floor of mouth etc.

**Conclusion**

The present study was undertaken for evaluation of the role of FNAC in various cytomorphological pattern of cervical lymphadenopathy. This is the more common clinical presentation with varied etiology. FNAC combined with clinical correlation can be used reliably in early diagnosis of lymph node lesion avoiding the need of biopsy and also helps in planning of the management. FNAC can be important in rural and semiurban areas where the facilities are very poor.

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