

## Role of FNAC in study of Lymph Node lesion in Government Medical College And Hospital, experience over a 2 year retrospective study

Dr.Deepika Pandey<sup>1</sup>,Dr.Saroj Kumar Singh<sup>2</sup>, Dr.R.K.Mandhan<sup>3</sup>

<sup>1</sup>(Tutor,PathologyDepartment,MGM Medical college and Hospital,Jamshedpur,India)

<sup>2</sup>(Rajendra Institute of Medical Sciences,Ranchi,India)

<sup>3</sup>(Prof.,PathologyDepartment ,MGM Medical College and Hospital ,Jamshedpur,India)

### Abstract

**Background-** Cervical Lymphadenopathy is one of the most common presentation in various infectious and neoplastic disorder. Fine Needle Aspiration Cytology is simple ,quick, cost effective and minimally invasive technique widely used for early diagnosis of etiology of lymphadenopathy. In this retrospective study we describe the cytomorphological patterns of FNAC of lymph node and its use in establishing early diagnosis.

**Aim-** This study was conducted to assess the utility of FNAC in study of lymph node lesion in Government Medical College & Hospital from Jan 2018 to Dec 2019.

**Materials and Method-** This study was carried out in the department of pathology of Government Medical College and Hospital , Jamshedpur on 84 clinically diagnosed cases with clinical presentation of cervical lymphadenopathy, over a period of 2 years from Jan 2018- Dec 2019.

**Study design-** Cross sectional study with retrospective observation carried out at cytopathology Department.

**Results-** total 84 number of cases were retrieved. Out of these 79 (94%) were found to be due to inflammatory etiology and 05(5.95%) were neoplastic. Tuberculosis was the most common in 41 cases (48.8%) cause followed by reactive lymphadenitis in 31 cases (36.9%), metastatic tumor in 3 cases(3.6%), suppurative lymphadenitis in 7 cases(8.3%), lymphoma 2 cases(2.4%). Highest incidence was found in patients of 20 to 40 years of age group(52.4%).

**Conclusion-** FNAC is minimally invasive ,simple, safe, reliable ,less painful ,cost effective procedure for early diagnosis of cervical lymphadenopathy.

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### I. Introduction

Lymph node are an important part of immune system. Lymphadenopathy is one of the most common clinical presentation in a wide spectrum of diseases including infectious like reactive lymphoid hyperplasia , tubercular granulomatous lymphadenitis ,suppurative lymphadenitis and malignancy. The use of FNAC as minimally invasive technique is widely practised and is accepted as safe ,simple ,rapid and relatively less painful. It has become an integral part of initial investigation and management of patients of lymphadenopathy as it provide early results and is less traumatic with minimal complication in comparison to other invasive techniques like surgical excision biopsies. Also it is cost effective. We study the diagnostic efficacy of FNAC in a Government Medical College and Hospital , Jamshedpur ,India.

### II. Materials and Method

In this retrospective study total of 84 cases were retrieved from the cytopathology section of Pathology Department of Government Medical College and Hospital who had presented with clinical presentation of cervical lymphadenopathy and were advised FNAC in MGM Medical College and Hospital , Jamshedpur over a period of 2 year from Jan 2018 to Dec 2019. FNAC was done using 22 gauge needle and 10 ml syringe. Slides wet fixed and studied using Hematoxylin and Eosin staining. Purulent aspirate were followed up with ZiehlNeelsen staining. Based on cytomorphological pattern, cases were categorised into-

1. Reactive hyperplasia- Very cellular smear showing polymorphous population of lymphoid cells and histiocytes.

2. Granulomatous Lymphadenitis- Epithelioid granulomas with or without caseous necrosis and giant cells.

3. Suppurative Lymphadenitis- Aspiration of purulent material with smear showing plenty of polymorphs with few lymphocytes and negative for AFB.

4. Metastatic Malignancy- Smear showing malignant cells arranged in clusters or discretely along with other lymphoid cells.

5. Lymphomas- Both Hodgkins and Non Hodgkins Lymphoma.

### III. Results and Analysis

| Summary of FNAC from cases with cervical lymphadenopathy in 2 years |           |                  |                         |                  |                 |                 |
|---|-----------|------------------|-------------------------|------------------|-----------------|-----------------|
| Age in years  | Sex       | Reactive         | Necrotizing/Suppurative | Granulomatous    | Metastatic      | Lymphoma        |
| 0-20  | male      | 08               | 02                      | 08               | 00              | 00              |
|   | female    | 06               | 01                      | 06               | 00              | 00              |
| 21-40   | male      | 12               | 02                      | 14               | 01              | 00              |
|   | female    | 03               | 01                      | 10               | 00              | 01              |
| 41-60   | male      | 01               | 01                      | 02               | 01              | 00              |
|   | female    | 01               | 00                      | 01               | 00              | 01              |
| 61-80   | male      | 00               | 00                      | 00               | 01              | 00              |
|   | female    | 00               | 00                      | 00               | 00              | 00              |
| <b>TOTAL</b>  | <b>84</b> | <b>31(36.9%)</b> | <b>07(8.3%)</b>         | <b>41(48.8%)</b> | <b>03(3.6%)</b> | <b>02(2.4%)</b> |

Total 84 cases were subjected to FNAC. There were 44 male and 40 female. Male to Female ratio was 1.1:1 with slight male preponderance. Age of presentation range from 1 year to 61 years with mean age of 20-40 years (52.4%) followed by 0-20 years (36.9%) followed by 8 cases in age of 41-60 years (9.5%) and 1 case in 61-80 years of age group (1.2%). Overall tuberculous granulomatous lymphadenitis was most common finding (48.8%) followed by reactive lymphadenitis (36.9%) followed by acute necrotizing/ suppurative lymphadenitis (8.3%) followed by metastatic (3.6%) causes followed by lymphoma (2.4%).

### IV. Discussion

Comparison of current study with other studies evaluating causes of cervical lymphadenopathy.

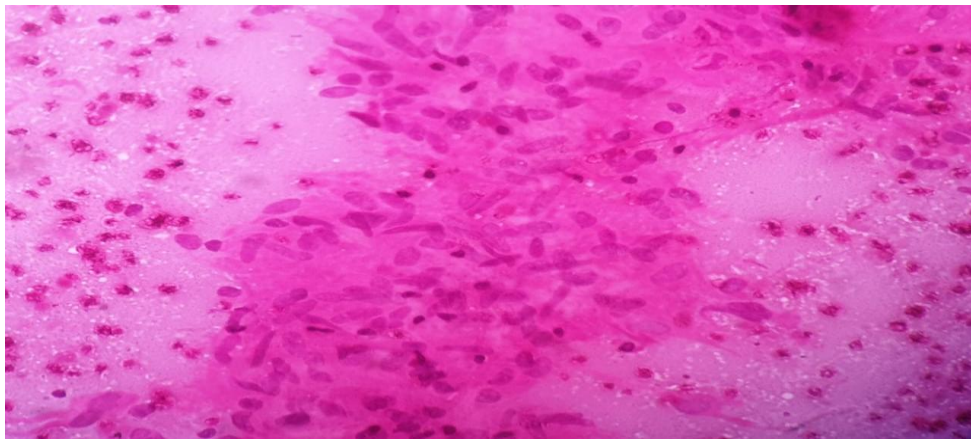
|                    | Total Cases | Reactive lymphadenitis | Tuberculous lymphadenitis | Malignancy(Lymphoma +metastatic) | Others |
|--------------------|-------------|------------------------|---------------------------|----------------------------------|--------|
| Current study      | 84          | 31                     | 41                        | 05                               | 07     |
| RenukaKhuba (2012) | 50          | 12                     | 26                        | 12                               | 00     |
| Vapi et al (2011)  | 34          | 10                     | 08                        | 03                               | 13     |
| Tariq et al (2008) | 100         | 18                     | 36                        | 14                               | 32     |
| V.Koo et al (2006) | 18          | 00                     | 05                        | 06                               | 07     |
| Meera Bai (2004)   | 50          | 03                     | 31                        | 16                               | 00     |
| Chamyal 1997       | 110         | 37                     | 26                        | 45                               | 02     |

FNAC is a very important investigation for early diagnosis of many conditions especially Reactive, granulomatous, acute necrotizing/suppurative and malignancy. Age ranges from 1-61 years with mean age of presentation 20-40 years. Male to Female ratio of 1.1:1. Out of total 84 cases 79 cases were benign and out of 79 benign cases most common etiology was tuberculous granulomatous lymphadenitis (48.8%) followed by reactive lymphadenitis (36.9%). High incidence of Tuberculosis in this study may be due to the fact that TB is endemic in India and most common extrapulmonary presentation is tuberculous lymphadenitis with cervical lymph node most commonly involved group. Study also shows relatively higher incidence of malignancies particularly metastasis in higher age groups i.e. above 40 years. FNAC has higher sensitivity in diagnosis of metastatic malignancies as metastatic cells are usually dissimilar to that of cells of normal or reactive lymph nodes.

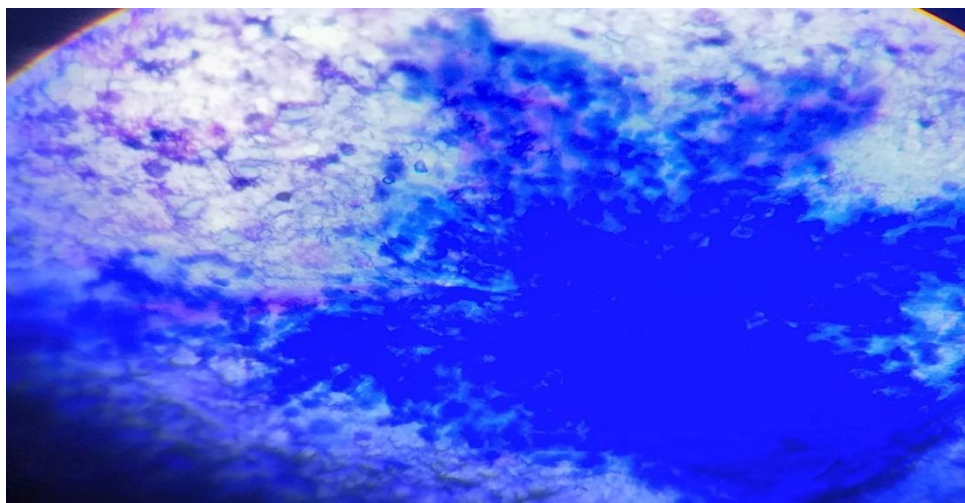
### V. Conclusion

In the current study, the most common cause of cervical lymphadenopathy identified on FNAC were tuberculosis followed by reactive hyperplasia followed by suppurative/necrotizing followed by malignancy. FNAC along with clinical correlation can be used as minimally invasive, simple, safe, reliable, less painful, cost effective procedure for early diagnosis of cervical lymphadenopathy.

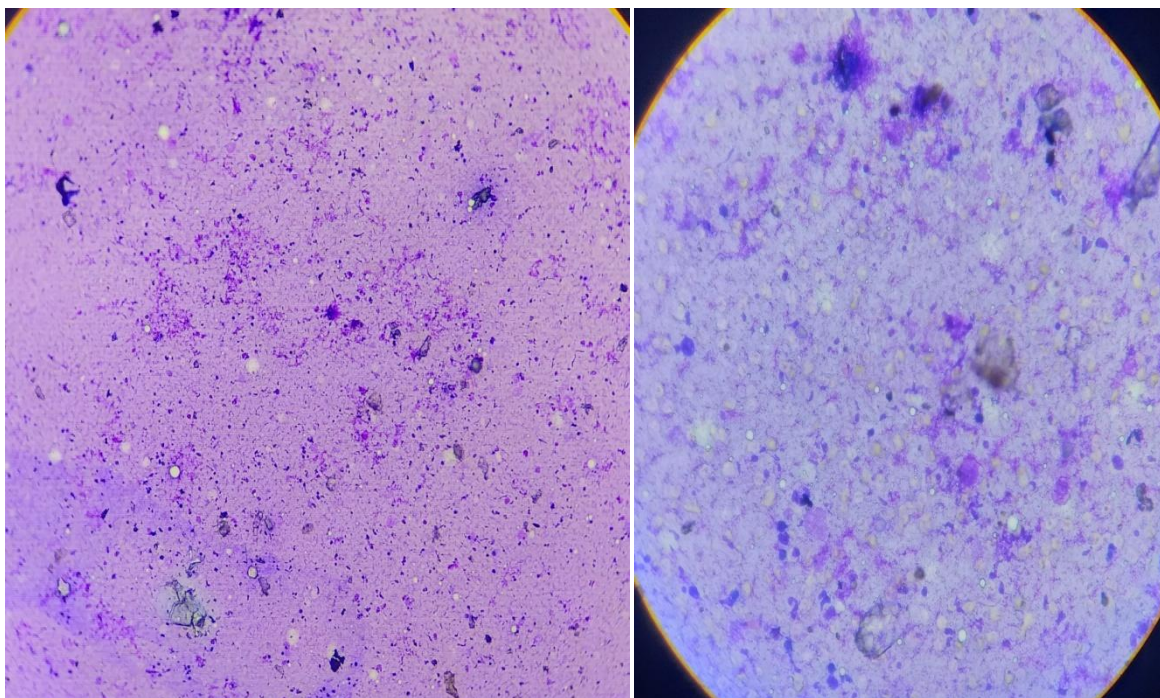
**IMAGES**



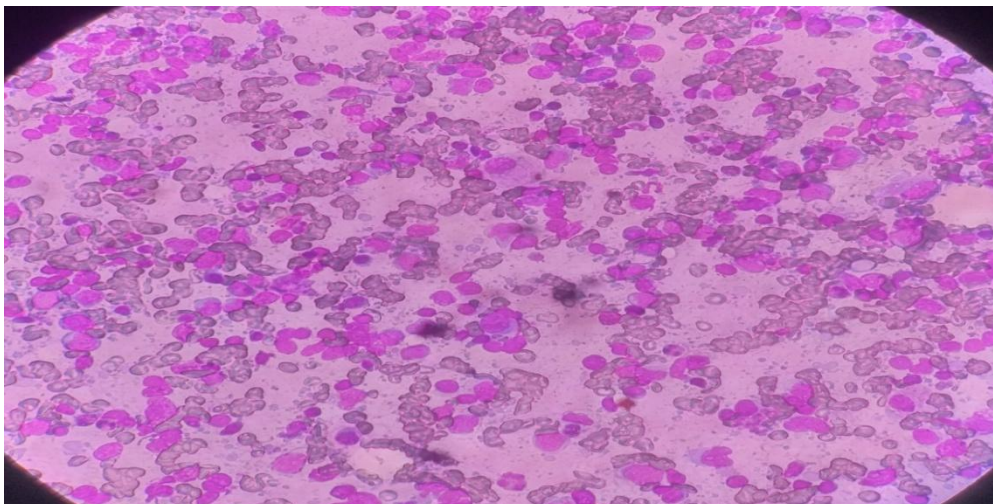
**image (40x) showing granuloma in FNAC**



**Image (40X) showing granulomatous necrotizing lymphadenitis**



**Image (10X) and (40x) showing Necrotizing/suppurative lymphadenitis**



**Image(40X) showing atypical lymphoid cells in lymph node FNAC.**

### **References**

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