

Evaluation of Cervical Lymphadenopathy among Patients Attending a Tertiary Care Centre

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A B S T R A C T

Introduction: Lymphadenopathy is a benign and self limited condition in most of the patients. FNAC is a first line pathological investigation and more helpful when surgical biopsy can avoid. This study was undertaken to know the FNAC findings and prevalence of aetiologies of cervical lymphadenopathy.

Material and Methods: Present prospective cohort study was undertaken at Department of Surgery to evaluate the diagnosis and treatment of lymphnode swelling among patients attending Government General Hospital, Anantapuram during the study period of November 2017 to June 2018. A total of 205 patients presented with neck nodes swelling were evaluated and analyzed.

Results: Most common FNAC finding in Lymphadenopathy was Reactive lymphadenitis i.e., 84 (40.9%) out of 205 patients, followed by 72 (35.1%) tuberculosis lymphadenitis cases, 28 (13.6%) metastatic carcinoma, 10 (4.8%) suppurative lymphadenitis, 5 (2.4%) granulomatous lymphadenitis, 4(1.9%) non hodgkin's lymphoma and 2(0.9%) hodgkin's lymphoma.

Conclusion: FNAC is a rapid, safe test with high sensitivity and specificity to differentiate between benign and malignant lesion, but it can't be substitute for conventional surgical histopathology.

Keywords: Lymphadenopathy, Fine Needle Aspiration Cytology.

INTRODUCTION

Lymphnode swellings are commonly encountered problems at outpatient department. Head and neck region is considered as the most common site for lymphadenopathy. Lymphadenopathy is could be due to infective, active or chronic inflammation or due to primary malignant lymphoma and metastatic carcinoma.¹ Studies have shown that as many as 56% of patients examined for other reasons may be found to have lymphadenopathy (LAP).

It may be in a localized, limited or generalized form and broadly classified as localized, generalized and dermatopathic forms. Unexplained lymphadenopathy is a major concern for clinicians & patient. Sometimes, cervical lymphadenopathy maybe the solitary signs of underlying condition. Lymphadenopathy can be acute of 2 weeks duration, sub acute of 4-6 weeks of duration and chronic which won't resolve by 6 weeks duration.²

In India, commonest causes of lymadenopathy are locoregional infections, tuberculosis and filariasis.³ In patients with unexplained lymphadenopathy, prevalence of malignancy was estimated to be 1.1%, this percentage increases with advancing age. The annual incidence of

lymphadenopathy is 0.6%. Prevalence of cancers related to lymphadenopathy varies with age, it is 4% of patients aged ≥ 40 years and 0.4% of patients aged < 40 years.⁴

Lymphadenopathy is a benign and self limited condition in most of the patients. Usually lymphadenopathy can be diagnosed clinically by taking clear history and proper physical examination alone. When there is a need to find out the cause, then further investigations are needed to evaluate the accurate diagnosis. Further evaluation of lymphadenopathy can be done by ultrasonography, CT scan, FNAC depending on patient age, location of lymphnodes, other clinical features.

For evaluating lymphadenopathy, fine needle aspiration cytology (FNAC) has become an important investigation due to its reliability, fastness and inexpensive method. FNAC is more helpful when surgical biopsy can avoid.⁵ This study was undertaken to know the FNAC findings and prevalence of aetiologies of cervical lymphadenopathy.

MATERIAL AND METHODS

Present prospective cohort study was undertaken at Department of Surgery to evaluate the diagnosis and treatment of lymphnode swelling among patients attending

Government General Hospital, Anantapuramu during the study period of November 2017 to June 2018. Informed consent was taken from the studied population before doing this study.

A total of 205 patients presented with neck nodes swelling were evaluated clinically by taking detailed clinical history pertaining to age, sex, socioeconomic status, occupation, history of TB, familial history cancers, personal habits, and any other relevant history. Carefully examined about presenting complaints and also systemic examination was done. Patients were advised to undergo routine blood examination, urine examination, FNAC and other required investigations pertaining to probable diagnosis such as X-ray, sputum AFB, sputum culture & sensitivity, TST, USG etc., At cytology department, fine needle aspiration cytology of neck nodes swelling was performed by pathologist; for deep seated nodes, radiological assistance was taken. Slides were sent to giemsa, haematoxylin & eosin stain. Few slides kept aside for further investigation if required. Specimen were also sent for culture & sensitivity if needed.

For better practical understanding of common aetiologies of lymphadenopathy, patients were divided into three groups based on their age. Group I was 0-20 years, Group II was 21-50 years and Group III was >50 years of age.

All clinical findings, investigation findings, FNAC reports were correlated and evaluated for final diagnosis.

RESULTS

The age of the patients with lymphadenopathy studied was in the age group of 0-85 years. Predominant number of lymphadenopathy patients was observed in the age group of 21-40 years i.e., 100 (48.7%) out of 205 patients. Out of 205 patients, 109 (53.1%) were males and 96 (46.8%) were female in the ratio of male and female as 1:0.8 (Table 1).

Among cervical lymphnodes, anterior cervical group and sub

mandibular lymphnodes were commonly involved, it was 83.9% and 65.3% respectively followed by 54.6% posterior cervical lymphnodes, 5.8% pre auricular lymphnodes and 3.9% supra clavicular lymphnodes. Probable diagnosis clinically assessed were 45.8% acute adenitis, 29.2% tuberculosis, 12.1% malignancy, 8.7% were nonspecific reactive lymphadenitis and 3.9% were unknown. fig 1

Most common FNAC finding in Lymphadenopathy was Reactive lymphadenitis i.e., 84 (40.9%) out of 205 patients, followed by 72 (35.1%) tuberculosis lymphadenitis cases, 28 (13.6%) metastatic carcinoma, 10 (4.8%) suppurative lymphadenitis, 5 (2.4%) granulomatous lymphadenitis, 4(1.9%) non hodgkin's lymphoma and 2(0.9%) hodgkin's lymphoma (fig-2).

Group I patients (n=17) showed reactive lymphadenitis (47.05%) as most common followed by tuberculosis lymphadenitis (41.1%) and Hodgkin's lymphoma (11.7%). Among Group II patients both reactive and tuberculosis and reactive lymphadenitis were almost equally reported, but the former was little high as 44.2% and 39.3% respectively followed by metastatic carcinoma (9.8%), suppurative lymphadenitis (4.09%), Granulomatous lymphadenitis (1.6%) and non hodgkin's lymphoma (0.8%). In Group

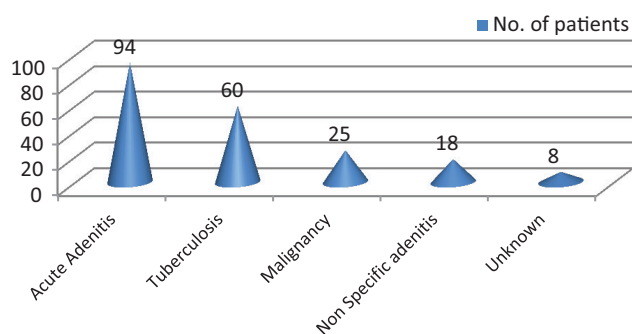


Figure-1: Clinical diagnosis of cervical lymphadenopathy

| Age in years | Male | % | Female | % | Total | % |
|--------------|------|------|--------|------|-------|------|
| 0-20 | 8 | 3.9 | 9 | 4.3 | 17 | 8.2 |
| 21-30 | 28 | 13.6 | 30 | 14.6 | 58 | 28.2 |
| 31-40 | 17 | 8.2 | 25 | 12.1 | 42 | 20.4 |
| 41-50 | 12 | 5.8 | 10 | 4.8 | 22 | 10.7 |
| 51-60 | 31 | 15.1 | 7 | 3.4 | 38 | 18.5 |
| >60 | 13 | 6.2 | 15 | 7.3 | 28 | 13.6 |
| Total | 109 | 53.1 | 96 | 46.8 | 205 | 100 |

Table-1: Age and sex wise distribution of studied population

| FNAC findings | Group I | | Group II | | Group III | | Total | % |
|-----------------------------|---------|---|----------|----|-----------|----|-------|------|
| | M | F | M | F | M | F | | |
| Reactive Lymphadenitis | 4 | 4 | 22 | 26 | 20 | 8 | 84 | 40.9 |
| Tuberculosis lymphadenitis | 3 | 4 | 26 | 28 | 6 | 5 | 72 | 35.1 |
| Granulomatous lymphadenitis | 0 | 0 | 2 | 0 | 1 | 2 | 5 | 2.4 |
| Suppurative lymphadenitis | 0 | 0 | 2 | 3 | 3 | 2 | 10 | 4.8 |
| Metastatic Carcinoma | 0 | 0 | 4 | 8 | 12 | 4 | 28 | 13.6 |
| Hodgkin's lymphoma | 1 | 1 | 0 | 0 | 0 | 0 | 2 | 0.9 |
| Non Hodgkin's lymphoma | 0 | 0 | 1 | 0 | 2 | 1 | 4 | 1.9 |
| Total | 8 | 9 | 57 | 65 | 44 | 22 | 205 | 100 |

Table-2: FNAC findings in relation to age and sex

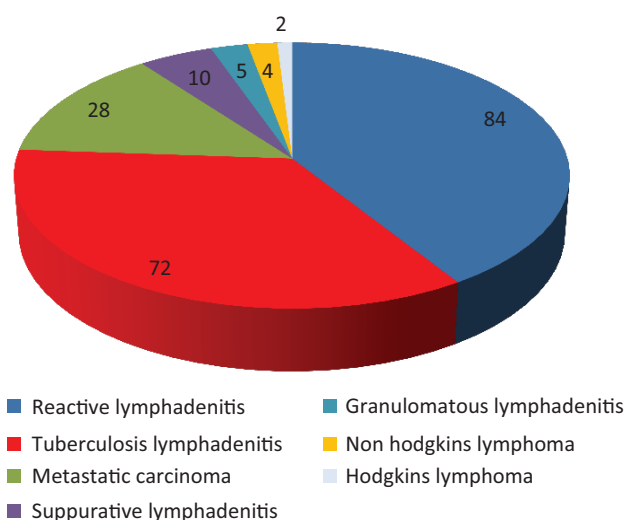


Figure-2: FNAC findings of cervical lymphadenopathy

III patients, reactive lymphadenitis (42.4%) is commonest followed by metastatic carcinoma (24.2%) (table 2).

DISCUSSION

Lymphadenopathies are reactive processes which are responsive due to various exogenous and endogenous stimuli. The diagnosis of lymphadenopathies involves clinical examination, imaging, pathological and microbiological correlation. FNAC is a quick, safe, and minimally invasive outpatient procedure helps to diagnose clinical condition.

Cervical lymphadenopathy is most common presentation among various lymphnode swellings. In children self limiting and viral illness are most common cause of lymphadenopathy. Clinical history and physical examination takes a vital role in lymphadenopathy than investigation. Need to complete history of the patient pertaining to age, sex, socioeconomic status, time of presentation, duration of symptoms, pre-existing disease, history of travel, personal history, relevant family history, family history of malignant disorders, history of exposure to animals, on any medications, ingestion of certain foods, history of past infections, exposure to ultraviolet radiation, any contact with TB patient can help to determine the etiology of lymphadenopathy.

Abba AA et al⁶ found that 79% of patients with <30 years of age, 59% of 31-50 years patients and 39% of >50 years aged patients had benign or self limited causes. Abba AA et al did a study on 258 adults patients observed that age >40 years, male gender, generalized lymphadenopathy, abnormal Liver function tests, and negative mantoux test to be statistically significantly associated with nodal malignancy.⁷

In line with this study, Gaurav Batni et al⁸, Shakya G et al⁹ and Maheshwari R et al¹⁰ reported that most common age group affected was 21-40 years. Haque MA et al¹¹, Pandit AA et al¹², Gaurav Batni et al⁸, Shakya G et al⁹, Hsu C et al¹³, Maheshwari R et al¹⁰ observed almost equal incidence of male and female. In contrast to this study Tariq Ahmad et al¹⁴, Ammari FF et al¹⁵ observed female preponderance.

Neha Singh et al¹⁶ did a FNAC study on pediatric age group (0-16 years) with lymphadenopathy stated that 71.05% were non specific reactive lymphadenitis, 17.1% tuberculous lymphadenitis, 8.3% Granulomatous lymphadenitis, 3.5%

suppurative lesions, 1.6% neoplastic lesions, and 6.8% inconclusive results. Noted anterior cervical and posterior cervical lymphnodes were predominantly involved with percentage of 46.8% and 28.1% respectively. Haque MA¹¹ and Pandit AA et al¹² reported cervical lymphadenopathy as commonest among peripheral lymphadenopathies.

In Similar to our study Neha singh et al¹⁶, Kumral A et al¹⁷ and Annam V et al¹⁸ observed non specific reactive lymphadenitis is first most common etiology followed by tuberculous etiology in <20 years age group with lymphadenopathy.

Maheshwari R et al¹⁰ stated reactive lymphadenitis and tuberculous lymphadenitis was the most common etiology in below 12 years age group. Malignant etiology was commonest in age group of >50 years. In the age group of 21-50 years, tuberculous lymphadenitis was observed predominantly followed by reactive lymphadenitis.

Vamshi Krishna Gorle et al¹⁹ did a study on 100 patients of cervical lymphadenopathy in the age group of 12-40 years, stated that non neoplastic cause was predominantly observed in 82% cases. Among non neoplastic causes, most common was tuberculosis (51%) and among neoplastic causes, commonest was lymphoma (10%).

In similar to our study, Gaurav Batni et al⁸ documented that out of 64 patients (51.5%) was reactive non-specific, 28% tubercular, 3.1% lymphoma and 17% were malignant. Higher incidence of malignancy was noted in 51-60 years of age group. Shakya et al⁹ documented 50.4% cases as non-specific and 22.4% cases to be tuberculosis. Mili MK et al²⁰ observed 58.03% tuberculous lymphadenitis, 30.35% secondaries, 5.35% reactive lymphadenitis, 3.57% hodgkins lymphoma and 2.67% non hodgkins lymphoma. Kim LH et al²¹ reported 35.3% reactive lymphadenitis, 13.9% tuberculous lymphadenitis, 25.7% secondaries, 4.1% hodgkins lymphoma and 8% non hodgkins lymphoma. Maheshwari R et al¹⁰ reported Tuberculous lymphadenitis (67%) was the most common etiology of cervical lymphadenopathy followed by reactive (9%) and non-specific lymphadenitis (9%) with malignant secondaries (11%) and lymphomas (4%). Mili MK et al²⁰ stated tuberculous lymphadenitis patients had lymphadenopathy predominantly in jugular group and posterior triangle group.

Steigler R et al²² did a five year study on peripheral enlarged lymphnodes on 398 patients, noted FNAC has a sensitivity of 97.6% and a specificity of 96.0% of lymphnodes analysed. For metastatic lymphnodes of solid neoplasms sensitivity was even 98.7%. Mili MK et al²⁰ reported both sensitivity and specificity of FNAC for malignant secondaries was 100% whereas for tuberculosis sensitivity was only 86.20% and specificity was 100%.

Al-Mulhim AS et al²³ did a comparative study on fine needle aspiration cytology and imprint cytology (IC) and documented their findings as with FNAC 93% tuberculous lymphadenitis, 90% hodgkins lymphoma, 86% in non hodgkins lymphoma. Whereas, with IC 97% in tuberculous lymphadenitis, 90% in hodgkins lymphoma and 95% metastasis lymphadenopathy.

CONCLUSION

In the present study, most of the cervical lymphadenopathy

patients were reported in the age group of 21-40 years, with male to female ratio of 1:0.8. Reactive lymphadenitis is commonest etiology followed by tuberculous lymphadenitis. FNAC is a rapid, safe test with high sensitivity and specificity to differentiate between benign and malignant lesion, but it can't be substitute for conventional surgical histopathology.

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