

Lymph Node Lesions in Underserved Population of Andhra Pradesh: A Prospective Study

Prasad Uma

Associate Professor, Department of Pathology, Rajeev Gandhi Institute of Medical Sciences, Srikakulam, Andhra Pradesh, India

Abstract

Background: Lymphadenopathy is of great clinical significance, and the underlying cause may range from a treatable infectious etiology to malignant neoplasms. In literature, there are few documented studies regarding the spectrum of lesions in the underserved population. These lesions can be easily diagnosed on cytology without surgical intervention and appropriately treated.

Aim of the Study: To know the various causes of lymphadenopathy in the rural and tribal population of Andhra Pradesh.

Material and Methods: The patients with superficial lymphadenopathy attending the outpatient clinics of tertiary care center catering to the needs of the rural and tribal population were subjected to fine-needle aspiration followed by biopsy. The results were analyzed.

Results: The spectrum of lesions was: Non-specific lymphadenitis (47.3%), acute suppurative lymphadenitis (3.60%), tuberculous lymphadenitis (28.54%), granulomatous lymphadenitis (7.21%), metastatic carcinoma (3.52%), and lymphoproliferative lesions (1.55%). Overall correlation on cytology was 91.3%, diagnostic accuracy; 97.2%, sensitivity; 100%, and specificity; 94%.

Conclusion: The commonest lesion in the underserved was non-specific lymphadenitis and tuberculous lymphadenitis which can be easily diagnosed on cytology and are treatable.

Key words: Lymphadenopathy, Non-neoplastic lesions, Neoplastic lesions, Prevalence, Underserved

INTRODUCTION

Lymphadenopathy is one of the commonest clinical presentations of patients, attending the outpatient department. Etiology varies from an inflammatory process to a malignant condition. There are few documented studies in the underserved population in literature. Lesions of lymph node can be easily diagnosed on fine-needle aspiration cytology (FNAC) but needs expertise. It is a simple, easy technique and reports can be made available within an hour. FNAC has become an integral part of the initial diagnosis and management of patients presenting with lymphadenopathy. This simple technique has recently

gained wide acceptance since it offers a high degree of accuracy, lending itself to outpatient diagnosis and thus making considerable savings in the cost of hospitalization. The present study is conducted at a tertiary care center which caters to the need of tribal, rural and semi-urban population.

MATERIALS AND METHODS

This prospective study based on a sample of patients who attended the outpatient clinics of tertiary care center from June 2013 to June 2015. Their chief complaints were enlarged superficial lymphadenopathy. FNA was performed using a 10-20 cm disposable syringe attached to a 22-gauge needle. The needle was allowed to move back and forth into different parts of the enlarged lymph node, several times before withdrawal. Aspirates were smeared which was fixed by Isopropyl alcohol to be stained with H and E and air dried smears by May-Grünwald Giemsa. With respect to surgical specimens, they were routinely processed and stained with H and E.

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Corresponding Author: Dr. Prasad Uma, Q.No. 49-3-3, Lalithanagar, Visakhapatnam - 530 016, Andhra Pradesh, India.
 Phone: +91-9490601461. E-mail: usha1966411@gmail.com

RESULTS

Total no of lymphoid aspirates analyzed on cytology were 1219. Cases available for cyto-histopathological correlation were 115. The cases were divided into 6 groups on cytology: Non-specific lymphadenitis - 583(47.3%), acute suppurative lymphadenitis - 44 (3.60%), tuberculous lymphadenitis - 348 (28.54%), granulomatous lymphadenitis - 88 (7.21%), metastatic carcinoma - 43 (3.52%), and lymphoproliferative lesions - 19 (1.55%). Male:Female ratio there was equal incidence. Lymphadenopathy was more common in the age group <20 years (Table 1). A cervical group of lymph nodes were most commonly involved (Table 2). Clinico-histopathological correlation was seen a maximum in tuberculous lymphadenitis (Figure 1). The cyto-histopathological correlation was 100% in malignant lesions (Figure 2). Deferred cases on cytology were eight in number. Four cases of granulomatous lymphadenitis on cytology showed fungal granulomas on histopathology. Four cases of non-specific lymphadenitis turned out to be tuberculous lymphadenitis on histopathology. Overall correlation on cytology was 91.3%, diagnostic accuracy; 97.2%, sensitivity; 100%, and specificity; 94%

DISCUSSION

Sharma *et al.*¹ analyzed 736 cases of lymphadenopathy in the rural population of Haryana. The most frequent cause of lymphadenopathy was tuberculosis (56.92%) followed by reactive lymphadenitis (26.22%) and metastatic lymphadenopathy (6.38%). A diagnosis of lymphoproliferative disorder was rendered in 2.71% of cases. FNAC was helpful in establishing the diagnosis in 98.65% of the cases.

In the study by Haque and Talukder,² the commonest lesions were granulomatous inflammation (40.35%),

chronic non-specific lymphadenitis (27.19%), metastatic carcinoma (17.54%), non-Hodgkin's lymphoma (5.26%), tubercular lymphadenitis (3.51%), acute non-specific lymphadenitis (2.63%), and Hodgkin's lymphoma in 2.63%. Sensitivity and specificity of FNAC were 82.76% and 97.92%.

Gunvanti *et al.*³ analyzed 70 cases with cervical lymphadenopathy, 41 were males and 29 were females with male preponderance. Among the diagnostic outcome, 34.28% were having tuberculous lesions followed by 24.28% of reactive hyperplasia, 21.43% of secondary metastases, 11.43% of lymphoma, and 7.15% of acute non-specific lymphadenitis. Paliwal and Nigam⁴ studied 280 cases of cervical lymphadenopathy. The best diagnostic accuracy on cyto-histological correlation was in cases of metastatic carcinoma (100%) followed by tuberculous lymphadenitis (76.7%) and reactive hyperplasia (75%).

Rajbhandari *et al.*⁵ observed reactive lymphadenitis (15), tuberculosis (5), metastatic adenocarcinoma (2), Hodgkin's lymphoma (1), and non-Hodgkin's lymphoma (6) with a sensitivity, specificity, and accuracy rate of 82.7%, 96%, and 88.76%, respectively.

Vidya and Subramanya⁶ out of the total 678 cases, most of the cases were in the age group of 20-29 years, with a

Table 1: Age distribution of various lymphoid lesions on cytology

Age distribution (years)	Percentage
<20	37.24
21-40	31.74
41-60	18.12
>60	12.87

Table 2: Commonest site of lymphadenopathy

Commonest site	Percentage
Cervical group	62.9
Axillary	18.5
Submandibular	7.4
Supraclavicular	2.22
Inguinal	8.88

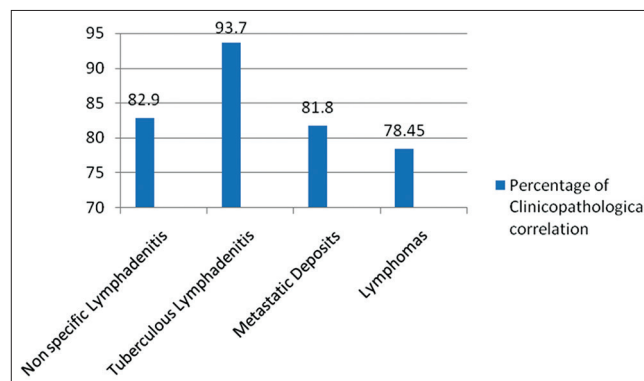


Figure 1: Clinico pathological correlation

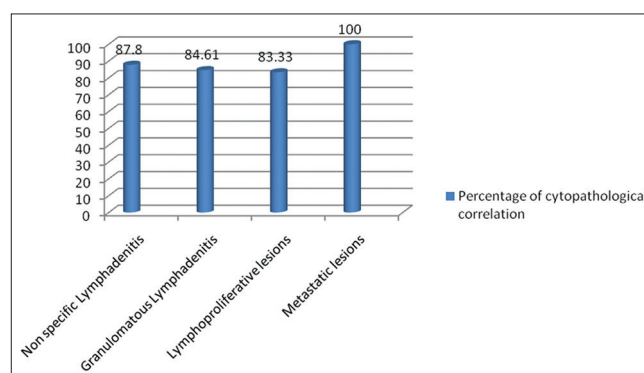


Figure 2: Cyto pathological correlation

male preponderance. The most commonly involved were the cervical group of nodes. In benign lymphadenopathies, most of the cases were reactive lymphadenitis (50.44%). Metastatic deposits were seen in 12.68% of cases. Most common subtypes were poorly differentiated carcinoma. 17 cases were diagnosed as Lymphomas, of which 10 were Hodgkin's lymphoma, and 7 were Non-Hodgkin's. Histopathological data was available for 41 cases. 38 cases correlated well with FNAC. There was a good correlation between FNAC and histopathology with an overall agreement of 92.7% (38 out of 41). Considering histopathology as gold standard and specificity of FNAC was 92.7%.

Singal *et al.*⁷ of 139 cases of lymph nodal lesions analyzed, 34.53% cases were diagnosed as reactive lymphadenitis, 12.94% of acute inflammatory pathology and metastatic lesions in 30.93% of cases, all were confirmed on histopathology. Among the malignant lesions, metastatic lesions were highest which included mainly metastatic squamous cell carcinoma.

Ghartimagar *et al.*⁸ analyzed 508 cases of lymphadenopathy: Reactive or infective cause was seen in 68%, positive for metastasis in 18%, and hematolymphoid malignancies in 2%. The most common site was anterior and posterior triangles cervical nodes. The most common malignancy was adenocarcinoma (67%), followed by metastatic squamous cells carcinoma (15%).

Mustafa *et al.*⁹ documented that most common metastatic tumor was metastatic squamous cell carcinoma (51.85%), followed by metastatic adenocarcinoma (7.41%). The sensitivity and specificity of FNAC came out to be 97.37% and 93.75%, respectively, with an overall diagnostic accuracy of 96.29%.

Wilkinson *et al.*¹⁰ reported malignancy in 15.4% of the lymph node aspirates. Sheikh and Parmar¹¹ in their study, the majority of cytological diagnosis made on the lymph node aspirates were metastasis from squamous cell carcinoma followed by metastasis from ductal carcinoma of breast. In lymphoma, two cases were diagnosed as Hodgkin's lymphoma.

Shrivastav *et al.*¹² documented reactive hyperplasia in (52.38%), tubercular lymphadenitis in (46.21%), and metastatic carcinoma in (56.33%).

Hirachand¹³ observed reactive hyperplasia in (41.55%), tubercular lymphadenitis in (28%), metastatic carcinoma in (12.3%), granulomatous lymphadenitis in (9.2%), lymphoma (6%), and suppurative lymphadenitis in (3%). Overall diagnostic accuracy was 92.85% in tubercular

lymphadenitis. In metastatic carcinoma to lymph nodes, sensitivity and specificity of FNAC were 100% each.

In the present study, benign lymphadenopathy constituted a significant proportion of lesions, and malignant lesions constituted 5.07%. The spectrum of lesions was non-specific lymphadenitis (47.3%), acute suppurative lymphadenitis (3.60%), tuberculous lymphadenitis (28.54%), granulomatous lymphadenitis (7.21%), metastatic carcinoma (3.52%), and lymphoproliferative lesions (1.55%). In our series, male to female ration was equal and cervical lymphadenopathy (62.9%) was the commonest.

In the present study, tuberculous lymphadenitis constituted 28.54% and granulomatous lymphadenitis probably due to tuberculosis or other causes constituted 6.89%. Except for 2 cases with fungal granulomas in diabetics, the rest of the cases with diagnosis of granulomatous lymphadenitis on cytology turned out to be tuberculous lymphadenitis on histopathology with a diagnostic accuracy of 84.61%. Out of 19 cases with a diagnosis of the lymphoproliferative lesion on cytology, 18 were confirmed on histopathology as lymphomas with overall diagnostic accuracy of 83.33%. 12 cases were non-Hodgkin's lymphoma, and 3 cases were Hodgkin's lymphoma. Three cases did not correlate; they turned out to non-specific lymphadenitis on histopathology.

The accuracy of FNA in diagnosing metastatic tumors was 100%. Squamous cell carcinoma was the most common type; 60.5%, adenocarcinoma; 15.31%, poorly differentiated carcinoma; 10.21%, papillary carcinoma of the thyroid; 10.9%, and malignant melanoma 2.9%. Sensitivity and specificity of FNAC in the present study were 100% and 94%, respectively.

CONCLUSION

In the present study, the commonest lesions in the underserved were tuberculous lymphadenitis (28.54%) which can be easily diagnosed on cytology. In malignant lymphadenopathy, 7.21% were metastatic lesions and 1.55% were lymphomas which can be easily differentiated on cytology. FNAC can be easily performed at the primary health center avoiding unnecessary surgery and instituting early therapy.

REFERENCES

1. Sharma P, Rana S, Gill MK, Singh P, Satarkar RN, Kalhan S. Spectrum of lymph node lesions on cytology in rural Haryana: A retrospective analysis. *Int J Res Med Sci* 2015;3:1125-30.
2. Haque MA, Talukder SI. Evaluation of fine needle aspiration cytology (FNAC) of lymph node in Mymensingh. *Mymensingh Med J* 2003;12:33-5.
3. Rathod GB, Rathod S, Parmar P, Parikh A. Diagnostic efficacy of fine

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- needle aspiration cytology in cervical lymphadenopathy – A one year study. *Int J Med Pharm Sci* 2014;4:01-8.
4. Paliwal UK, Nigam SK. Diagnostic accuracy of fine needle aspiration cytology in cervical lymph nodes with histopathological correlation. *J Evol Med Dent Sci* 2013;2:5936-42.
 5. Rajbhandari M, Dhakal P, Shrestha S, Sharma S, Shrestha S, Pokharel M, *et al.* The correlation between fine needle aspiration cytology and histopathology of head and neck lesions in Kathmandu University Hospital. *Kathmandu Univ Med J (KUMJ)* 2013;11:296-9.
 6. Vidya K, Subramanya NK. Fine needle aspiration cytology of lymphadenopathies: A 3 year study. *Journal of Evidence based Medicine and Health care* 2015;2:4579-96.
 7. Singal P, Bal MS, Kharbanda J, Sethi PS. Efficacy of fine needle aspiration cytology in head and neck lesions. *Int J Med Dent Sci* 2014;3:421-30.
 8. Ghartimagar D, Ghosh A, Ranabhat S, Shrestha MK, Narasimhan R, Talwar OP. Utility of fine needle aspiration cytology in metastatic lymph nodes. *J Pathol Nepal* 2011;1:92-5.
 9. Mustafa Z, Baloch FA, Khalid A. Diagnostic accuracy of fine needle aspiration cytology (FNAC) in metastatic lymphadenopathy. *Int J Pathol* 2015;13:7-13.
 10. Wilkinson AR, Mahore SD, Maimoon SA. FNAC in the diagnosis of lymph node malignancies: A simple and sensitive tool. *Indian J Med Paediatr Oncol* 2012;33:21-4.
 11. Sheikh S, Parmar JK. Fine needle aspiration – A magical tool to diagnose malignant lymphadenopathy. *Int J Recent Trends Sci Technol* 2013;7:138-40.
 12. Shrivastav A, Shah HA, Agarwal NM, Santwani PM, Srivastava G. Evaluation of peripheral lymphadenopathy by fine needle aspiration cytology: A three year study at tertiary center. *J NTR Univ Health Sci* 2014;3:86-91.
 13. Hirachand S, Lakhey M, Akhter J, Thapa B. Evaluation of fine needle aspiration cytology of lymph nodes in Kathmandu Medical College, Teaching hospital. *Kathmandu Univ Med J (KUMJ)* 2009;7:139-42.

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