

A Clinicopathological Analysis of Lymphadenopathy at DMCH, Laheriasarai, Bihar

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Abstract

Background: The lymphatic system includes lymph nodes. Viruses, bacteria, cancer cells, and other undesired substances are carefully filtered out of the body by lymph nodes. Lymphadenopathy is a prevalent clinical issue that commonly causes diagnostic conundrums. A frequent issue that is diagnosed as lymphadenopathy is lymph node enlargement. Lymphadenopathy is a term used to describe an anomaly in the size and function of lymph nodes; it is also used to describe abnormally enlarged lymph nodes that are more than 10 mm in diameter. Lymphadenopathy is a prevalent clinical issue that commonly causes diagnostic conundrums. Due to its early results, ease of use, and low risk to the patient, fine needle aspiration cytology (FNAC) has emerged as a key technique for the initial diagnosis and therapy of patients with lymphadenopathy. This study primary goal is to correlate clinical and pathological conditions that manifest as lymphadenopathy. Node biopsy and open lymph will also be used to assess the role of FNAC in diagnosis.

Methods: From June 2018 to November 2018, the current study was conducted at Department of Pathology, DMCH, Laheriasarai, Bihar. The study involved 40 patients in total. Fine needle aspiration cytology (FNAC) was performed on each of the 40 patients. In each case, a pathological diagnosis was made. As needed baseline investigations, fine needle aspiration cytology, excision biopsy, throat, ear, and nose examinations were performed.

Result: This study involved 40 patients in total. 15 of the 40 patients had IPD, and the others had OPD. In this investigation, FNAC and biopsy were performed on all patients. The majority of observers in this study had tubercular lymphadenitis. Out of 40 patients, 24 (or 60%) were men and 16, or 40%, were women. Age groups 30-40 years (22.5%), 10-20 years (22.5%), and 20-30 years (32.5%) had the highest percentage of patients, respectively. Out of 40 patients, 25 (62.5%) had Tubercular Lymphadenitis, and 5 (12.5%) had Chronic Non-Specific Lymphadenitis. Reactive lymphadenitis was discovered in 4 (10%) patients, malignant secondary tumours in 4 (10%) patients, lymphomas in 1 (2.5%), and non-lymphoma Hodgkin's in 1 (2.5%) patients.

Conclusion: Following a clinical assessment of the lymphadenopathy, FNAC is used as a trustworthy diagnostic test that is simple to use, cost-effective, and quick to produce correct results. The essential prerequisite for this is expert input. In lymphoma cases where a biopsy is used as a diagnostic technique, it is also beneficial. When the FNAC report is ambiguous, a biopsy is highly

beneficial for an accurate diagnosis and course of treatment in nonspecific lymphadenitis. Hence, it was discovered that FNAC was a trustworthy, easy-to-use, and affordable approach for diagnosis in cases with lymphadenopathy.

Keywords: Lymphadenopathy, FNAC, Biopsy, Tubercular Lymphadenitis.

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Introduction

Lymphadenopathy is a prevalent clinical issue that commonly causes diagnostic conundrums. The lymphatic system includes lymph nodes. Cancer cells, viruses, and other undesirable things are carefully filtered out by lymph nodes and expelled from the body. This could be a primary or subsequent feature of many diseases.[1]

A typical issue that is evaluated as lymphadenopathy is the enlargement of lymph nodes. Lymphadenopathy is a term used to describe an anomaly in the size and function of lymph nodes; it is also used to describe abnormally enlarged lymph nodes that are more than 10 mm in diameter. Supraclavicular nodes that can be felt are considered abnormal and to have lymphadenopathy. They are due to the condition being self-limiting, with bacterial and viral infections being common causes. [2]

Lymphadenopathy can afflict people of any age, however it is most frequent in children and young adults, while it may be caused by secondary metastasis in later age groups. Cervical node swelling is a primary symptom of malignancies including leukaemia and lymphoma. There are numerous alternative diagnosis for lymphadenopathy, as well as examination and treatment options.

Due to its early results, ease of use, and low risk to the patient, fine needle aspiration cytology (FNAC) has emerged as a key technique for the initial diagnosis and therapy of patients with lymphadenopathy.

This test is suitable for regular diagnosis since it is rapid, dependable, affordable, and

safe. In particular in cases of occult primary, the identification of lymph node-metastatic tumour would be the sole criterion for diagnosing primary tumour. [3]

Examination of cervical lymphadenopathy is never simple and challenging in differential diagnoses because it shares symptoms with a number of illnesses, including inflammatory and neoplastic conditions. [4-7] Lymphadenopathy can be diagnosed via aspiration cytology, open biopsy, and clinical assessment, among other techniques. Every technique has pros and cons of its own. The current gold standard for diagnosing lymphadenopathy is histopathology testing. [8,9]

This study primary goal is to correlate clinical and pathological conditions that manifest as lymphadenopathy. Node biopsy and open lymph will also be used to assess the role of FNAC in diagnosis.

Material and Methods

From June 2018 to November 2018, the study was carried out in the pathology department of the Darbhanga Medical College and Hospital, Laheriasarai, Bihar. This study comprised individuals with severe lymphadenopathy who were attending OPD and IPD patients.

The study involved 40 patients in total. Fine needle aspiration cytology (FNAC) was performed on each of the 40 patients. In each case, a pathological diagnosis was made. As needed baseline investigations, fine needle aspiration cytology, excision biopsy, throat, ear, and nose examinations were performed.

Result

This study involved 40 patients in total. 15 of the 40 patients had IPD, and the others had OPD. In this investigation, FNAC and biopsy were performed on all patients. The majority of observers in this study had tubercular lymphadenitis. According to Table 1, of the 40 patients, 24 (60%) were men and 16 (40%) were women.

Table 1: Sex distribution of Patients

Sex	Number	Percentage
Male	24	60.0%
Female	16	40.0%
Total	40	100%

The majority of patients in this study (32.5%) belonged to the 20–30 age group. This was followed by the 30–40 age group (22.5%) and the 10–20 age group (22.5%), as indicated in table no. 2. There were more instances of tuberculosis detected in the age categories of 20 to 30 and 30 to 40 years than in any other age range. Patients over 50 years old tended to have clusters of malignant secondary tumours.

Table 2: Age and sex distribution.

Age group in years	No	Percentage
10-20	9	22.5%
20-30	13	32.5%
30-40	9	22.5%
40-50	5	12.5%
50-60	4	10.0%
Total	40	100%

The more typical kind of lymphadenitis in this investigation is tubercular. Of of 40 patients, 25 (62.5%) had Tubercular Lymphadenitis as their diagnosis. Five (12.5%) of the patients had a diagnosis of chronic non-specific lymphadenitis. In 4 (10%) patients, reactive lymphadenitis was identified. Four patients (10%) had malignant secondary tumours identified, compared to one patient (2.5%) who had non-lymphoma Hodgkin's and one patient (2.5%) who had lymphomas. Hence, tuberculosis was the most prevalent cause of lymphadenopathy among the numerous causes, as shown in table no. 3.

Table 3: Histopathological diagnosis

Cytology	Number	Percentage
Tubercular Lymphadenitis	25	62.5%
Reactive lymphadenitis	4	10.0%
Secundaris	4	10.0%
Chronic Non-specific Lymphadenitis	5	12.5%
Hodgkin's Lymphoma	1	2.5%
Non- Hodgkin's Lymphoma	1	2.5%
Total	40	100%

Neck swelling was the most frequent presenting complaint in this study, as demonstrated in table no. 4 of the incidence of presenting symptoms. Out of 40 cases, 19 (47.5%) had neck swelling as their primary symptom, followed by fever in seven instances (17.5%), weight loss in three cases (7.5%), and malaise in two cases (5%), respectively.

Table 4: Incidence of presenting symptoms

Presenting symptoms	Number of cases	Percentage
Neck swelling	19	47.5%
Fever	7	17.5%
Cough	6	15.0%
Change of voice	1	2.5%
Malaise	2	5%
Loss of appetite	2	5%
Loss of weight	3	7.5%
Total	40	100%

Discussion

Age, sex, clinical findings, symptoms, presenting complaints, and results of FNAC and biopsy have all been taken into account when analysing the data in this study. In this study, 25 patients (62.5%) had lymphadenitis due to tuberculosis, compared to 5 (12.5%) who have chronic non-specific lymphadenitis. In 4 (10%) patients, reactive lymphadenitis was identified. Four patients (10.1%) had malignant secondary diagnoses, compared to one patient (2.5%) who had lymphomas and one patient (2.5%) who had non-lymphoma, Hodgkin's which is almost identical to other studies by Dandapat *et al.*, [10]. Prasad RR *et al.* [11], Mundal A *et al.* [12], and Das Gupta *et al.* [13] The most typical manifestation of neck swelling is cervical lymphadenitis. In a research by Gupta *et al.*, [14] 74% of patients had tuberculous aetiology as their diagnosis.

In the current study, out of the 40 patients, 25 patients had tuberculosis, and 32.5%, or 13 instances, were in the 20–30 age range, which was comparable to Pandit *et al* study [15], in which the mean age of presentation was in the 20–30 year range. The mean age of presentation was 25 years in the study by Narang *et al.* [17] and 26 years in the study

by Rakshan *et al.*[16]. The results of our study are consistent with these studies.

In the current investigation, it was shown that the most frequent presenting complaint was neck edema. Neck swelling symptoms were present in 47.5% of cases, followed by fever (17.5%), weight loss (7.5%), malaise (5.0%), and lack of appetite (5%) in that order, which was nearly identical to other research. Including Khan, [18] Desai and others, [19].

Ahmed *et al* study [20] and Hirachand *et al* study [21] reported an incidence of 12% for secondary cases and 12% overall. Based on the uniformity, immobility, and fixedness of the lymph nodes, a clinical diagnosis was made. As a result, the FNAC diagnosis represented roughly 90% of the clinical diagnosis in this investigation. Comparable to the current study, the overall clinical diagnosis rate in Chamyal and Sabargirish study was 88.3%. [22]

The findings of Siddiqui *et al.*, [24] where male was predominance was quite more than this study, agree with the findings of Ramani *et al.*, [23] which shows that Hodgkin's lymphoma 25% found the median age of presentation of Hodgkin's lymphoma in India

as 34 years which is lower than that seen in the west.

The gold standard for diagnosis is an open biopsy and histological investigation. B. C. Jha *et al.* [4] revealed that tuberculous lymphadenitis was 92.8% sensitive. According to Dandapat M.C., *et al.* [10], TB has an 83% sensitivity rate. This study is fairly similar to that of Mondal A., *et al.*, who demonstrated 100% sensitivity in tuberculous and phylogenic lymphadenitis, Hodgkin's disease, 98% for metastatic deposits, 97% for chronic non-specific lymphadenitis, and 92% for non-lymphomas.

From this investigation, it was discovered that FNAC is one of the most crucial diagnostic tools for accurately diagnosing lymphadenopathy. That can be done quickly and safely. A protocol diagnosis of Lymphadenopathy cases can be made for evaluation based on all the aforementioned observations.

Conclusion

A clinical sign of both systemic and local illness is lymphadenopathy. Both benign and malignant causes are possible. According to this study, chronic non-specific lymphadenitis was the second most common cause of lymphadenopathy after tuberculosis. Malignant tumours are less frequent than benign lesions in lymph nodes. Whereas malignancies mostly affect older age groups, TB is more prevalent in younger age groups.

The jugulodi gastric nodes are the second most frequent group of lymph nodes to be involved in tuberculosis after the posterior triangle nodes. It may be said that FNAC, a proven diagnostic test that is simple to use, affordable, and quick to produce correct results, is used after a clinical evaluation of lymphadenopathy. The essential prerequisite for this is expert input. In lymphoma cases where a biopsy is used as a diagnostic technique, it is also beneficial. When the

FNAC report is ambiguous, a biopsy is highly beneficial for an accurate diagnosis and course of treatment in nonspecific lymphadenitis. As a result, this study is particularly beneficial for patients from underserved communities and aids in proper management with fewer investigative procedures. Also, it raises awareness of this region's lymphadenitis, including tubercular lymphadenitis.

It is more accurate to diagnose secondary deposits, lymphomas, and lymphadenitis with FNAC (fine needle aspiration cytology). It is less accurate for the diagnosis of persistent non-specific lymphadenitis. Hence, it was discovered that FNAC was a trustworthy, easy-to-use, and affordable approach for diagnosis in cases with lymphadenopathy.

References

1. Shafiullah, Syed H, *et al.* Tuberculous lymphadenitis on Afghan refugees. *J Pathol.*, 1999; 187: 28-38.
2. Robbins and Cotran Pathological basis of Disease 8th edtn
3. Abramowitz I. "Lymph tissue of the Head and Neck", in Lee McGregor's synopsis of surgical anatomy, 12th Edition. John Wright and Sons, 1999; 193-195.
4. Jha B C, Dass A. Cervical Tuberculous lymphadenopathy: changing clinical patterns and concepts in management. *Postgraduate Med. J.*, 2001; 77(905): 185-7.
5. Jindal N, Devi B, Aggarwal A. Mycobacterial cervical lymphadenopathy in childhood. *Post-graduate Med. J.*, 2002; 87: 182-3.
6. Nataraj G, Kurup S, Pandit A, Mehta P. Correlation of FNAC, smear and culture intubercular lymphadenitis: a prospective study. *Indian J Pathol.*, 2001; 82: 96-97.
7. Arora B, Arora DR. FNAC in diagnosis of tubercular lymphadenitis. *Indian J Medical Research*, 1990; 91: 189-92.

8. Kim LH, Peh SC, Chen KS. Pattern of lymphnode Pathology in a private laboratory. *Malays J Pathol.*, 1999; 21(2): 87-93.
9. Aruna D, Mahapatro S. Correlation of FNAC with histopathological study in peripheral lymph node lesions. *Indian J Pathol Microbiol.*, 1999; 30(2): 96-98.
10. Dandapat MC, Mishra BM, Dash SP, Kar PK. Peripheral lymph node tuberculosis: a review of 80 cases. *Br J Surg.*, 1990 Aug; 77(8): 911-12.
11. Dasgupta A, Ghosh RN, Poddar AK. FNAC of cervical lymph nodes with special reference to tuberculosis. *J Indian Med Assoc.*, 1994 Feb; 92(2): 44-6.
12. Mondal A, Mukherjee D, Chatterjee DN. FNAC in diagnosis of cervical lymphadenopathy. *J Ind Med Assoc.*, 1989 Dec; 87(2): 281-3.
13. Prasad RR, Narasimhan R. Shankaran V. FNAC in diagnosis of superficial Lymphadenopathy: an analysis of 2418 cases. *Diagcytopathol.*, 1996 Dec; 15(5): 382-6.
14. Gupta AK, Nayar M, Chandra M. Critical appraisal of fine needle aspiration cytology in tuberculous lymphadenitis. *Acta Cytol.* 1992;36(3):391-4.
15. Pandit A, Candes FP, Khubchandani SR. Fine needle aspiration cytology of Lymph node., *Journal of Postgraduate Medicine* 1987;33:134-136.
16. Rakhshan M, Rakhshan A. The diagnostic accuracy of fine needle aspiration cytology in Neck lymphoid masses. *Iranian J Pathol* 2008; 4:147-50.
17. Narang RK, Pradhan S, Singh RP, Chaturvedi S. Place of fine needle Aspiration cytology in the diagnosis of Lymphadenopath. *Indian Journal of Surgery.* 1990; 37:29-31.
18. Khan RA, Wahab S, Chana RS, Naseem S, Siddique S. Children with significant cervical lymphadenopathy: clinic pathological analysis and role of fine-needle aspiration in Indian setup. *J Pediatr (Rio J).* 2008;84(5):449-454.
19. Desai HV, Daxini AB, Pandey AS, Raval VK, Modh DA. Clinical profile of patients with tubercular lymphadenitis. *Int J Res Med.* 2015; 4(4):22-27
20. Dandapat Dandapat, M.C. Panda, B.K., Patra, A.K. and Acharya, N. Diagnosis of tubercular lymphadenitis by Fine Needle Aspiration Cytology. *Ind. J. Tub.* 1987, 34,139-142.
21. Ahmed N, Israr S, Ashraf MS. Comparison of fine needle aspiration cytology and excision biopsy in the diagnosis of cervical lymphadenopathy. *Pak J Surg.* 2009;25(2):72-5.
22. 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.* 2009;7(26):139-42.
23. Chamyal PC, Sabarigirish K. Clinico pathological correlation study of cervical lymph node masses. *Int J Otolaryngol Head Neck Surg.* 1997;49(4):404-5.
24. Ramani A, Kumar KA, Rao KK, Vidyasagar MS, Kandaje GN. A clinicopathological Profile of lymphomas in South India. *Journal Association Physician of India* 1992;40(4):282-283.
25. Siddiqui N, Ayub B, Badar F, Zaidi A. Hodgkin's lymphoma in Pakistan: a clinico-epidemiological study of 658 cases at a cancer center in Lahore. *Asian Pac J Cancer Prev.* 2006;7(4): 651–655.
26. Hewitt HB, Blake ER. Further studies of the relationship between lymphatic dissemination and lymph nodal metastasis in a non immunogenic murine tumors. *Br. J Cancer.* 2006; 35: 45.
27. Ammari FF, Bani Hani AH. Tuberculosis of lymph glands of neck: a limited role for surgery. *Otolaryngol Head and Neck Surgery.* 2003; 128(4): 576-80