

ORIGINAL ARTICLE

Outcome of Lymph Node Biopsy in Gulab Devi Chest Hospital

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ABSTRACT

Background: Lymph node biopsy is a diagnostic procedure done in lymphadenopathy. Lymphadenopathy is an abnormal increase in size of lymph nodes which may be due to infection, inflammation, malignancy and many other diseases.

Objective: To see the histopathological outcome of lymph node biopsy and to see the sensitivity and specificity of lymph node biopsy in Tuberculosis and malignancy.

Methods: 212 patients with lymph node enlargement who had lymph node biopsies at the Gulab Devi hospital Lahore in 2012. The clinical parameters age, fever, and weight loss were measured at initial examination. Fine needle aspiration cytology was done in all patients. The patients were divided into 4 groups 1st Tuberculous, 2nd cancerous, 3rd specific reactive hyperplasia and 4th one is tuberculous abscess. These groups were compared based on patient's clinical parameters. Biopsies were taken from different area of cervical, supraclavicular, axillaries, and submandibular and mediastinal lymph nodes depending upon area involved.

Results: Out of 212 patients, 148(69.81%) presented with cervical, 34(16.03%) were presented with supraclavicular, 19(8.96%) were presented with axillary, 6(2.83%) were presented with submandibular lymphadenopathy. Only 5(2.35%) cases of mediastinal lymphadenopathy were reported. The final diagnosis indicated that the patient had Tuberculosis (132; 62.25%), 60(28.30%) had cancer and 20(9.43%) had nonspecific reactive hyperplasia.

Conclusion: Tuberculous lymphadenitis (62.25%) represented the commonest infectious etiology in our study and malignancy (28.30%) was the second major cause. Therefore histological proof is necessary in suspected case of lymphadenopathy.

Key words: Lymphadenopathy, Tuberculosis, Malignancy, Biopsy.

INTRODUCTION

Lymphadenopathy refers to lymph nodes which are abnormal in size, number or consistency^[1] and is often used as a synonym for swollen or enlarged lymph nodes. Common causes of lymphadenopathy are infection, autoimmune disease, or malignancy. Lymphadenopathy is a symptom which frequently presents in primary care settings and affects patients of all ages. The lymph node enlargement some times raises fears about serious illness². It could be due to infection, autoimmune disease and malignancy. There are three types of Lymphadenopathy³. These are (i) localized Lymphadenopathy, due to localized infection (ii) Generalized Lymphadenopathy, may be due to generalized infection all over the body (iii) dermatopathic Lymphadenopathy is Lymphadenopathy associated with skin diseases. Based on the duration, Lymphadenopathy is further classified into Acute Lymphadenopathy (2 week duration), subacute lymphadenopathy (2-6

weeks duration) and chronic lymphadenopathy is considered in any lymphadenopathy that does not resolve by 6 weeks. The condition is generally not a disease itself; rather, it may be a symptom of one of many possible underlying problems. It is a critical manifestation of regional or systemic diseases and serves as an excellent clue to the underlying disease. Lymphadenopathy is a common presentation in the course of a number of diseases. The disease can be neoplastic or inflammatory, and include lymphoma, metastatic carcinoma, Caseous Granulomatous disease, necrotizing lymphadenitis. Few patients with inflammatory Lymphadenopathy are associated with discharging sinus, and these causes are mainly due to tuberculosis and some other infections. Since Lymphadenopathy is not a manifestation of a single disease, diagnosis becomes very difficult and moreover, it requires more knowledge about the differential diagnosis of Lymphadenopathy. Most patients can be

diagnosed on the basis of a careful history , physical examination⁴. Five main reasons for performing lymph node biopsy ⁵(i) To make a diagnosis in a case of persistent, unexplained lymph node enlargement. The Lymphadenopathy may be localized or generalized and the approach to the problem will differ upon this, as upon other consideration, such as the patient's age, general status of health and other finding on physical examination. (ii) To make a diagnosis or assist in the investigation of a patient who has unexplained symptoms, such as weight loss or fever accompanied by Lymphadenopathy. The lymph node enlargement may be relatively insignificant in cases of this kind and obviously lymph node biopsy is indicated only where other investigation have failed to establish a diagnosis. (iii) To confirm a diagnosis already suspected on other grounds. (iv) To assess the extent of spread of known malignant disease.(v) To monitor the progress of disease in a patient with malignant lymphomas. Lymph node biopsies are taken in Hodgkin's disease. Two specific indications for biopsy are (a) Enlarged nodes persisting after therapy which would normally be effective in that particular disease and situation; (b) Enlarged nodes which appear in a patient previously in remission after effective therapy⁷. A non invasive diagnostic evaluation may uncover the cause of lymphadenopathy, but in numerous cases a definite diagnosis cannot be established. In such cases doctor should decide either to wait or closely observe the patient or to precede a lymph node biopsy. A delay diagnosis of a serious, especially malignant, disease may be critical for a patient. On the other hand an unnecessary lymph node biopsy may increase patient anxiety and medical cost. However decision-making process for lymph node biopsy has been empirical⁴.

METHODES AND MATERIAL

Study was conducted at Gulab Devi Chest Hospital over a period of 4 months. 212 Patients included in this study with history of unexplained lymphadenopathy of more than one month duration, non responsive to antibiotic therapy and failure to reach the proper diagnosis after routine investigations like complete blood picture, chest x-ray etc. Out of 212 patients mostly have the complaints of Fever and weight loss and some patients have associated cough also. Complete history and physical examination has been done in all patients prior to lymph node biopsy.

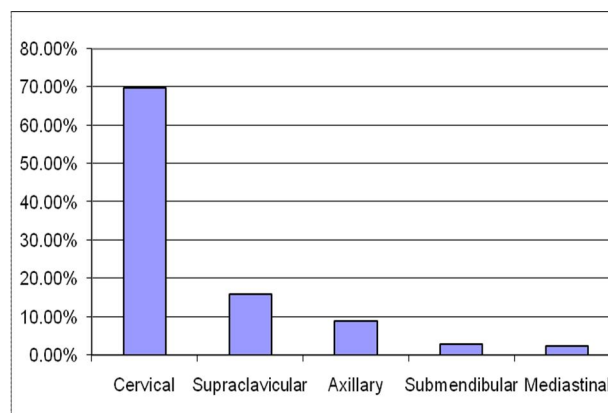
After taking consent and explaining the procedure to the patients clinical parameters were measured at initial examination. FNAB were carried out in all patients. Aspirations were performed using a 23-gauge needle, and a 20-ml syringe. All specimens were adequate for histopathological examination. Lymph node biopsy was performed when a clinical significant enlarged lymph node persisted and increased in size despite the appropriate therapy; other diagnostic test had failed to show its etiology, and when malignant lymphoma suggested, there was a suspicion of serious underlying disease.

RESULTS

This study includes 212 patients, 82 males (38.67%), 130(61.32%) females, aged 5-70 years, with mean age of 32 years. Female gender predominated 61.32% in the study population. All specimens were adequate for histopathological examination. Out of 212 cases 148(69.81%) have cervical lymphadenopathy, 34(16.03%) have supraclavicular, 19(8.96%) have axillary, 6(2.83%) have submendibular, 5(2.35%) have mediastinal lymphadenopathy.

Table 1: Distribution of Lymph Nodes

Type	No. of Cases
Cervical	148(69.81%)
Supraclavicular	34(16.03%)
Axillary	19(8.96%)
Submendibular	6(2.83%)
Mediastinal	5(2.35%)



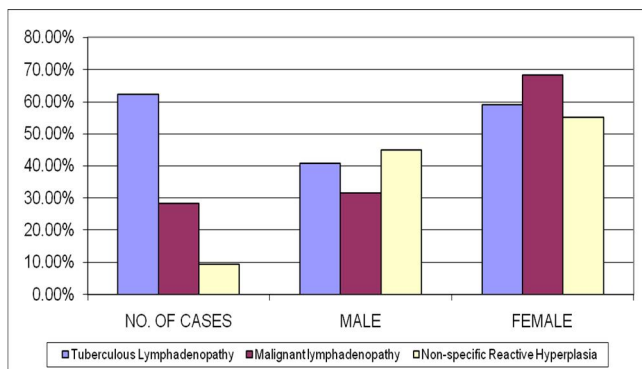
86.79% patients presented with fever, 26.41% with weight loss and some patients had associated cough, sputum and dyspnea also. The patients were divided into 3 groups, including Tuberculous

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lymphadenitis, cancerous lymphadenitis and non specific hyperplasia. The final results showed that 132(62.25%), patient had Tuberculosis, 60(28.30%) had cancer and 20(9.43%) had nonspecific reactive hyperplasia.

Table 2: Histopathological Diagnosis of Lymph Node Biopsy

Diagnosis	No. of Cases	Male	Female
Tuberculous Lymphadenopathy	132 (62.25%)	54(40.90 %)	78(59.09 %)
Malignant lymphadenopathy	60(28.30 %)	19(31.66 %)	41(68.33 %)
Non-specific Reactive Hyperplasia	20(9.43 %)	9(45%)	11(55%)
Total	212	82	130



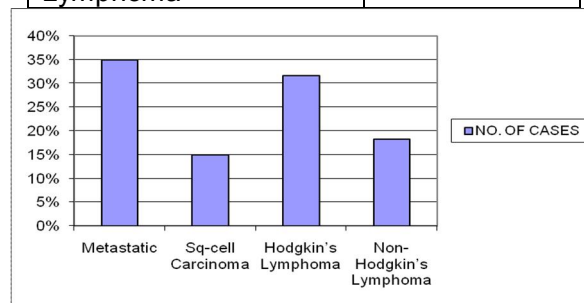
Among 132 Tuberculous lymphadenitis cases 54(40.90%) were males and 78(59.09%) were females. Out of these total Tuberculous lymphadenitis cases. 21 had single lymph node and 111 had two or more out of which 99 were mated. Common complaints of these patients were low grade fever and average weight loss 2-3 kg from last 6 months.

Among 60 cases of malignancy 21(35%) were metastatic, 9(15%) squamous-cell carcinoma, 19(31.66%) Hodgkin's lymphoma and 11(18.33%) were diagnosed as non Hodgkin's lymphoma. These patients presented with hard lymph nodes and rapidly developing symptoms. Marked weight loss was seen (6 kg weight loss in last 3 months) in these patients. Pressure symptoms including dysphagea, facial congestion and dyspnea were also present. 33 patients have double area

involvement and hepatosplenomegaly clinically as well as on ultrasound.

Table 3: Distribution of Malignancy

TYPE MALIGNANCY	NO. OF CASES
Metastatic	21(35%)
Sq-cell Carcinoma	9(15%)
Hodgkin's Lymphoma	19(31.66%)
Non-Hodgkin's Lymphoma	11(18.33%)



DISCUSSION

Superficial lymphadenopathy is a common clinical finding, it may be due to inflammation, malignant lymphoma or metastatic malignancy⁹. Usually lymphadenopathy cannot be easily diagnosed on clinical grounds or by routine laboratory investigation and a series of specific investigations may be required to reach a definite diagnosis. Because of early availability of results, simplicity, minimal trauma and complication, the FNAB is considered as a valuable diagnostic tool¹⁰.

In our study lymph node biopsy was done in 212 patients, 82 male (38.67%), 130(61.32%) female, aged 5-70 years, with mean age of 32 years. Female gender predominated 61.32% in the study population as has been found by others¹¹. However few reports showed male predominance¹². In our study the most common site of involvement was cervical lymph node in 69.81% of cases, this observation is comparable with the findings of Egea et al, who reported 67.5% cervical lymph node involvement and also comparable with another study who has 73.6% cases of cervical lymph node¹³.

Tuberculous lymphadenitis 58% represented the commonest infectious etiology of lymphadenopathy¹⁴. It is commonest form of extra pulmonary tuberculosis¹⁵. A prospective evaluation of 80 patients in general surgical outdoor of Mayo Hospital Lahore over a period of one year (1990 –

1991) showed tuberculosis in 43 (54%), non-specific reactive hyperplasia in 16 (20%) and acute lymphadenitis 4(5%) cases¹⁶, while in our study there was Tuberculosis in 132(62.25%) cases, 60(28.30%) had malignant lymphadenopathy and 20 (9.43%) had nonspecific reactive hyperplasia.

Our findings constituted 132 (62.25%) cases of Tuberculous lymphadenopathy, which is comparable with the study of Ahmad SS et al⁹ having 32.8% cases of Tuberculous lymphadenopathy, and with those described by Tilak et al¹⁶. In our study Among 60 cases had malignancy and out of which 21(35%) were metastatic, 9(15%) squamous-cell carcinoma, 19(31.66%) Hodgkin's lymphoma and 11(18.33%) were diagnosed as non Hodgkin's lymphoma this is comparable with study done by Russell K. Brynes¹⁷

CONCLUSION

Tuberculosis is commonest cause of lymphadenopathy in our part of the world followed by malignancy

REFERENCES

1. King, D; Ramachandra, J; Yeomanson, D (2 January 2014). "Lymphadenopathy in children: refer or reassure?". *Archives of disease in childhood. Education and practice edition*. doi:10.1136/archdischild-2013-304443. PMID 24385291.
2. Perisie, Glick M. Cervical lymphadenopathy in dental patient: a review of clinical approach. *Quintessence int*. 2005; 36(6):423-36
3. .wikipedia.org/wiki/Lymphadenopathy
4. Obafunwajo, olomu LN, onyia. Primary peripheral lymphadenopathy in jos, Nigeria. *West afr Med* 1992; 2; 25-8
5. Pangalis GA, Boussiatis VA, Fessas P, Plliack A. Clinical approach to patient with lymphadenopathy. In: Pangalis GA, Polliack A, editors.
6. Leung AKC, Robson LM. Childhood cervical lymphadenopathy. *J Pediatr Health Care* 2004;18: 3–.
7. Ahmad SS, Akhtar S, Akhter K, Naseem S, Mansoor T. Study of fine needle aspiration cytology in lymphadenopathy with special reference to acid fast staining in cases of tuberculosis. *JK Science* 2005; 7:1-4.
8. Dandapat MC, Mishra BM, Dash SP, Kar PK. Peripheral lymph node tuberculosis. A review of 80 cases. *Br J Surg*. 1990;77: 911.
9. Ahmad I. Primary lymphadenopathy presentation and evaluation. *Specialist* 1992;8(4):13.
10. Krishnaswami H, Koshi G, Kulkarni KG, Job CK. Tuberculous lymphadenitis in south India. A histopathological and bacteriological study. *Tubercle* 1972; 53: 215.
11. Hussian J, Jafarey NA. A clinicopathological study of chronic cervical lymphadenitis in children. *JPMA* 1966; 319.
12. Younus M. Tuberculous lymphadenitis. *Specialist* 1987; 3: 47.
13. Egea AS, Gonzalez MAM et al. usefulness of light microscopy in lymph node fine needle aspiration biopsy. *Acta Cytologica* 2002;47: 368-69.
14. Abdel Wahab MF, El-Din SS. Azab M, El-Tawil AA, Fawzy RA, Seene HA, et al. Comparative study between recent diagnostic techniques in undetermined lymphadenopathies. *N Egypt J Med* 1992; 6:1512-8.
15. Lau SK, Kwan S, Lee J, Sei WI. Source of tubercle bacilli in cervical lymph node. *J Laryngol Otol* 1991; 105: 558-6
16. Tilak V, Dhadel AV, Jain R. Fine needle aspiration cytology of head and neck masses. *Ind J Path Microbiol* 2002; 45 (1); 23-30
17. Russell K. Brynes, MD; Wing C. Chan, MB, BS; Thomas J. Spira, MD; Edwin P. Ewing Jr, MD; Francis W. Chandler, DVM, PhD *JAMA*. 1983;250(10):1313-1317.