

A 4-year Study of Lymph Node Biopsy in the Patients belonging to the Labour Class

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ABSTRACT

Objective: To evaluate the rate of tuberculosis and other diseases in the patients having lymphadenopathy and find out the value of lymph node biopsy in various diagnoses.

Study Design: Retrospective study

Place and Duration of Study: This study was conducted at the Department of surgery, Sindh Employees Social Security Hospital Landhi, Karachi and Kulsoom Bai Valika Social Security Hospital S.I.T.E, Karachi, from April 2010 to July 2013.

Materials and Methods: A retrospective study of the case sheets and biopsy reports was done. The reports of the patients of all age groups ranging from 1 to 70 years who underwent lymph node biopsy were evaluated. The patients were initially treated by local G.Ps for various complaints associated with superficial lymphadenopathy. After the failure of relief by the treatment of variable period, they were referred to our hospitals. All of our patients belonged to socio-economically low labor class.

Results: Out of 55 operated patients of lymph node biopsy included in this study, 19 (34.54%) were males and 36 (65.45%) were females. The majority of the patients 42 (76.36%) were those having cervical lymphadenopathy. Others were having axillary 08 (14.54%), inguinal 02 (3.63%) and mesenteric 03 (5.45%) lymphadenopathy. Twenty three (41.81%) had reactive changes, 27 (49.09%) had TB, 02 (3.63%) had malignancy and 03 (5.45%) had other lesions.

Conclusion: TB infection is alarmingly high in our society which is affecting the young generation. Health care authorities should address the issue. Moreover, the common tools like FNAC should be used prior to excision biopsy as it is easy, cheap and with fewer complications. It can give accurate diagnosis in many of the cases of superficial lymphadenopathies.

Key Words: Tuberculous lymphadenopathy, Lymphadenitis, Lymph node biopsy, FNAC

INTRODUCTION

Enlarged lymph node sometimes raises fears about serious illness. It usually results from benign infectious causes. The fear arises due to the variety of causes which include microbial, hematological, neoplastic, and connective tissue disorders¹.

A non-invasive diagnostic evaluation may uncover the cause of lymphadenopathy, but in numerous cases a definite diagnosis cannot be established. In such cases the doctor should decide either to wait and closely observe the patient or to proceed to a lymph node biopsy. It is obvious that a delayed diagnosis of a serious, especially malignant, disease may be critical for the patient. On the other hands an unnecessary lymph node biopsy may increase patient's anxiety and the medical costs². A 3 to 4 week period of observation is prudent in patients with localized nodes and a benign clinical picture³.

Chronic cervical lymphadenopathy (enlarged lymph node for more than 3 weeks) may result from a variety of different underlying diseases. Metastatic carcinoma from the head and neck is the most important of these and must be borne in mind of the clinician before embarking on an open lymph node biopsy. Open

cervical lymph node biopsy is a common procedure in surgical practice. Traditionally, it plays an important role in the diagnosis as well as in the treatment of cervical tuberculous lymphadenopathy, especially the atypical *Mycobacterium tuberculosis* (*M. tuberculosis*). Over the last 10 years, fine needle aspiration biopsy (FNAB) has played an important role in the diagnosis of cervical lymphadenopathy with high sensitivity and specificity for malignancy, especially squamous cell carcinoma, and for tuberculosis^{4,5,6}. On the other hand, many cases of other diseases with lymph node swelling cannot be diagnosed without a lymph node biopsy.

MATERIALS AND METHODS

During the 4-year period (April 2010 to July 2013), a total of 55 patients underwent biopsy of different lymph node groups for diagnostic purpose at our institutions. A retrospective review of case notes of the patients who had diagnostic lymph node biopsy during last 4 years was done. Indication for surgical biopsy was based on clinical suspicion following a history, assessment and no response to the initial empirical course of antibiotics prescribed in the out-patient clinic. Few patients who were operated for suspected acute appendicitis and found having mesenteric lymphadenitis were also

included in this study. The patients were divided into seven age groups, ranging from 1 to 70 years, who were referred from local GPs after prescribing routine course of antibiotics for more than 2 weeks and did not respond to the therapy

RESULTS

Out of 55 operated patients of lymph node biopsy included in this study, 19 (34.54%) were males and 36 (65.45%) were females. The majority of the patients, 42 (76.36%) were those having cervical lymphadenopathy. Others were having axillary 08 (14.54%), inguinal 02 (3.63%) and mesenteric 03 (5.45%). Twenty three (41.81%) had reactive changes, 27 (49.09%) had TB, 02 (3.63%) had malignant lesion and 03 (5.45%) had other lesions (Figure-I).

In the age group 1 which included the patients ranging from 1 to 10 years, had 2 males and no females. Both of the patients (100%) had cervical group of lymph nodes

involved, and were diagnosed as having reactive changes. In the age group 2, ranging from 11 to 20 years, included 02 male and 19 female patients. Out of 21 patients, 20 (95.23%) had cervical group and 1 (4.76%) had axillary group of lymph nodes involved. Among those, 13 (61.9%) had reactive changes and 08 (38.09%) had TB. In the age group 3, ranging from 21 to 30 years, included 07 male and 06 female patients. Out of 13 patients, 09 (69.23%) had cervical group, 3 (23.07%) had axillary and 1 (7.69%) had mesenteric group of lymph nodes involved. Among those, 03 (23.07%) had reactive changes and 10 (76.92%) had TB. In the age group 4, ranging from 31 to 40 years, included 04 patients each male and female. Out of 08 patients, 05 (62.5%) had cervical group, 01 (12.5%) had axillary, 01 (12.5%) had inguinal and 01 (12.5%) had mesenteric group of lymph nodes involved. Among those, 02 (25%) had reactive changes, 05 (62.5%) had TB and 01 (12.5%) had fibrocollagenous calcification.

Table No.I: Overview of the patients included in the study & their diagnoses

Age Group in Years (n=55)	Sex		Site of the Lesion				Diagnosis			
	Male (n=19)	Female (n=36)	Cervical (n=42)	Axillary (n=08)	Inguinal (n=02)	Mesenteric (n=03)	Reactive changes (n=23)	T.B (n=27)	Malignancy (n=02)	Other (n=03)
Group 1 (1-10)	02	00	02	00	00	00	02	00	00	00
Group 2 (11-20)	02	19	20	01	00	00	13	08	00	00
Group 3 (21-30)	07	06	09	03	00	01	03	10	00	00
Group 4 (31-40)	04	04	05	01	01	01	02	05	00	01
Group 5 (41-50)	01	05	03	02	01	00	03	02	00	01
Group 6 (51-60)	01	02	02	00	00	01	00	01	01	01
Group 7 (61-70)	02	00	01	01	00	00	00	01	01	00

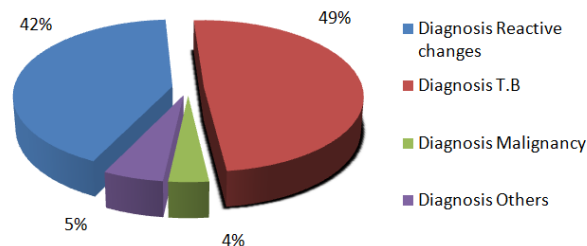


Figure No.1: The chart showing percentage of various diagnoses

In the age group 5, ranging from 41 to 50 years, included 01 male and 05 female patients. Out of 06 patients, 03 (50%) had cervical group, 02 (33.33%) had axillary and 01 (16.66%) had inguinal group of lymph nodes involved. Among those, 03 (50%) had reactive changes, 02 (33.33%) had TB and 01 (16.66%) had hyperplasia associated with skin lesion, the pilomatrixoma. In the age group 6, ranging from 51 to 60 years, included 01 male and 02 female patients. Out of 03 patients, 02 (66.66%) had cervical group and 1 (33.33%) had mesenteric group of lymph nodes involved. Among those, 01(33.33%) had TB, 01

(33.33%) had malignancy with unclear primary lesion and 01 (33.33%) had fibrocollagenous calcification. In the age group 7, ranging from 61 to 70 years, included 02 male patients only. Out of both patients, 01 (50%) had cervical group and 1 (50%) had axillary group of lymph nodes involved. Among those, 01 (50%) had TB and 01 (50%) had metastatic lesion (Table-I).

DISCUSSION

The study shows that, at both of the hospitals, the management of patients undergoing diagnostic lymph node biopsy did not include FNAC which is an easy, economic and effective way of diagnosis⁷. Although it was tried in 3 patients but the results were inconclusive. Two children underwent the excision biopsy and proved to be having reactive hyperplasia which did not require vigorous treatment. Forty two (76.36%) had involved the cervical group of the lymph nodes. A significant number of those diagnosed were having reactive hyperplasia which shows that the most of the patients were suffering from common upper respiratory problems, hence necessitating the consultation with ENT specialist prior to biopsy⁸.

Moreover, it insists to use clinical acumen and non-surgical tools like ultrasound^{9,10,11,12} and FNAC^{13,14,15,16}, for which we can use the experience of Greenfield and Jordan¹⁷.

Tuberculosis is common in South Asian countries¹⁸. The matter of concern revealed in our study is an alarmingly high rate of tuberculosis (49%) prevailing in our society. It is quite comparable with the study conducted by Shankar Lal Rathi, which shows its rate around fifty percent¹⁹. Our study also reveals that it affects our young generation. The patients in our study belong to a labor class. They are living in small houses with large number of family members living in one room. The hygienic condition of the dwelling of that class is also poor. Lack of education and hence the ignorance to vaccination, like BCG, may be another cause of the high rate of TB in our society.

Two cases (3.63%) having malignancy, whether primary or metastatic, found in our study belong to an elderly group. This is quite comparable in other studies which show 1.1% cases of malignancy diagnosed by lymph node biopsy²⁰. Therefore, some clinicians insist to perform early lymph node biopsy as this will provide the chance of early remedy to the malignant conditions diagnosed²¹.

CONCLUSION

The rate of TB infection is alarmingly high in our society which is affecting young generation²². Cervical lymphadenitis is the commonest cause of extrapulmonary tuberculosis²³. It is slowly destroying our powerful youth belonging to the labor class. Health care authorities should address the issue. FNAC should be used prior to excision biopsy which can give accurate diagnosis in many of the cases of superficial lymphadenopathies^{24,25,26,27}.

REFERENCES

1. Obafunwa JO, Olomu LN, Onyia NJ. Primary peripheral lymphadenopathy in Jos, Nigeria. *West Afr J Med* 1992;2:25–8.
2. Pangalis GA, Boussiotis VA, Fessas P, Plliack A. Clinical approach to patient with lymphadenopathy. In: Pangalis GA, Polliack A, editors. *Benign and malignant lymphadenopathies. Clinical and laboratory diagnosis*. London: Harwood Academic Publishers;1993.p.19.
3. Hoosein S, Mahmood N. Lymphadenopathy in children – approach to the patient. *Med Today* 2003;1(4):112-3.
4. Martin DA, James OA, Allen SL, John EN. *Clinical Oncology*. 2nd ed. London (UK): Churchill Livingstone Inc; 2000.p.2620-2629.

5. Bowling MC. Lymph node specimens: Achieving technical excellence. *Laboratory Med* 1979;10: 467-476.
6. Khan UF, Khan RAH, Ashraf J, Barki NU. Fine Needle Aspiration Biopsy versus Excision Biopsy in Tuberculous Cervical Lymphadenitis. *J Rawal Med Coll* 2001;5(1):21-4.
7. Hanif G, Hamid T, Zaman S, Mir F. Tuberculosis in children – the role of fine needle aspiration. *Ann King Edward Med Uni* 2000;6-4:414-6.
8. Moor JW, Murray P, Inwood J, Gouldebrough D, Bem C. Diagnostic Biopsy of Lymph Nodes of the Neck, Axilla and Groin: Rhyme, Reason or Chance? *Ann R Coll Surg Engl* 2008;90(3): 221–225.
9. Tschammier A, Beer M, Hahn D. Differential diagnosis of lymphadenopathy: power Doppler vs color Doppler sonography. *Eur Radiol* 2002; 12:1794–9.
10. Blum A, Schlagenhauff B, Stroebel W, Breuninger H, Rassner G, Garbe C. Ultrasound examination of regional lymph nodes significantly improves early detection of locoregional metastases during the follow-up of patients with cutaneous melanoma: results of a prospective study of 1288 patients. *Cancer*. 2000;88:2534–9.
11. Dragoni F, Cartoni C, Pescarmona E, Chiarotti F, Puopolo M. The role of high resolution pulsed and Doppler ultrasound in the differential diagnosis of benign and malignant lymphadenopathy: results of multivariate analysis. *Cancer* 1999;85:2485–90.
12. Wu CH, Shih HC, Chang YL, Lee SY, Hseih FJ. Two-dimensional and three-dimensional power Doppler sonographic classification of vascular patterns in cervical lymphadenopathies. *J Ultrasound Med*1998;17:459–64.
13. Schafernak KT, Kluskens LF, Ariga R, Reddy VB, Gattuso P. Fine-needle aspiration of superficial and deeply seated lymph nodes on patients with and without a history of malignancy: a review of 439 cases. *Diagn Cytopathol* 2003;29:315–9.
14. Lioe TF, Elliott H, Allen DC, Spence RA. The role of fine needle aspiration cytology (FNAC) in the investigation of superficial lymphadenopathy; uses and limitations of the technique. *Cytopathol* 1999;10:291–7.
15. Akhtar SS, Imran-Ul-Haq A, Faiz-U-Din M, Reves LM. Efficacy of fine-needle capillary biopsy in the assessment of patients with superficial lymphadenopathy. *Cancer* 1997;85:27–80.
16. Layfield LJ. Fine-needle aspiration of the head and neck. *Pathol* 1996;4:409–38.

17. Greendfield S, Jordan MC. The clinical investigation of lymphadenopathy in primary care practice. JAMA 1978;240:1388–93.
18. Ibrahim Mansoor, Sayed Abdul Aziz. Cervical lymph node biopsy: Clinical and histological significance. Saudi Med J 2002; 23(10):1291-92.
19. Shankar Lal Rathi. Role of fine needle aspiration cytology in early diagnosis of lymphadenopathy. J Liaquat Uni Med Health Sci 2004;3(1):11-3.
20. Leung AKC, Robson LM. Childhood cervical lymphadenopathy. J Pediatr Health Care 2004;18: 3–7.
21. Takeshita T, Asao H, Ohtani K, Ishii N, Kumaki S, Tanaka N, et al. Cloning of the α chain of the human IL-2 receptor. Science 1992;257:379–82.

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