# Tuberculosis- Commonest Cause of Lymphadenopathy in Developing Countries

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**A three years retrospective study from 1st January 1999 to 31st December 2001 was undertaken to evaluate the incidence of tuberculous lymphadenopathy. A total number of 164 patients were studied. Tuberculosis remained the commonest being (52%) and rest had reactive hyperplasia (38%), primary neoplasm (5%) and metastatic lymph nodes(4%). Two patients had sinus histiocytosis. Age ranged between 6-65 years with mean of 32 years. Cervical group was the most common (71%) submitted for histopathological examination. Lymphadenopathy commonly involved the female population (61%).**

**Key words: Tuberculous lymphadenopathy, non specific lymphatic hyperplasia, lymphoma**

The body has approximately 600 lymph nodes, but only those in the submandibular, axillary or inguinal region may normally be palpable in healthy people[1]. Lymphadenopathy refers to nodes that are abnormal in either size, consistency or number. The commonest reasons of lymphadenopathy include infections and cancers. There are various classifications of lymphadenopathy but a simple and clinically useful system is to classify lymphadenopathy as "generalized" if lymph nodes are enlarged in two or more non-contiguous areas or "localized" if only one area is involved. In primary care patient with unexplained lymphadenopathy, approximately 3/4th of the patient will present with localized lymphadenopathy and 1/4th with generalized lymphadenopathy[2,3].

The tuberculosis is the most prevalent disease in our society, incidence of which is on a rise throughout the world mostly due to emergence of drug resistant strains and HIV[4]. The most common presentation in cervical lymphadenopathy may be unilateral lymph node chain enlargement, bilateral lymph node involvement or cold abscess[5]. This study was undertaken to evaluate the incidence of tuberculous lymph adenopathy in our set up.

## Material and method

The study was carried out on 164 patients who presented with lymphadenopathy during past three years i.e., from 01-01-1999 to 31-12-2001 in Pathology Department of Fatima Jinnah Medical College, Lahore. The specimen was examined for any gross abnormality. The representative sections were processed routinely, paraffin blocks were made. Histopathological slides were prepared and stained with haemotoxylin and eosin stain. Histological examination of prepared slides was carried out and recorded. Clinical data on histopathological request form was analysed. This included name, age, sex, address and region of lymphadenopathy. All histopathological proven cases of tuberculosis were further evaluated and study was compared with other local and foreign studies.

## Results

During study period of three years, 164 patients were evaluated. The lymph adenopathy was mainly due to infection, specific or non specific in young patients, whereas neoplastic lesions mainly involve relatively older one (Table 1). Females were commonly involved with male to female ratio of 6.4:10 (Table 2). Tuberculous lymphadenopathy was the commonest lesion present in (52%), reactive hyperplasia which mainly involve the younger age group due to throat infection was present in 38% (Table 3). All patients with tuberculous lymphadenitis had characteristic features on histopathological examination in the form of epitheloid cells, caseous necrosis and Langhan's type of Giant cell. Cervical group of lymph node was the commonest site of lesion being present in 74%, axillary group was the next common present in 14% (Table 4).

Table 1. Age and sex ratio

| Diagnosis | Age range | Mean age |
|---|---|---|
| Tuberculous lymphadenopathy | 8-60 years | 26 |
| Reactive hyperplasia | 6-65 years | 21 |
| Lymphoma | 8-62 years | 42 |
| Secondaries | 27-62 years | 55 |
| Sinus histeocytosis | 45-47 years | 46 |

Table 2. Male:Female ratio

| Diagnosis | Male | Female |
|---|---|---|
| Tuberculous lymphadenopathy | 27 | 58 |
| Reactive hyperplasia | 31 | 32 |
| Lymphoma | 5 | 3 |
| Secondaries | 0 | 6 |
| Sinus histeocytosis | 1 | 1 |
| Total | 64 | 100 |

Table 3. Diagnosis on histopathology

| Diagnosis | n= | %age |
|---|---|---|
| Tuberculous lymphadenopathy | 85 | 52% |
| Reactive hyperplasia | 63 | 38% |
| Lymphoma | 8 | 4% |
| Secondaries | 6 | |
| Sinus histeocytosis | 2 | |
| Total | 164 | 100 |

Table 4. Regions of lymph adenopathy. (n=164)

| Diagnosis | Cervical | Inguinal | Axillary | Submandibular |
|---|---|---|---|---|
| Tuberculous lymph-adenopathy | 65 | 4 | 10 | 6 |
| Reactive hyperplasia | 40 | 5 | 12 | 6 |
| Lymphoma | 6 | 2 | 0 | 0 |
| Secondaries | 5 | 0 | 1 | 0 |
| Sinus histeocytosis | 1 | 1 | 0 | 0 |
| Total | 117 | 12 | 23 | 12 |

**Discussion**

Although the findings of lymph adenopathy raises fear about serious illness, it is, in patients seen in primary care setting, usually a result of benign infection. In general lymph node greater than 1cm diameter are considered to be abnormal. History and physical examination is important for diagnosis but final confirmation is based on histopathological examination. Whenever, the biopsy is indicated, excisional biopsy of the most abnormal node will enable the pathologist to determine the diagnosis[6]. The incidence of extrapulmonary tuberculosis has increased more than three times from 1991 to 1996 i.e., 2.7% to 17.3%. The main factor leading to this increase in this part of the world are inadequate BCG vaccination programme, poor socioeconomic environment, illiteracy, poor case finding, HIV infection, inproper treatment regarding dosage and duration resulting into emergence of multidrug resistance. The sensitivity to Rifampicin and INH, the most commonly used drug is 58% and 78% respectively[7].

In our set up, among infective causes, tuberculosis is the commonest one and over the last decade mycobacterial infection has shown rise in all parts of the world[4]. The number of new cases has increased from 7.5 million in 1991 to 8.8 million in 1995 and 10.2 million in 2000[7]. Hope of drastic reduction in the incidence of tuberculosis with availability of antituberculous drug has not been fulfilled. A 20 years study by Mahmood and Asghar[8] have shown that number of patients remained constant in each five years period from 1971 to 1991. The cervical lymph node represents 41% and the most commonly involved organ in extrapulmonary tuberculosis in developing countries[9].

Tuberculous lymph adenopathy involved predominantly younger age group and female population in our study. These results are comparable to other local studies carried out at Mayo Hospital and Sir Ganga Ram Hospital, Lahore in 1996 and 1999[5,7]. The involvement of adult population in their peak productive years of life causes enormous strain to the economy of developing country. Excisional biopsy is the more preferred and reliable method for diagnosis of tuberculous lymph adenopathy, which has sensitivity rate of 90% and specificity of 100%. Hence an effective and most practical method for diagnosis of tuberculous lymph adenopathy[10,11]. Our all cases underwent excisional biopsy and diagnosis was confirmed.

Non specific lymphadenopathy is the second most common cause, which commonly involves children and younger people due to repeated throat infection and such cases respond to antimicrobial therapy. It is recommended that before submitting these patients for excision biopsy throat swab should be sent for culture and sensitivity and antibiotics should be advised accordingly.

The low prevalence of malignancy in our study has been supported by two other series[2,3] from family practice department in USA in which none of 80 patients and three of 238 patients with unexplained lymph adenopathy were diagnosed as neoplastic lesion.

In conclusion, tuberculosis is still one of the commonest disease of developing country. The extrapulmonary tuberculosis in the form of lymph adenopathy commonly involves adult population in most productive years, and economic cost of morbidity due to this disease is also very substantial, thus causing enormous strain on developing countries economy. This is high time that priority is to be given to control this deadly disease and important task in front of our health planners to try to reduce the increasing incidence of this disease by creating awareness in general public, providing focussed education to doctors and paramedics. Plan for early case finding and provision of effective chemotherapy in term of dose and duration is important for all cases.

This integrated approach involving the masses, experienced persons and specialists can help in reducing the incidence of this dreadful disease successfully.

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