

Original research article**A Clinicopathological Study of Cervical Lymphadenopathy in Bihar****Dr. Santosh Kumar¹, Dr. Deo Kumar Singh², Dr. Sushant Kumar³****¹Senior Resident, Department of ENT, JNKTMCH****²Senior Resident, Department of Pathology, JNKTMCH****³Senior Resident, Department of ENT, DMCH****Corresponding Author: Dr. Santosh Kumar****Abstract**

Background: A great deal is there in the diagnosis of cervical lymphadenopathy where in approximately, 300 lymph nodes are present in the neck which drains several regions like upper aerodigestive tract, head and neck region, etc and also serves as a nidus for the secondary deposits of malignancy from primary sites like stomach, ovary,

Materials and methods – patients attending the ENT and surgery OPD of JNKTMCH, Madhepura, and General hospital, of all age groups and both genders having the neck swelling for more than 3 weeks were subjected for the study. Study duration of Two years.

Results: This study has shown that the incidence of tubercular lymphadenitis is more in the age group of 1st and 2nd decade and in low socioeconomic status while secondaries are more common in the elderly age group.

Conclusion: Cervical lymphadenopathy is a common clinical condition encountered in ENT out patient department. Tuberculous lymphadenopathy has the highest incidence in this study, which is seen more common in low socio economic status patients.

Keywords: Tubercular Lymphadenitis, Cervical Lymphadenopathy.

Introduction

There are around eight hundred lymph nodes in our body out of which not less than three hundred are cited in the neck, so enlargement of cervical lymph nodes is a common clinical condition encountered by the clinicians. As enlargement of the lymph nodes more than 1cm² indicates a clinical manifestation of regional or systemic disease and serves as an excellent clue to the underlying disease¹. Innovation in medicine is a continuous process. Use of the fine needle aspiration biopsy for diagnosis of palpable lesions is a classical example of the same. Persistent enlargement of the lymph node necessitates detailed investigations to reveal an underlying pathology. Although reasonably accurate diagnosis can be made clinically, histopathological examinations are mandatory to establish and confirm the diagnosis. These can be overcome by doing FNAC, as it is obtained easily and quickly which is simple and cheap and requires only a specialist input (cytologist)² The commonest causes for cervical lymphadenopathy are tuberculous lymphadenitis which is a common manifestation of extrapulmonary tuberculosis³, secondaries in the cervical lymph nodes, lymphomas and non specific lymphadenitis. In India tuberculosis is a major health problem due to enormous social and economic constraints. The human immunodeficiency virus (HIV) epidemic has been

associated with an increase in the total incidence of TB and an increased proportion of miliary, disseminated, and extrapulmonary TB cases including lymphadenitis²². western persistent cervical swelling in the neck in an adult patient is regarded as malignant until otherwise proved by histological evidence. The gold-standard biopsy modality in the workup of a neck mass is fine-needle aspiration (FNA). The sensitivity and specificity of FNA for both pediatric and adult head and neck masses have been reported to be approximately 97% when diagnostic material is obtained. FNA should always be done before the consideration of any open procedures. FNA can be used for both cytology and culture (in cases in which a suspected infectious neck mass does not respond to conventional antibiotic therapy). If an FNA is unsuccessful or if sufficient information is not obtained from an initial FNA, the FNA should be repeated before open biopsy²¹. This study "clinicopathological study of cervical lymphadenopathy" is carried out with a broad objective of assessing relative diagnostic efficacy of the clinical evaluation, fine needle aspiration biopsy and open biopsy. Thus a protocol for early management of cervical lymphadenopathy can be evolved.

Objectives

To know the confirmatory diagnosis of the underlying pathological variants, To know the prognosis of the disease, To know the incidence of the malignancies of aero digestive tract, presenting with cervical lymphadenitis.

Review of Literature

There followed sporadic reports of this technique, championed mostly by clinicians including Leydon who in 1883 used needle aspiration to obtain cells to isolate pneumonic microorganisms. Greig and Gray who in 1904 diagnosed trypanosomiasis in cervical lymph node aspirates from patients with sleeping sickness in Uganda⁴. Their findings were reported by a captain Bruce (later of Brucellosis fame) in a British Medical Journal memorandum in 1904. Afterwards there were other reports of a similar technique to puncture and diagnose lymph nodes infected by Leishmaniasis and secondary syphilis⁵. In the mid-1920s there were attempts in New York and Chicago to employ large needle (1.2-3.0mm) aspiration for a variety of sites ranging through lymph nodes, prostate and breast but over time the dimension of 1mm or less has come to be accepted as the definition of 'thin' or 'fine'^{5,6}.

A detailed and systematic study on FNAC was carried out in the late 1920s by Hayes Martin, a head and neck surgeon and James Ewing, the chief pathologist at the New York Memorial Hospital. Their experience comprising 2500 tumors annually was documented by Fred Stewart (a Histopathologist) who then enunciated the fundamental principles regarding the philosophy of aspiration biopsy and emphasized the need for close clinical and pathological co-operation. However, as their fears were laid to rest, the popularity of needle aspiration waned to such an extent that by the 1960s the technique was all but obsolete in the USA^{7,8}.

Interest in the procedure was resurrected by Europeans in the mid 1950s. Their practice invented a novel specialty of 'clinical cytologist' who would examine the patient, aspirate the lesion, prepare and read the slide and arrange subsequent onward referral. They thus provided a model for FNA services for the rest of the world such that it is now part of all sophisticated pathology departments^{5,6}. Elliot Abemayor in 1985 reported CAT directed fine needle aspiration biopsy of masses in Head and Neck region with good accuracy⁹. Richard H.V et al, 1998 in a study said that all adults with troublesome neck masses should undergo fine needle aspiration cytology. In presence of an expert cytologist, the information yield is high¹¹. Jandu M et al, in 1999 did a study, they got 100% accuracy where fine needle aspiration cytology was performed by consultant and 91% when performed by junior staff. They said fine needle

aspiration cytology is a useful diagnostic tool for head and neck masses¹². Svante R. Orell et al, in 1986 has stressed that FNAC as practiced today is still a new discipline and no one biopsy can claim to have vast experience to its every facet¹³. Annam V et.al conducted a study to emphasize the role of fine needle aspiration cytology (FNAC) in etiologic workup in significant cervical lymphadenopathy in children. A total of 336 consecutive children, aged 1 month to 12 years, with significant cervical lymphadenopathy were subjected to FNAC. Children on empirical/specific therapy for lymphadenopathy for >2 months and children with lymphadenopathy other than cervical region were excluded from this study. Of 324 cases, the cytomorphologic features observed were reactive lymphadenitis in 58.02% of cases, granulomatous lymphadenitis in 30.55%, and suppurative lymphadenitis in 7.10% and malignancies in 5.62%. The remaining 3.57% of cases were excluded because of inadequate aspiration. The most common cause diagnosed was tuberculosis in 29.01% of cases followed by chronic tonsillopharyngitis in 28.39%, suppurative lymphadenitis in 7.10%, human immune deficiency infection in 5.55% and malignancies in FNAC is an important diagnostic modality for the etiologic workup in significant cervical lymphadenopathy in children. It is almost as sensitive and specific as excision lymph node biopsy when an adequate aspirate is examined by expert eyes¹⁴.

The computerized tomography was found to be most specific (90%) when compared to clinical examination or ultrasonography (70% each)¹⁵. Showkat .A. Showkat et al conducted a study of 400 pediatric patients (0—12 yrs) who presented with cervico facial masses, were evaluated clinically and pathologically of which inflammatory lesions were 48% , congenital and developmental malformations 26%, cystic lesions 19%, benign neoplastic lesions 7% and malignant neoplastic lesions 2%. FNAB (fine needle aspiration biopsy) was performed in 93% of cases and HPE (histopathological examination) was available in 51.5% of cases. Sensitivity of FNAB was 87.5% in this study²².

Material and methods

The Clinico pathological study of cervical lymphadenopathy". The study material consists of patients selected with history of cervical lymphadenopathy who came to ENT department at JNKTMCH, Madhepura, Bihar. as out patients and inpatients over a period of one and half years. Number of cases studied are 50. The diagnosis of cervical lymphadenopathy was made after taking detailed history, clinical examination and necessary investigations according to the proforma. All the patients were subjected to FNAC and in relevant cases biopsy was done.

Inclusion criteria

Selected patients who attend ENT OPD with cervical lymphadenopathy of all age groups and both sexes included.

Exclusion Criteria

Acute infective lymphadenitis cases excluded from this study.

Results

Following data obtained from study of 50 cases cervical lymphadenopathy at, JNKTMCH, Madhepura, over period of one and half years.

Table 1: Age group in cervical lymphadenopathy

| Age | TB Lymph denitis | Non specific lymphadnitis | Secondariesin neck | Hodgkins | Non Hodgkins | Total |
|--------------|------------------|---------------------------|--------------------|----------|--------------|-----------|
| 1-10 | 2 | 3 | - | - | - | 5 |
| 11-20 | 10 | 3 | - | - | - | 13 |
| 21-30 | 8 | 3 | 2 | | | 13 |
| 31-40 | 2 | - | - | 1 | - | 3 |
| 41-50 | 3 | 2 | 1 | - | - | 6 |
| 51-60 | - | - | 3 | - | 1 | 4 |
| 61-70 | 1 | 1 | 3 | - | - | 5 |
| 71-80 | - | - | 1 | - | - | 1 |
| Total | 26 | 12 | 10 | 1 | 1 | 50 |

Table 2: Cervical lymphadenopathy with respect to sex distribution

| Sex | Number of cases | Percentage |
|--------------|-----------------|------------|
| Male | 25 | 50 |
| Female | 25 | 50 |
| Total | 50 | 100 |

Table 3: Socioeconomic Status in Patients of Cervical Lymphadenopathy

| Socio economic status | Low | Middle | High | Total |
|---------------------------|-----------|-----------|----------|-----------|
| Tuberculous lymphadenitis | 21 | 5 | - | 26 |
| Secondaries in neck | 9 | 1 | - | 10 |
| Nonspecific lymphanetitis | 6 | 6 | - | 12 |
| Hodgkin | 1 | - | - | 1 |
| Non hodgkins lymphoma | 1 | - | - | 1 |
| Total | 38 | 12 | - | 50 |

High incidence of cervical lymphadenopathy was seen in low socioeconomic status patients amounting to 38 case i.e. 76%. Followed by middle group of 12 cases (24%)

Table 4: Side of lymphadenopathy

| Sl.no. | Neck side involved | Number of cases | Percentage |
|--------|--------------------|-----------------|------------|
| 1. | Right | 23 | 46 |
| 2. | Left | 19 | 38 |
| 3. | Both sides | 7 | 14 |
| 4 | Central | 1 | 02 |

Table 5: Benign and malignant lesions in cervical lymphadenopathy

| Lesions | Total number cases | Percentage |
|--------------|--------------------|------------|
| Benign | 38 | 76 |
| Malignant | 12 | 24 |
| Total | 50 | 100 |

It is observed from above that TB lymphadenitis has maximum incidence 26 cases (52%), secondaries in neck 10 cases (20%) nonspecific lymphadenitis 12 cases (24%), hodgkins lymphoma one cases (2%) and non hodgkins lymphoma one (2%).

The clinical diagnosis made among 50 cases of this study, 41 cases were consistent with FNAC

result, nine were not consistent. Hence the clinical diagnostic accuracy in this study is 82%.

Table 6: Accuracy of FNAC with respect to lymph node biopsy

| FNAC | TB lymphadenitis | Non specific lymphadenitis | Hodgkins lymphoma | Non hodkins lymphoma | Total |
|-------|------------------|----------------------------|-------------------|----------------------|-------|
| TBL | 13 | - | - | - | 13 |
| NSLN | 2 | 7 | - | - | 09 |
| HL | - | - | 1 | - | 01 |
| NHL | - | - | - | 1 | 01 |
| TOTAL | 15 | 7 | 1 | 1 | 24 |

Among 24 lymphnode biopsies done in this study reports were consistent with FNAC reports, two not consistent with FNAC reports. Hence the accuracy of FNAC with respect to biopsy in this study was 91.66%. Total 50 cases were studied of which 26 cases consisted of Tuberculous lymphadenitis, 10 cases of secondaries in neck, 12 cases of nonspecific lymphadenitis one case of Hodgkins lymphoma and one case of non Hodgkins lymphoma.

Discussion

More number of cases were in age group of 11-20yrs and 21-30yrs amounting to 26% each with 13 cases in each age group. followed by 12% in the age group of 41-50yrs and 10% each in 1-10yrs and 61-70yrs. TB lymphadenitis is observed more in age group of 11-20yrs and 21-30yrs. Secondaries observed in 51-60 yrs and 61-70yrs. Meerabai conducted a study in 2004 and observed that more number of cases were seen in 4-30 age group 11 cases amounting to 22%. 16% in 11-20 years age group, 16% in 31-40 group TB lymphadenitis was more in 21-30 age, secondaries observed in 41-50 age group. In the series of Chamyal P.C et al 1997⁵⁵ incidence of cervical lymphadenopathy was highest in 41-60 age followed by 1-20 years. Pranshu Bhargave et al 2002¹⁸ in their series observed TB Lymphadenitis has highest incidence and in age group of 21-40 (95%) In this study males and females are affected equally with M:F ratio being 1:1. While study conducted by Meera Bai in 2004, ratio was 1.2:1, Bhargave p. et al M.F.ratio was 1:1.6 Richard swarz et al 1990¹⁹ had a male : female ratio of 1.43: 1. The observations made by A.K. Sarda et al 1990²⁰ had M.F. ratio of 1.3:1. Right side of neck was involved in 23 cases(46%) followed by 19 cases(38%) on left side, bilateral involvement is seen in 7 cases(14%) and least involved were central group accounting for 2% with 1 case, compared to the study of meera bai in 2004 which shows left side involvement to be more common. Left side of the neck was involved in 25 cases (50%) right side in 21 cases (42%) and bilateral involvement was seen in 4 cases (8%) in her study. All the 50 cases in this study presented with swelling in the cervical region among them 13 had only swelling as symptom, 20 cases had swelling with fever, 14 cases had swelling, fever, pain and only 3 cases had swelling with pain. Among the 50 cervical lymphadenopathy cases clinically examined 39 patients had firm consistency (78%), 10 had hard consistency accounting for (20%) and in one case rubbery consistency. In study conducted by Meera Bai 2004 firm constituted 70%, hard 28%. In P.C.Chamyal et al series firm nodes constituted 65.5%, hard 29.1%, cystic 3.6% and soft 1.8%. Among 50 cases studied, it has been observed that 9 cases has matting of lymph nodes, 5 cases are fixed to the underlying structures and remaining 36 cases are mobile which is accounting for 18%, 10% and 72% respectively. Where as it has been seen that in P.C. Chamyal and sabarigirish series matting of cervical lymphnodes were noted in 16.4% of cases and 23.6% of cases fixity was noted. This shows that fixity of lymph nodes were much higher compared to our study. On clinical diagnosis of 50 cases 38 cases were benign of which 26 cases were TB lymphadenitis (52%), and 12 cases (24%) non specific lymphadenitis noted.

Remaining accounted for malignancy i. e. secondaries in the neck accounted for 10 cases (20%) and lymphomas 2 cases (4%). In A.K. S arada et al study of 359 patients 253 cases (86%) had tuberculous lymphadenitis 42 had nonspecific lymphadenitis 36 had secondaries and 18 had lymphomas. It has been observed by martin et al 1957 , AK Sarda, MM Singh et al 1990 opined to defer from open biopsy of neck nodes in malignancy for the possibility of tumour seedling, increase in distant metastases and local tumour recurrence. The above opinion is also confirmed by McCabe and McGuirt 1978. Among 24 biopsies done in this study 22 FNAC reports were consistent with biopsy reports two were not consistent, hence the accuracy of FNAC with respect to biopsy in this study was 91.66%. In A.K.Sarda et al series²⁰ Diagnostic accuracy of FANC was 97%. In P.C.Chamyal¹⁷ et al series FNAC accuracy was 88.3% and P.Bhargava¹⁸ et al 2002 series FNAC accuracy was 98%. It is noted from this study data that FNAC forms an important diagnostic tool to aid in the diagnosis of cervical lymphadenopathy as FNAC is very cost effective. Safe and easily done.

Conclusion

A. Tuberculous lymphadenopathy has the highest incidence in this study , which is seen more common in low socio economic status patients,B.TB Lymphadenopathy was high in 10 -20yrs and 21-30 age group i.e especially among the students, In elderly individuals cervical lymphadenopathy was mainly due to malignancy. The secondaries in neck has high incidence in aged individuals which may be attributed to their personal habits like smoking, alcoholism, tobacco chewing and poor orodental hygiene which might lead to malignancy in long term, Cervical lymphadenopathy is seen in midjugular nodes (level III) in the highest proportion of cases in this study followed by upper deep cervical nodes, supraclavicular nodes and posterior triangle nodes in the decreasing order of frequency.

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