

Study of Cervical Lymphadenitis, Correlation between Clinical Features, FNAC and Histopathology of Cervical Lymphadenitis

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ABSTRACT

Introduction: Chronic granulomatosis disease, particularly cervical lymph node tuberculosis, is endemic in various parts of the world. Present study was taken up to know the incidence and etiological factors of cervical lymphadenopathy and to know the correlation between clinical presentation, FNAC and histopathology of cervical lymphadenitis.

Material and Methods: This study includes 50 patients of cervical lymphadenopathy cases were studied taking detailed clinical history, physical examination and investigations, FNAC and biopsy were done.

Results: The commonest cause of cervical lymphadenopathy is Tuberculosis (68%) and the next most common cause is chronic non specific lymphadenopathy (30%). The commonest age group affected is 2nd and 3rd decades. Females (60%) Males (40%). A definite history of contact with tuberculosis was obtained only in 18% in this series. 74% of the patients in this series were from low income group and 66% lived in overcrowded conditions. Tuberculous lymphadenopathy was found more in urban population (76%) than in rural population (24%). In our study the specificity and sensitivity of FNAC of tuberculous cervical lymphadenopathy is 94 and 77 respectively. Totally out of 50 cases 24 cases were suspected to have tuberculosis from the clinical features by adding FNAC as the diagnostic modality we diagnosed 28 cases with help of histopathology diagnostic accuracy reached to 34 case with tuberculosis.

Conclusion: It can be concluded that FNAC is a reliable diagnostic tool in invasive surgical procedures undertaken in the diagnosis of tuberculous adenitis.

Keywords: Cervical Lymphadenitis, Clinical Features, FNAC and Histopathology, Cervical Lymphadenitis

INTRODUCTION

Neck consists of 300 lymph nodes¹ nearly 1/3 of the total lymph nodes of the body the enlargement of these nodes is significant because of many etiologic factors. Any infection of the upper respiratory tract can be associated with cervical adenitis, in adolescents infectious mononucleosis may begin with diffuse adenopathy. Chronic granulomatosis disease, particularly cervical lymph node tuberculosis, is endemic in various parts of the world. Sarcoidosis often affects Mediastinal and tracheal lymph nodes but cervical adenopathy is also common. Histoplasmosis, coccidioidomycosis and actinomycosis can also produce cervical lymphadenopathy. Salivary gland infection can also produce cervical lymphadenopathy. Massive lymphadenopathy in young and children is seen in reactive lymphoid lymphoplasia.² Malignant metastasis can also be the cause of cervical lymph node enlargement. Lymphoma also present as cervical lymphadenopathy. Among the different infective and inflammatory conditions of cervical lymphadenopathy tuberculosis is the most commonly found because of the high prevalence of the disease in our country.

Cervical lymph node involvement is the common extra-pulmonary manifestation of tuberculosis. It is commonly encounter in daily surgical out patient department in our country. Tuberculosis is a disease of great antiquity and has even found in Egyptian mummies.³ It remains a major disease on a world wide basis. Fortunately by effective host defense mechanism and improved social conditions have brought down the disease to low levels in developed countries. It is still common in developing countries like India. The risk is highly increased in immunocompromised patients. Tuberculous lymphadenopathy commonly affects adolescents and young adult's children are also affected.⁴ Common age of affected children is 0-5years. Neck lymph nodes are the commonly affected. Mycobacterium bovis was considered to be the causative agent of tuberculous lymphadenopathy in the past. But now mycobacterium tuberculosis is responsible for most of the tuberculous lymphadenopathy and mycobacterium bovis in some of thecases. This study comprises of 50 cases of cervical lymphadenopathy taken from Prathima hospital, Karimnagar during the period 2011 to 2014. This study was done to know the incidence and etiological factors of cervical lymphadenopathy, the distribution according to age, sex, urban-rural population, socioeconomic conditions of patients. This study mainly focuses on inflammatory and infective causes, correlation between clinical features, FNAC, histopathology and specificity and sensitivity of FNAC cervical lymphadenopathy.

MATERIAL AND METHODS

This study included 50 patients who attended the surgical OPD of Chalmeda Anada Rao Institute of Medical Sciences, karimnagar between august 2015 – march 2016. In this series 50 cases were studied taking detailed clinical history, physical examination and investigations. After physical examination and arriving at clinical diagnosis confirmation was done by FNAC and biopsy. Lymph node biopsy was the most important of these.

Inclusion criteria: Cases of inflammatory and infective were taken

Exclusion criteria: Cases of secondary's in neck and lymphomas were excluded.

Details of patients as name, age, sex, religion, address,

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occupation of the patients were noted. Cases were taken at random and only cases who gave consent for lymph node biopsy were taken for study. All patients were given anti-tuberculous drugs using DOTS strategy with 2 months intensive therapy and 4 months with continuation phase therapy with drugs isoniazid, rifampicin, ethambutol and pyrazinamide.

STATISTICAL ANALYSIS

Statistical analysis was done by calculating sample percentage value. No correlation was done, as this study involves only descriptive analysis.

RESULTS

Tuberculous lymphadenopathy was the commonest cause of cervical lymphadenopathy with 68% followed by chronic nonspecific lymphadenopathy with 30% and fungal infection 2% (Table-1).

The results of a study series of fine needle aspiration (FNA) biopsies from the head and neck region of 50 patients has been reviewed in order to evaluate the efficacy of this method in the diagnosis of tuberculous lymphadenopathy (TBLN). Of the 35 patients whose fine needle aspiration cytology (FNAC) showed granulomatous changes, 50 had subsequent surgery and histological confirmation of the cytological appearance. 34 had TBLN, thus the specificity of FNAC was 94 per cent in diagnosing tuberculous related granulomatous lymphadenopathy. One false positive FNAC was reported histologically to be non specific. Of the 50 patients, 34 patients had subsequently TBLN confirmed histologically. Of these 34 patients, FNA from 34 showed granulomatous changes or acid fast bacilli (AFB), thus the sensitivity of FNAC in detecting tuberculous lymphadenopathy was 77 per cent. All the 50 patients who presentation to the out patient department were subjected to through clinical examination, FNAC and histopathology (Table-2).

Out of the 50 patients 24 were suspected to have tuberculous

Aetiology	Number	Percentage
Tuberculous Lymphadenopathy	34	68
Non Specific Lymphadenopathy	15	30
Fungal Infection	1	2
Age Distribution		
0-10	1	2
11-20	20	40
21-30	13	26
31-40	11	22
41-50	3	6
51-60	1	2
>60	1	2
History of contact with tuberculosis		
No history of contact	41	82
Definite history of contact	9	18
Sex Distribution		
Male	20	40
Female	30	60
Income Group		
Low (<2000)	37	74%
Middle (2000-6000)	12	24%
High (>6000)	1	2%

Table-1: Demographic details of study

Living Conditions	Number		Percentage
Overcrowding (4 or more persons living in one room)	33		66%
Less than 4 persons living in one room	17		34%
Aetiology	Area	Number	Percentage
Tuberculosis 68%	Urban	25	50
	Rural	9	18
Chronic non-specific 32%	Urban	15	30
	Rural	1	2
Symptoms			
Swelling in the neck	50		100
Axillary Swelling	2		4
Inguinal Swelling	2		4
Fever	15		30
Loss of weight	20		20
Loss of appetite	20		40
Soar throat	1		2
Cough	1		2
Discharging sinus	1		2
Cold abscess	4		8
Old sinus scar	1		2
Pain	3		6
Caries tooth	1		2
Lymph nodes			
Unilateral right	16		32
Left	20		40
Bilateral	14		28
Other group of lymph nodes	5		10

Table-2: Living conditions, incidence of cervical lymphadenopathy in urban and rural areas, symptoms.

Group of lymph nodes	
Sub-mandibular and Submental	16%
Upper anterior and deep cervical	28%
Upper posterior deep cervical	40%
Lower anterior and deep cervical	28%
Lower posterior deep cervical	24%

Table-3: Group of lymph nodes.

cervical lymphadenopathy. All the patients were subjected to FNAC AND histopathology with the help of FNAC we were able to make out the diagnosis of tuberculosis to 28 patients with the help of FNAC and histopathology combined we could diagnose tuberculosis in 34 patients out of 50 patients in our study. In our study series the sensitivity and specificity of FNAC of tuberculous cervical lymphadenopathy was 77 and 94.

DISCUSSION

The total number of cases studied were 50 who attended the surgical outpatient department of Chalmeda Ananda Rao Institute of Medical Sciences Hospital, Karimnagar.

Aetiology of cervical lymphadenopathy: It can be seen from the study that tuberculous lymphadenopathy was the commonest cause of cervical lymphadenopathy with 68% followed by chronic nonspecific lymphadenopathy with 30% and 2% fungal infection.

Age Incidence: In 50 cases the disease commonly affected the

2nd decades with 19% and 3rd decades with 18% respectively. 4% of cases affected were in this group in the present study. In Wilson's⁷ series of 100 cases the common age group of patients was in the 2nd and 3rd decade followed by the 4th decade with 25%, 32% and 13% respectively. In B.P. Trivedi's⁹ series of 235 cases also the commonest age group of presentation was in the 2nd and 3rd decade with 44% and 35%. Next common age groups affected were 1st and 4th decade with 10% and 8% respectively. In S.P. Pamra's⁵ series of 322 cases the commonest age group affected were 2nd and 3rd decades with 25% and 35%. In the present study chronic nonspecific adenopathy affected were 2nd decade 18% and 3rd decade 8% respectively. Commonest age group affected is between 11 and 20, 21, and 30 closely followed by 31 and 40 years nonspecific lymphadenopathy commonly affects the age group of 11 to 20, 21 to 30 and less commonly 1 to 10. The causative agent in this age group is atypical mycobacterium. In adults the causative agent is most commonly the mycobacterium tuberculosis. Only 5% are due to atypical mycobacterium. In one study of 343 children with reported lymphadenitis due to atypical mycobacterium 136 were of 3 years or younger age. 194 were younger than 5 years – only 5 children were younger than 1 year. It cannot be assumed that all cervical lymphadenopathy in children were caused by atypical mycobacteria. About 5 - 10% of childhood lymphadenopathy was due to mycobacterium tuberculosis. In another series studied by Hooper¹⁰, tuberculous lymphadenopathy was most common in the age group of 20 to 40 years. In the Prabhakar's series earliest presentation was in a 9 month old infant and late age of occurrence was 90 years the average age being 33.6 years. The average age of presentation was 37 years.

History of Tuberculosis: There was no definite history of contact with tuberculosis in 82% of cases. A definite history was obtained in only 18% of cases. In S.K. Sen series of tuberculous cervical lymphadenopathy of 386 cases, 78.8% cases had no history of contact with tuberculosis, 19.1% had definitive history of contact with tuberculosis.

Sex Incidence: There was increased incidence of tuberculous cervical lymphadenopathy in females than males. All the studies in the past show a definite increased incidence of cervical lymphadenopathy in females. The incidence was more in Trivedi series 57% (1953), Jone's series 58% (1953), S.K. Sen's series 58.6% (1955) and S.D. Pamra's series 57.08% (1987). In the present study it was present in Males 48% and females 52%. The increased incidence in females may be because of the wide prevalence of malnourishment in females. The other factors influencing the higher incidence in females are overcrowding, lack of education, early marriage, pregnancy, large families, and poor socioeconomic conditions.

Incidence in different income groups: The Economic and living conditions were taken into consideration to find out the incidence of cervical lymphadenopathy in the studied series. In this study series, 74% of the patients belonged to the low income group, 24% belonged to the middle income group. Only 2% of patients belonged to the higher income group. In S. K. Sen's series, 65.9% belonged to the low income group and 31.6% belonged to the middle income group. Only 2.5% were of the higher income group. The majority of the patients belong to the lower socioeconomic status and lesser number of patients

were in middle income group. The higher economic status group was the least affected. This shows living conditions of the patients, here 66% of patients in this study lived in overcrowded conditions i.e 4 or more than 4 persons lived in one room. In S.K. Sen's series 76.7% lived in overcrowded conditions.

Incidence in urban and rural areas: 50% of the patients had tuberculous lymphadenopathy and belongs to urban areas. 18% of the patients had tuberculosis and belongs to rural area. 30% patients belonged to urban areas and 2% of the patients' belonged to rural areas. Overcrowding is an important factor for the spread of tuberculosis having higher incidence in urban areas.

Presenting symptoms of the studied series: All patients in the present study had cervical lymph node swelling. Other presenting symptoms were weight loss and loss of appetite (20%), fever (30%), axillary and inguinal swellings (4%), cold abscesses (8%), pain (6%), sore throat, cough, discharging sinus, old sinus scars and caries tooth (2%).

Group of lymph nodes involved: There was unilateral involvement of node in 72% of cases. Right side was affected in 32% and left side was affected in 40% of cases bilateral involvement in 14% of the cases. In 10% of cases other groups of lymph nodes were affected. In S.K. Sen series there was bilateral neck node involvement in 54.5%, unilateral in 45.5% and neck nodes associated with other group of lymph nodes in 28.5% of cases.

Various groups involved in cervical lymphadenopathy: It is evident that the upper anterior deep cervical group of nodes are the most commonly involved. Jugulodigastric nodes were the commonest in this group because tonsils are the common route of entry for the tuberculous bacilli. In the present study upper posterior deep cervical nodes were the commonest (40%) affected.

Chest Radiography findings: Generalized tuberculosis is very common and may or may not be associated with a known focus in the body. In Faber's series 20% had associated active lesion on chest x-ray and in S.D. Purohit's⁶ series 33% of patients had associated active pulmonary tuberculosis as shown by chest x-ray.

The higher incidence was found in Faber's series (20%), lowest in Wilmont's⁸ series (5%) in the present study the incidence was 16%. The disease is mainly confined to the cervical group of lymph nodes. When the primary complex occurs in the lungs, the disease may also be generalized with lesions elsewhere in the body. The behaviour of these nodes closely resembles that of the peripheral adenitis following infection or injury at the drainage site.

Biopsy: It is the confirmatory diagnostic aid. It was done in all the cases. Only histologically proved cases of tuberculous lymphadenopathy and chronic non specific lymphadenopathy were included in the present study. No case of Sarcoidosis was reported in this study. In the present series 68% were caseating lymphadenitis, 32% were non caseating lymphadenitis or non specific lymphadenitis. Anti tubercular treatment was started in all patients with proven tuberculous lymphadenopathy. Limited excisional surgery was done in 2 patients who had sinuses. Aspiration was done in 4 patients who had cold abscesses, under

cover of anti tuberculous therapy. All cases were followed up for 6 to 9 months after starting chemotherapy.

Follow Up: All the cases of tuberculous lymphadenopathy were advised to take the antitubercular drugs regularly for 6 to 9 months and advised to come back for regular monthly follow up. Most of the patients responded well for chemotherapy. A few patients were lost for follow up.

Response to treatment: In the present study most of the patients responded to short course chemotherapy with four drugs. A few were lost for follow up. Surgery was limited in patients with cold abscesses and sinuses along with ATT.

CONCLUSION

It can be concluded that FNAC is a reliable diagnostic tool in helping invasive surgical procedures undertaken in the diagnosis of tuberculous adenitis. The Ziehl-Neelsen stain to identify AFB should be incorporated as an adjunct to increase the diagnostic accuracy of tuberculous lymphadenitis. From our study there is a definite correlation between clinical features, FNAC and histopathology as we can diagnose tuberculous cervical lymphadenopathy with more cases being confirmed with the disease after histopathology.

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