Clinical Study on Tuberculous Cervical Lymphadenopathy

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PLACE OF STUDY: Thanjavur Medical College Hospital, Thanjavur

ABSTRACT

70 cases of cervical tuberculous lymphadenitis are studied, subjected to FANC/excision biopsy, analysed in detail and the following conclusions are drawn.

According to the present study, tuberculous cervical lymphadenopathy was more common among the female population with an increasing incidence in the 21-30 years of age. Swelling in the neck was the most common presenting complaint followed by fever, pain, weight loss and cough. Upper deep cervical group of nodes were the most commonly involved and most of the nodes were discrete and firm in consistency. All the patients were subjected to histopathological examination (FNAC/Excision Biopsy) and were started on ATT based on the reports and as per the RNTCP guidelines. All the patients had a 100% cure rate at the end of the study which included the follow up period of 6 months. Surgical treatments are only adjunctive to chemotherapy and not a replacement.

AIMS AND OBJECTIVES

- To study about the incidence of tuberculous cervical lymphadenopathy.
- To study about the clinical presentations (signs, symptoms) of tuberculous cervical lymphadenopathy.
- To correlate clinical diagnosis with the histopathological findings of tuberculous cervical lymphadenopathy and to interpret the results.
- To study about the clinical work-up and the various management options, their outcome and to follow up the clinical behaviour and improvement in the course of tuberculous cervical lymphadenopathy for a period of not more than 6 months.

MATERIALS AND METHODS

The study was conducted on 70 cases of Tuberculous cervical lymhadenitis presenting to the outpatient department of Thanjavur Medical College Hospital. This study was conducted on patients presenting to the OPD during the period of Aug 2016 to Aug 2017. This study was conducted by collecting data from individual patients in the form of pretested proforma. All the patients were exposed to FNAC/Excision Biopsy and were started on Anti – tuberculous treatment only after confirming the diagnosis based on the clinical findings and the histopathological reports.

RESULTS

In our present series, the incidence of tuberculous cervical lymphadenopathy was maximum in the age group of 21-30 years (35 cases-50%). The disease showed a increasing incidence in females as compared to the male patients with the female to male ratio being 1.5:1. It is more common in the lower socio-economic status people (90%). The disease shows increased incidence among the rural population which accounts for about 70% of the cases. All the 70 cases presented with the complaint of swelling in the neck. 14% of the cases presented with fever, 7% of the cases presented with pain, weight loss and cough respectively. About 70% of the cases presented within 3 months of the start of the symptoms. The left side nodes are most commonly involved (57.1%). The lymph node involvement was discrete in 77.1% of the cases and firm in 70% of the cases. 22.9% of the cases presented with matted lymph nodes according to the present study. The upper deep cervical nodes were involved in 60% of the cases which was the most common lymph node involved in tuberculous cervical lymphadenopathy.57.1% % of the cases presented with raised ESR according to the present study. 8.6% of the cases had features suggestive of pulmonary tuberculosis on chest x-ray. 82.9% of the cases showed caseating granuloma on FNAC. FNAC was inconclusive in 17.1% of the cases which were then subsequently subjected to Excision Biopsy which proved positive for tuberculous cervical lymphadenopathy. Tuberculin test was positive in 27.1% of the cases. The patients were then categorised as Category I or Category II patients and were put on Anti-tubercular treatment based on the

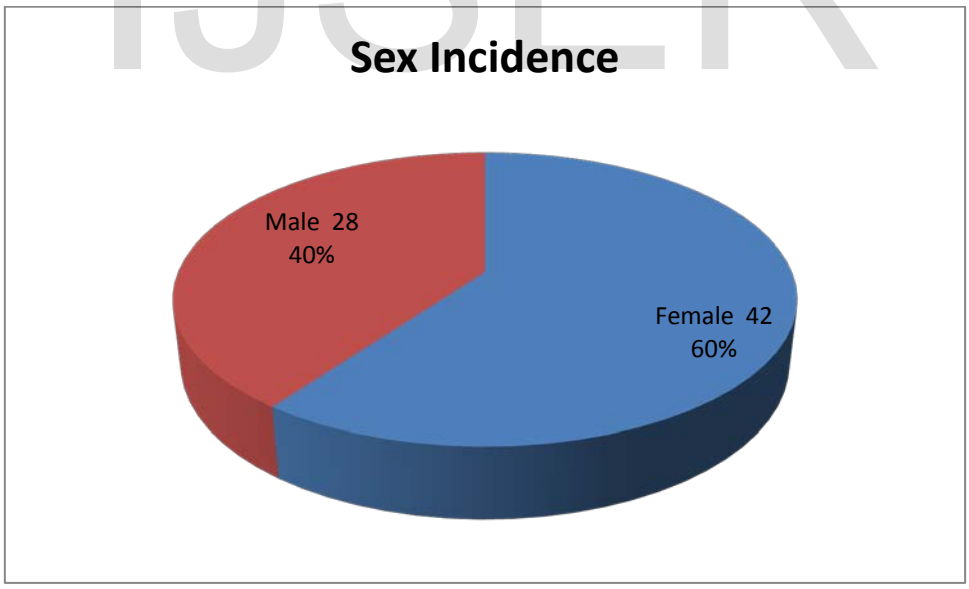
histopathological (FNAC/Excision Biopsy) reports and were followed up for a period of 6 months. 65 cases were symptom free at the end of the study.

RESULTS

Age Incidence

Age Group (years)	No of cases	Percentage
11-20	7	10
21-30	35	50
31-40	14	20
41-50	7	10
51-60	7	10
61-70	-	-
TOTAL	70	100

Incidence is maximum in the age group 21 – 30 years

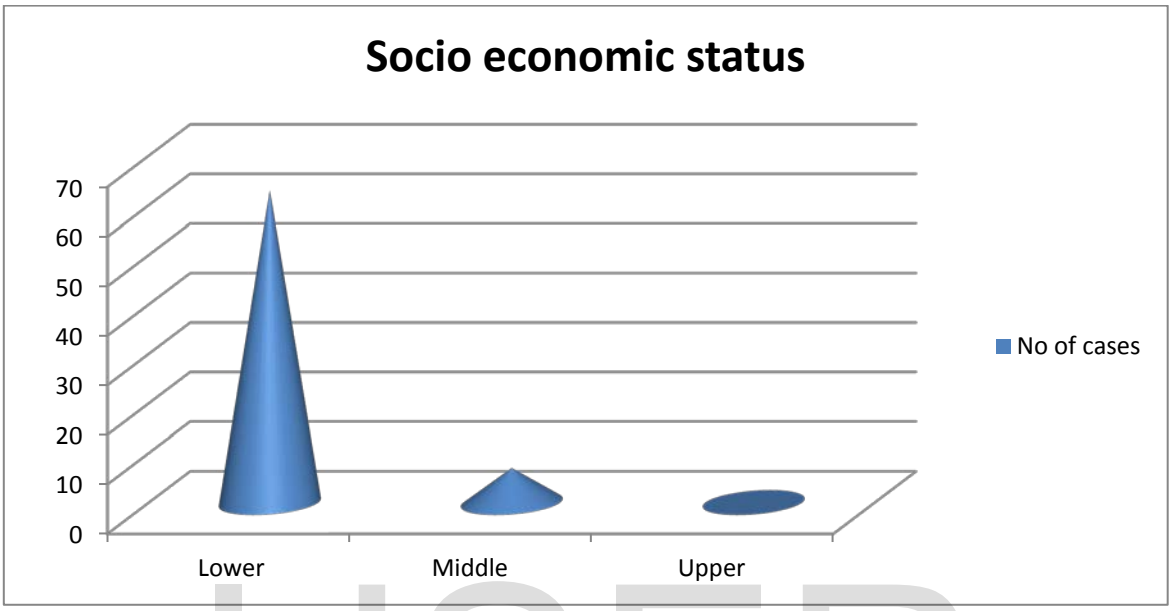


There is a higher incidence in females. There are 28 male cases and 42 female cases according to the present study with a female to male ratio of 1.5:1.

Socio Economic status

Socio economic status	No of cases	Percentage
Lower	63	90

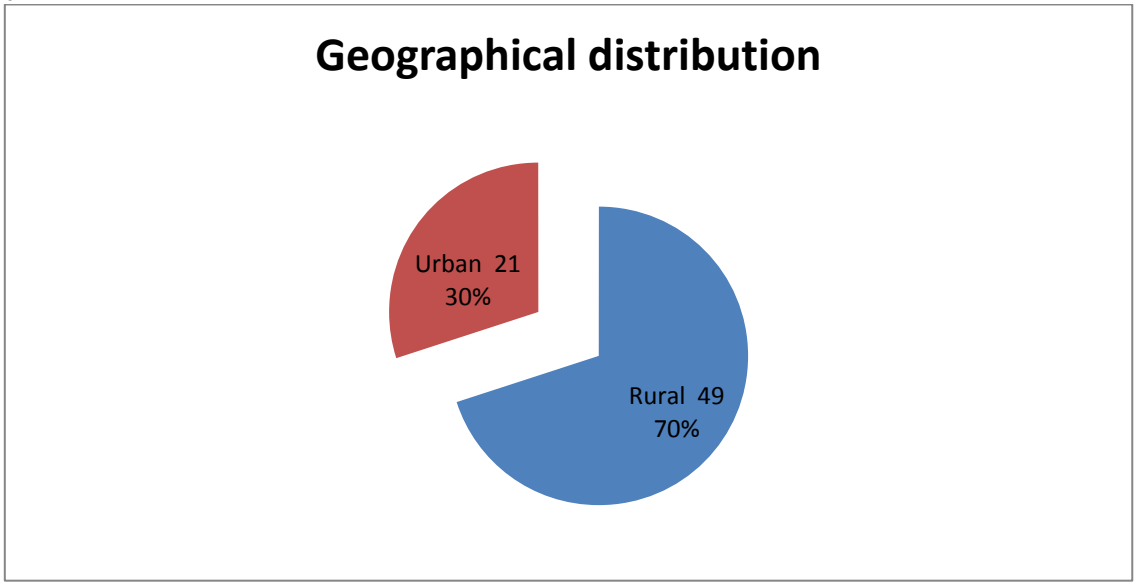
Middle	7	10
Upper	-	-



Based on Kuppusamy's socio – economic scale of classification, study cases were divided into lower, middle and upper socio-economic status. Tuberculosis mainly affected lower group of people comprising about 90% of cases.

Geographical Distribution

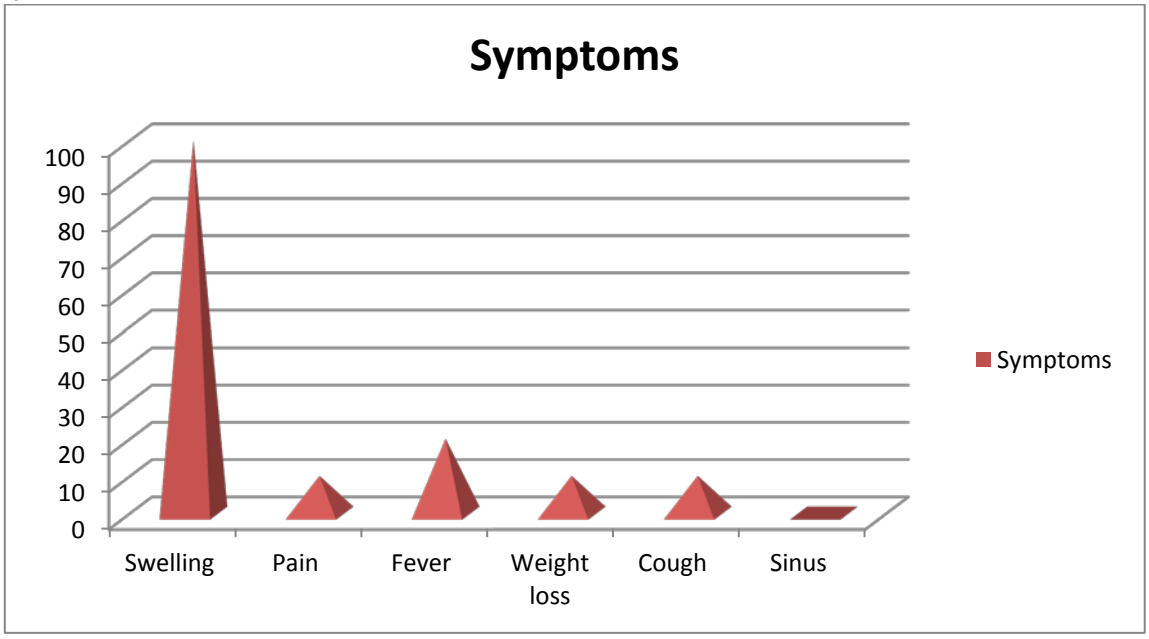
Area	No of cases	Percentage
Rural	49	70
Urban	21	30



Tuberculous cervical lymphadenitis is more common in people living in the rural population comprising about 60% of the population.

Clinical Presentation

Symptoms	No of cases	Percentage
Swelling	70	100
Pain	7	10
Fever	14	20
Weight loss	7	10
Cough	7	10
Sinus	-	-



All the 70 cases (100%) presented with swelling in the neck. 7 cases (10%) presented with pain, 7 cases (10%) presented with weight loss and 7cases presented with cough. About 14cases (20%) presented with fever.

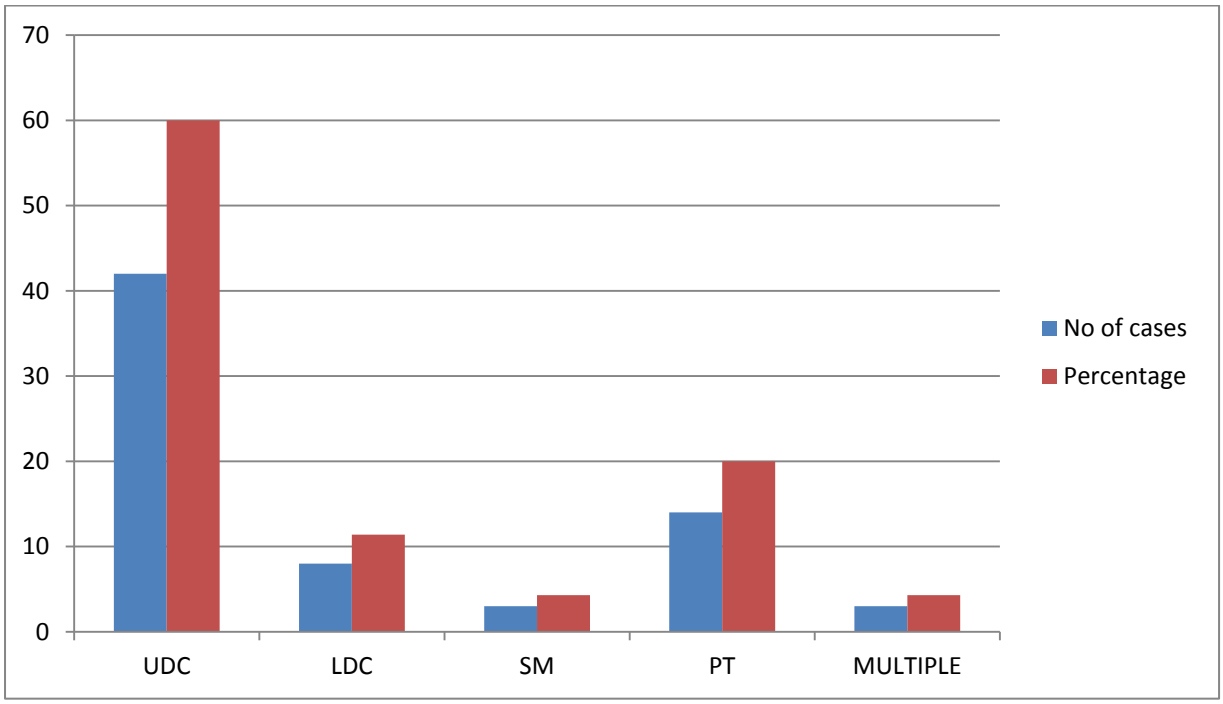
Duration of the disease

Duration	No of cases	Percentage
< 3months	49	70
>3 months	21	30

49 cases (70%) presented within the duration of 3 months.

Group of lymph nodes involved

Lymph node group	No of cases	Percentage
UDC	42	60
LDC	8	11.4
SM	3	4.3
PT	14	20
MULTIPLE	3	4.3



Most commonly affected is the upper deep cervical group of lymph nodes involved in about 42cases (60%). Posterior triangle group of nodes were involved in about 14cases (20%). 8cases (11.4%) presented with the lower deep cervical involvement. Submandibular and multiple nodal involvement were the least constituting about 3%.

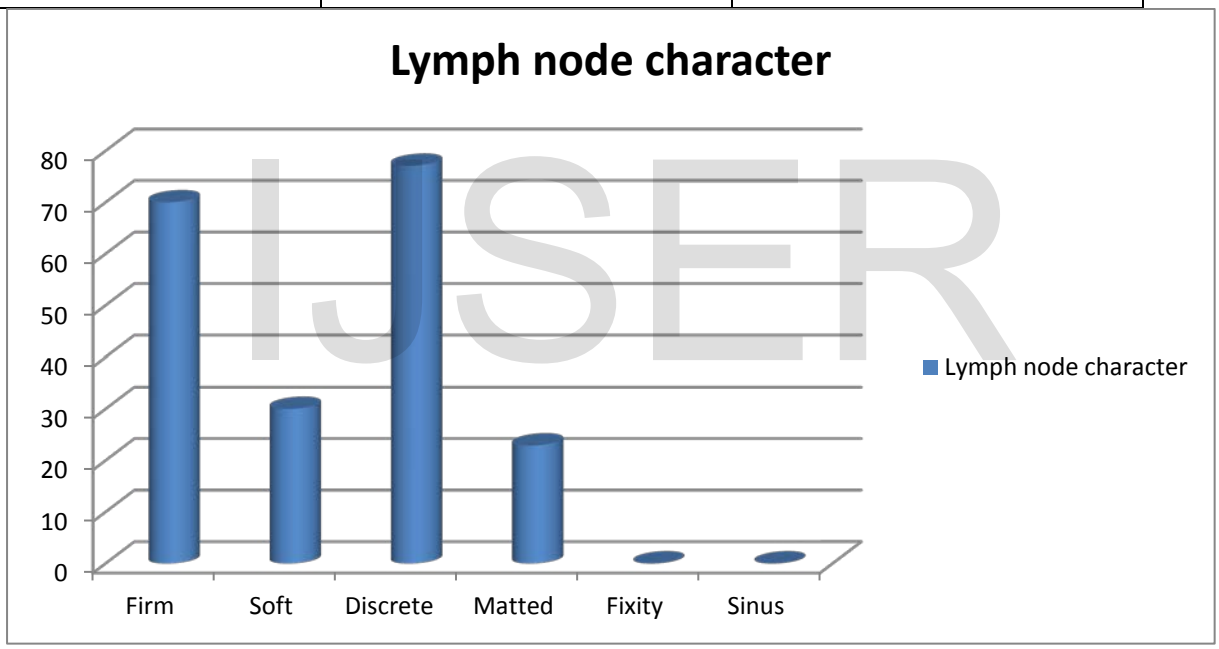
Side of the lymph nodes involved

Side involved	No of cases	Percentage
Right	24	34.3
Left	40	57.1
Bilateral	6	8.6

Left side nodes (40cases) are most commonly affected in tuberculosis than the right side (24 cases).

Lymph node character

Lymph node character	No of cases	Percentage
Firm	49	70
Soft	21	30
Discrete	54	77.1
Matted	16	22.9
Fixity	-	-
Sinus	-	-

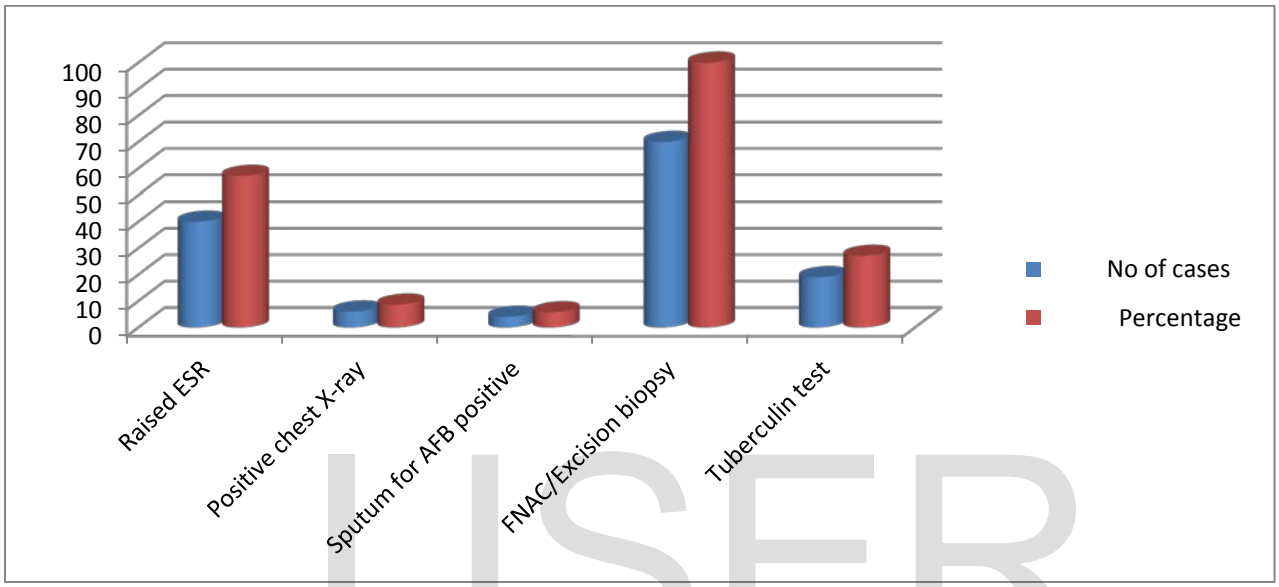


Firm lymph nodes were noted in about 49 cases (70%). 77.1% of the cases presented with discrete nodes. Matted nodes were noted in 16 cases (22.9%). None of them presented with fixed nodes or sinus according to the present study.

Investigations

Investigations	No of cases	Percentage
Raised ESR	40	57.1

Positive chest X-ray	6	8.6
Sputum for AFB positive	4	5.7
FNAC/Excision biopsy	70	100
Tuberculin test	19	27.1



40 cases presented with raised ESR (57.1%, >30mm at the end of 1hour). All cases were confirmed by FNAC/Excision biopsy (100%). Features of pulmonary tuberculosis on chest X-ray were positive in 6cases and sputum AFB was positive in 4 cases. Tuberculin test was positive in 19 cases (27.1%).

Results of FNAC and Excision Biopsy

Investigations	Caseating granuloma		Inconclusive	
	No of cases	Percentage	No of cases	Percentage
FNAC	58	82.9	12	17.1

Excision Biopsy	12	100	-	-

All the 70 cases studied in the present series were put on short course chemotherapy after thorough confirmation by FNAC or histopathological examination of the excised lymph node. 58 cases were confirmed by FNAC which revealed caseating granuloma. 12 cases (17.1%) were inconclusive and these 12 cases were subjected to excision biopsy which showed caseating granuloma. None of them presented with cold abscess.

DISCUSSION

70 cases of tuberculous cervical lymphadenitis in the present series is compared with the other studies in the literature.

Comparison of Age incidence with the other studies

Series	Age in years					
	11-20	21-30	31-40	41-50	51-60	61-70
Present series	7	35	14	7	7	-
Kumar Biswas series (45)	10	9	3	3	-	-
Muhammed MM series(46)	44	31	11	8	2	-

From the above table, it is clear that the most commonly affected population are in the age group of 21-30 years. It is compared with the other studies in the same table.

In Kumar Biswas study of 30 cases, 9 cases are in the age group between 21-30 years. In Muhammed Mudassar Majeed study of 96 cases, 31 cases are in the age group of 21-30 years. In the present series studied, 35 cases are in the age group of 21-30 years which is almost equal to the studies in the literature.

In this age group, the lymphatics play an important role with the lymph nodes acting as a powerful second line of defense against the infection. Poor nourishment with malnutrition acts as a predisposing factor in this age group.None of them were in the age group of 61-70 years according to the present study.

Comparison of sex incidence with the other studies

Series	Male		Female	
	No of cases	Percentage	No of cases	Percentage
Present series	28	40	42	60
Kumar Biswas series	11	36.6	19	63.4
Muhammad MM series	38	38	62	62
Salman M et al study(47)	21	42	29	58

In the present study, the female to male ratio is 1.5:1 which is compared with the other series available in the literature. The ratio according to the Kumar Biswas study is 1.73:1 whereas in Muhammad Mudassar Majeed series it is 1.63:1. The present study is quite similar to the Salman M et al study where the ratio is 1.4:1. The reason behind the female preponderance of the disease is due to the under nutrition, repeated and early pregnancies etc.,

Comparison of socio – economic status in various studies

Series	Low SES		Middle SES		High SES	
	No of cases	Percentage	No of cases	Percentage	No of cases	Percentage
Present series	63	90	7	10	-	-
Kumar Biswas series	18	60	9	30	3	10

The incidence of tuberculous cervical lymphadenitis is more common in the low socio- economic status which accounts for about 90% as compared to 60% in the Kumar Biswas series. Overcrowding, poor ventilation, poverty, malnutrition and unhygienic environment are the predisposing factors for the increased incidence in the low socio-economic status group.

Comparison of clinical presentation in various studies

Symptoms	Present series		Jha BC et al study	
	No of cases	Percentage	No of cases	Percentage
Swelling	70	100	53	94.6
Pain	7	10	4	7.3
Fever	14	20	6	10.7
Weight loss	7	10	8	14.3
Cough	7	10	6	10.7
Sinus	-	-	3	5.3
Others	-	-	6	10.7

The most common symptom with which the patient presents to the hospital is neck swelling which is seen in almost all the cases i.e. about 100%. 20% cases presented with fever, 10% cases presented with pain, weight loss and cough each. These results were compared with the Jha BC et al study which are almost similar to the present study which accounts for about 94.6% cases presenting with swelling, 7.3% with pain, and 10.7% with fever, cough each.Cough is due to the upper respiratory tract involvement and is not a specific feature of tuberculous adenitis.Pain is due to the stretching of the capsule or the deep fascia of the neck by the enlarging lymph nodes. Pain is more if superadded secondary infection is present.General symptoms like fever, loss of weight etc., are not specific for tubercular adenitis.

Comparison of Lymph node characters in various studies

Lymph node character	Present series	Salman M et al study	Indian Council of Medical Research Study (48)

	No of cases	%	No of cases	%	No of cases	%
Firm consistency	49	70	33	66	116	65.5
Soft consistency	21	30	6	12	-	-
Discrete	54	77.1	9	28	79	54.1
Matted	16	22.9	36	72	81	85.3
Fixity	-	-	-	-	34	79.1
Sinus	-	-	3	6	-	-

Lymph node involvement is discrete in 54 cases (77.1%) and matted in 16 cases (22.9%). Lymph nodes are firm in consistency in 49 cases (70%) and soft in consistency in 21 cases (30%). The results of the present series are compared with those in the Salman M et al study and ICMR study as quoted in the table. ICMR study included more number of cases and hence the results were higher in it. In Salman M et al study, 66% of cases had nodes which were firm in consistency and 12% of cases presented with nodes which were soft in consistency. 72% (36 cases) presented with matted nodes and 28% (9 cases) presented with solitary nodes. 6% had sinus. None of the cases presented with fixed nodes or sinus according to the present study.

Comparison of groups of lymph nodes involved in various studies

Group of lymph nodes involved	Present series in %	Kumar Biswas study in %	Maharjan M et al study in % (49)
Upper deep Cervical	60	33.3	16
Lower deep cervical	11.4	10	6
Submandibular	4.3	13.3	15
Supraclavicular	-	3.4	9
Posterior triangle	20	20	42
Multiple	4.3	20	-

The upper deep cervical group of lymph nodes are most commonly affected in the present series accounting for 60% which is more when compared to the Kumar Biswas study and Maharjan M et al study. The submandibular and the multiple nodal involvement are the least accounting for 4.3% each. There is no supraclavicular involvement in the present series. In Maharjan M et al study, posterior triangle group of nodes are more commonly affected followed by the upper deep cervical group of nodes.The tubercle bacilli are filtered at the nose, oral cavity, pharynx and tonsils and ultimately drain into the upper deep cervical group of lymph nodes and hence the lesions are produced here. The other portal of entry is the adenoids which drain into the lower deep cervical group of lymph nodes which accounts for about (11,4% cases) in the present study. Multiple nodal involvement is present in about 4.3% cases according to the present study.

Comparison of associated pulmonary tuberculosis in various studies

	Present series	Maharjan M et al study	Jha BC et al study(1)
Total no of cases studied	70	83	60
Associated pulmonary tuberculosis in percentage	5	14	16

In the present series, about 5% cases had associated pulmonary tuberculosis which is about 14% according to the Maharjan M et al study and 16% according to the Jha BC et al study.

Comparison of investigations in various studies

Series	Raised ESR in percentage	Chest X-Ray in percentage	FNAC/Excision biopsy in percentage
Present series	57.1	8.6	100
Jha BC et al study	100	16	100
Maharjan M et al Study	79	14	100

Erythrocyte sedimentation rate was raised in 57.1% of the cases in the present series which is 100% and 79% each respectively according to the Jha BC et al study and Maharjan M et al study. Chest x-ray showed features of tuberculosis in 8.6% of the cases which is 16% and 14% respectively according to the Jha BC et al study and Maharjan M et al study.

Fine Needle Aspiration Cytology was done in all the cases and found to be positive in all the cases which is the same as compared to the Jha BC et al study and Maharjan M et al study.

Comparison of results of FNAC and Excision biopsy in various studies

Study series	FNAC in %		Excision Biopsy in %
	Caseating granuloma	inconclusive	
Present series	82.9	17.1	100
Muhammad Mudassar series	69	31	-
Salman M et al study	82	-	18

In the present series, FNAC revealed caseating granuloma in 82.9% of cases compared to 69% in Muhammad Mudassar series and 82% in Salman M et al study. FNAC showed inconclusive evidence in 17.1% of the cases according to the present series. According to the Salman M et al study, excision biopsy revealed caseating granuloma in 18% of the cases.

Comparison of treatment given in various studies

Treatment given	Present series in %	Salman M et al study in %	Maharjan M et al study in %	Jha BC et al study in %
Excision biopsy	17.1	18	4.8	7.14
FNAC	82.9	82	95	92.8
ATT	100	100	100	100
Non-dependent drainage	-	-	-	3.57

12 cases (17.1%) were subjected to excision biopsy of the affected lymph nodes according to the present study. 58 cases (82.9%) were diagnosed by FNAC alone. This result is similar to that of the Salman M et al study in which 82% of the cases were diagnosed by FNAC alone and 18% of the cases were diagnosed by excision biopsy. In Jha BC et al study, FNAC proved effective in 92.8% of the cases and excision biopsy was conducted in 7.14% of the cases. 3.57% of the cases underwent non-dependent aspiration of the nodes according to the Jha BC et al study. In the present study, none of the cases were subjected to non-dependant aspiration. After confirmation, cases were put on Anti-tubercular drugs and were followed up. The cure rate

was 100%. This result is also quite similar to that of the Jha BC et al study and Maharjan M et al study. Over the years, because of the advancement in medical science, chemotherapy is more effective which has almost limited the role of surgery to drainage of the cold abscess, excision of the residual lymph node mass or scars, excision biopsy of the affected lymph nodes.

FOLLOW UP:

The cases which were put on anti-tubercular treatment were followed up at an interval of about 1-2 months from the commencement of ATT to a period of 6 months. During this period, cases were assessed by clinical examination and ESR examination. The decrease in the size of the swelling and the generalised improvement in the health status of the patients were studied and majority of the cases showed improvement within 4weeks of the start of the treatment.

CONCLUSION

The incidence of tuberculous cervical lymphadenopathy was maximum in the age group of 21-30 years (35 cases-50%). The youngest in the study is years and the oldest is years with an average of years.

The disease showed a increasing incidence in females as compared to the male patients with the female to male ratio being 1.5:1.

It is more common in the lower socio-economic status people (90%).

The disease shows increased incidence among the rural population which accounts for about 70% of the cases.

All the 70 cases presented with the complaint of swelling in the neck. 14% of the cases presented with fever, 7% of the cases presented with pain, weight loss and cough respectively.

The lymph node involvement was discrete in 77.1% of the cases and firm in 70% . 22.9% had matted lymph nodes according to the present study. The upper deep cervical nodes were involved in 60% which was the most common lymph node involved in tuberculous cervical lymphadenopathy.

57.1% presented with raised ESR . 8.6% had features suggestive of pulmonary tuberculosis on chest x-ray. 82.9% showed caseating granuloma on FNAC. FNAC was inconclusive in 17.1% of the case which were then subsequently subjected to Excision Biopsy which proved positive for tuberculous cervical lymphadenopathy. Tuberculin test was positive in 27.1% of the cases.

The patients were then categorised as Category I or Category II patients and were put on Anti-tubercular treatment based on the histopathological (FNAC/Excision Biopsy) reports and were followed up for a period of 6 months. 65 cases were symptom free at the end of the study.

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