STUDY OF CLINICAL PROFILE OF TUBERCULOUS LYMPHADENITIS

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ABSTRACT

BACKGROUND

Tuberculous lymphadenitis is the commonest form of extra pulmonary tuberculosis and most commonly cervical lymph nodes are affected. A high index of suspicion is needed for diagnosis of tuberculous lymphadenitis which is known to mimic numerous pathological conditions. Availability of molecular technology has improved the ease of diagnosis. We wanted to study the clinical profile, diagnostic dilemmas and management of tubercular lymphadenitis

METHODS

This descriptive study was conducted in the Department of General surgery at Sri Aurobindo Medical College and Post Graduate Institute between September 2015 to February 2017. The work was started after the review & approval of protocol of study by Institutional Ethics and Research committees. We included all patients with provisional diagnosis of tubercular lymphadenitis and 52 patients were made part of this study. A detail clinical history was taken. Thorough local & systemic examination was done. After clinical diagnosis, further investigated to confirm the diagnosis. Appropriate treatment was instituted & follow up done.

RESULTS

Total 52 Patients, 29 Female and 23 Male, in 20-60 years age group were included in study with a confirmed diagnosis of tubercular lymphadenitis. 39 (75%) patients belonged to low socioeconomic status. 24 (46%) patients presented to hospital between 1-3 months of symptoms. 36 (69.2%) patients were diagnosed with tuberculosis for the first time (primary tuberculosis of lymph node) 17 (33%) patients presented with constitutional symptoms like, fever, cough, loss of weight & loss of appetite. 32 (63%) patients had multiple nodes affected. 44 (85%) patients had positive tuberculin test. FNAC was positive in 42 (81%) cases CBNAAT was performed in 10 cases who were negative on FNAC. All cases with primary tuberculosis were started on DOTs CAT I & patients who had previous history of tuberculosis were started on DOTs CAT II regimen.

CONCLUSIONS

Though anti-tuberculosis chemotherapy is the mainstay of treatment for tubercular lymphadenitis, surgical treatment is more useful in selected cases. In this regard, early diagnosis and treatment are critical in lowering the overall prevalence. Lymph node tuberculosis is different from pulmonary tuberculosis in terms of diagnosis & management. With the availability molecular diagnosis, the diagnostic scenario has changed in the last decade, though treatment has not changed much since the last decade. Paradoxical reactions occur in 10–15% of immune-competent and approximately 50% of human immunodeficiency virus positive patients and need appropriate management. Every effort should be made to know the drug sensitivity of the organism at the onset of treatment by using molecular tests.

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BACKGROUND

Tuberculosis has emerged as one of the most lethal diseases man has ever faced. India accounts for nearly one third of global burden of tuberculosis, it is a major health problem with sociological and economic causes. Tuberculosis which involves lungs usually can also cause infection in any other organ and tissue in the body.

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Notable extra pulmonary sites include pleura, central nervous system, lymphatic system, genitourinary system and bone [Skeletal system]. Tuberculous lymphadenopathy is common in endemic area it accounts for 16 to 30% of all types of tuberculosis. In west there is resurgence among intravenous drug abusers and immunocompromised individuals with HIV positive status.^[1] Around 2 to 3% of the patients attending general hospitals suffer from glandular tuberculosis, since the part is often exposed and leaves behind cosmetically an ugly scar as a hallmark of tuberculosis. Tuberculosis was the most common clinical condition affecting the cervical lymph nodes.^[2] which may range from 60-90%^[3] Various methods of treatment have been recommended from time to time ranging from royal touch to radiation, chemotherapeutic agents, antibiotics etc.

METHODS

This descriptive study was conducted in the Department of General surgery at Sri Aurobindo Medical College and Post Graduate Institute for a period of one & half year from September 2015 to February 2017. The work was started after the review & approval of protocol of study by Institutional Ethics and Research committees. All the cases with provisional diagnosis of tuberculous cervical lymphadenitis getting treated in Sri Aurobindo Hospital during the period of study were included & following patient were excluded from the study-

- Patients with cervical lymphadenitis due other diseases were excluded from the study.
- Patients with enlarged neck nodes of less than two weeks duration.
- Patients below 16 years of age.
- Patients who were not willing for study.
- Seropositive patients were excluded.

A total no. of 52 patients were made part of this study. Demographic data pertaining to subject was recorded A detail clinical history was taken & local & systemic examination done thoroughly. All patients were investigated for haematological, serological & biochemical abnormalities. Other specific tests like FNAC, X- ray chest, ADA level, CBNAAT were done to conform the diagnosis. Then patient was given anti tuberculosis treatment as per latest RNTCP & WHO guide lines. Follow-up of all these patients done for a period of 1 year. The collected data was entered on a master chart & analysed by simple statistical methods.

RESULTS

Age Group	Number	Percentage
16-20 years	9	17.3
21-30 years	23	44.2
31-40 years	12	23.1
41-50 years	6	11.5
51-60 years	2	3.8
Total	52	100.0

Table 1. Distribution According to Age

Majority of the patients in our study were of age group 21-30 years 23 (44.2%), followed by 31-40 years 12 (23.1%), there were 9 (17.3%) patients <=20 years, 6 (11.5%) in the age group 41-50 years and 2 (3.8%) in the age group 51-60 years.

Gender	Number	Percentage
Female	29	55.8
Male	23	44.2
Total	52	100.0

Table 2. Distribution According to Gender

There was female preponderance with 29 (55.8%) females and 23 (44.2%) males in the present study.

Socioeconomic Status	Number	Percentage
Low	39	75.0
Average	13	25.0
High	0	0.0
Total	52	100.0

Table 3. Distribution According to Socioeconomic Status

Most of the patients 39 (75.0%) were from low socioeconomic status, 13 (25.0%) were from average socioeconomic status.

Duration of Disease	Number	Percentage
<=1 month	17	32.7
1-3 months	24	46.2
3-6 months	5	9.6
>6 months	6	11.5
Total	52	100.0

Table 4. Distribution According to Duration of Disease

There were 17 (32.7%) patients who presented within 1 month of neck swelling, 24 (46.2%) had duration of disease between 1-3 months, 5 (9.6%) had duration of disease between 3-6 months and 6 (11.5%) presented after 6 months.

Type of TB	Number	Percentage
Primary	36	69.2
Secondary	16	30.8
Total	52	100.0

Table 5. Distribution According to Type of TB

Majority of patients had primary tuberculosis 36 (69.2%) and 16 (30.8%) were having secondary tuberculosis.

Constitutional Symptoms	Number	Percentage
Absent	35	67.3
Present	17	32.7
Total	52	100.0

Table 6. Distribution According to Constitutional Symptoms

Most of the patients 35 (67.3%) patients did not have any constitutional symptoms, while 17 (32.7%) patients had constitutional symptoms like fever, cough, loss of weight and appetite.

Clinical Presentation	Number	Percentage
Lymphadenitis	6	11.5
Peri-Adenitis	24	46.1
Cold Abscess	11	21.2
Collar Stud Abscess	7	13.4
Sinus	5	9.6

Table 7. Distribution According to Clinical Presentation

There were 6 (11.5%) patients who had lymphadenitis, 24 (46.1%) patients had peri-adenitis, 11 (21.2%) had cold abscess, 7 (13.4%) had collar stud abscess while 5 (9.6%) had sinus on presentation to hospital.

Other LN Groups	Number	Percentage
Only Cervical LN Involvement	46	88.5
Axillary + Cervical	4	7.7
Inguinal + Cervical	1	1.9
Para-Aortic + Cervical	1	1.9
Total	52	100.0

Table 8. Involvement of Other LN Groups with Cervical LN

Majority of the patients 46 (88.5%) had only cervical LN involvement, while 4 (7.7%) had axillary + cervical lymph nodes involvement, 1 (1.9%) had inguinal + cervical lymph nodes involvement, 1 (1.9%) had para-aortic + cervical lymph node involvement.

Mantoux Test Results	Number	Percentage
Negative	8	15.4
Positive	44	84.6
Total	52	100.0

Table 9. Distribution According to Mantoux Test Results

Majority of the patients 44 (84.6%) Mantoux test was positive, while in 8 (15.4%) patients Mantoux test was negative.

FNAC	Number	Percentage
Negative	6	11.5
Doubtful	4	7.7
Positive	42	80.8
Total	52	100.0

Table 10. Distribution According to FNAC

In 6 (11.5%) patients FNAC was negative, it was doubtful in 4 (7.7%) patients and in majority of the patients 42 (80.8%) FNAC was positive.

CBNAAT	Number	Percentage
Performed and Positive	10	100.0
Total	10	100.0

Table 11. Distribution According to CBNAAT

Of the 52 patients included in the study, CBNAAT was performed in only 10 cases, who were negative or doubtful on FNAC.

All these cases were positive for CBNAAT (100%).

Chest X-ray	Number	Percentage
Negative for P.TB.	35	67.3
Positive	17	32.7
Total	52	100.0

Table 12. Distribution According to Chest X-ray

In 35 (67.3%) patients, chest x-ray did not show any signs for pulmonary tuberculosis, while it was positive in 17 (32.7%) patients.

ADA/ESR	Number	Percentage
>30 ADA	51	98.1
>19 ESR	41	78.8

Table 13. Distribution According to ADA and ESR Cut Off Value

51 (98.1%) patients had ADA level >30, and 41 (78.8%) had ESR > 19.

	Number	Percentage
Excision Biopsy	14	26.6
Anti-Gravity Aspiration	13	25.0
Drainage / Curettage	10	19.2
Managed Conservatively	15	28.2

Table 14. Distribution According to Surgical Procedure Performed

Excision biopsy was performed in ten cases negative or doubtful full on FNAC and was positive in all. Excision biopsy was also performed for cosmetic reasons in four cases already proven by FNAC.

Anti-Gravity aspiration was done for cases with cold abscess and collar stud abscess.

Drainage/Curettage was done for cases with collar stud abscess and sinus formation.

Treatment	Number	Percentage
Category-I	36	69.2
Category-II	16	30.8
Total	52	100.0

Table 15. Distribution According to Treatment

Majority of the patients 36 (69.2%) patients had taken Category-I treatment while 16 (30.8%) took Category-II treatment.

DISCUSSION

Tuberculous lymphadenitis is considered a local manifestation of the systemic disease, whereas lymphadenitis due to nontuberculous mycobacteria is truly a localized disease.^[4] Tuberculous lymphadenitis may occur due to reactivation of healed focus involved during primary infection. And source of infection may be from Tonsils: In majority of instances, tubercle bacilli gains entrance through tonsils of the corresponding side (Bailey). But in those situations when the lesion has healed, or the lesion will be so minimal that its identification becomes impossible. Tonsil can be tubercular without glandular involvement.^[5] Tooth: Sometimes tubercle bacilli can be demonstrated in various tooth and it should be suspected when submandibular or submental groups of lymph nodes are principally affected.^[6] Path of infection: Source of infection is from patients with open type of tuberculosis and carriers. Port of entry:^[7] The bacillus is filtered in nostrils and adenoids and it produces a lesion in the draining lymph nodes. The bacilli are carried by droplet infection. Droplet infection: With the process of coughing and sneezing, droplets containing bacilli can be ejected right onto the face, thus can easily take up their place in host without losing much of its vitality. They begin to lose their vitality outside human body. "Tuberculous carriers may possess thousands of bacilli in throat and nasal passages which are ejected in the process of coughing in the neighbourhood of susceptible persons. Dust infection: Bacilli laden sputum when spit out to the open public street which is dried, pulverised, and it is carried as dust before the bacilli can enter the system of inhalation, but its importance is only secondary to the droplet infection, because the bacilli in dust is more often persist. Tubercle bacilli however can remain alive for 3 months in darkness screen and in protected corners (Frimodt muller). If the lymphadenitis is haematogenous in origin, there may be multiple groups involved including axilla. Cervical nodes are the most commonly affected nodes in tuberculous lymphadenitis, accounting for approximately 63% of cases, followed by mediastinal (27%) and axillary nodes (8%), mesenteric hepatic, portal, perihepatic and inguinal lymph node.^[8-9]

The clinical manifestation of TB lymphadenitis largely depends upon the anatomical location of the affected nodes and immune status of the individual.^[10-13]

Cervical lymphadenopathy is the most common manifestation of tuberculous lymphadenitis. Most frequently, a unilateral mass appears in the anterior or posterior cervical triangles; submandibular and supraclavicular lymph node

involvement also occurs. Bilateral disease is uncommon. Although most patients have disease at only one site, multiple nodes may be involved at that site. Cervical lymphadenopathy may sometimes be associated with a simultaneous involvement of other nodes in the region, which may produce a variety of signs and symptoms depending upon the anatomical location of the affected nodes.

Jones and Campbell in 1962 described stages of TB lymphadenitis as follows

1. Enlarged, firm, mobile, discrete nodes.
2. Large rubbery nodes fixed to surrounding tissue.
3. Central softening abscess.
4. Collar stud formation.
5. Sinus tract formation.

The differential diagnosis of isolated peripheral lymphadenopathy is extensive and includes malignancy (e.g., Hodgkin lymphoma and non-Hodgkin lymphoma), infections (e.g., nontuberculous Mycobacteria (*M. scrofulaceum*, *M. avium* complex, *M. kansasii*), reactive hyperplasia, cat scratch disease, fungal infection, toxoplasma lymphadenitis, sarcoidosis, berylliosis, bacterial adenitis, and Kikuchi disease (idiopathic histiocytic necrotizing lymphadenitis).

Diagnosis of tuberculous lymphadenitis is established by histopathology examination along with acid-fast bacilli (AFB) smear and AFB culture of lymph node material obtained by FNAC, Excision biopsy.

CONCLUSIONS

Lymph node tuberculosis is the most common form of extra pulmonary TB, is different from pulmonary TB in terms of diagnosis and management. Though anti-tuberculosis chemotherapy is the mainstay of treatment for tubercular lymphadenitis, surgical treatment is more useful in selected cases. In this regard, early diagnosis and treatment are critical in lowering the overall prevalence with the availability molecular diagnosis, the diagnostic scenario has changed in the last decade, though treatment has not changed much since the last decade. Paradoxical reactions occur in 10–15% of immune-competent and approximately 50% of human immunodeficiency virus positive patients and need appropriate management. Every effort should be made to know the drug sensitivity of the organism at the onset of treatment by using molecular tests.

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