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Original Article

Cervical Tuberculous Lymphadenitis: Clinico-Demographic Profiles of Patients in a Secondary level Hospital

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Abstract

Background: *Tuberculosis, one of the oldest diseases known to mankind, is even today a leading cause of human suffering and loss of life in developing country like Bangladesh. According to the surveys, the estimated prevalence rates of bacteriologically confirmed TB and smear-positive TB are 287 and 113 for Bangladesh (2015-16) per 100,000 population over the age of 15years. Tubercular lymphadenitis is the commonest form of extra-pulmonary tuberculosis and most commonly cervical lymph nodes are affected. However, it mimics other pathological conditions like metastasis from other primary sites, reactive lymphadenitis, chronic non-specific lymphadenitis, lymphoma etc. Therefore, it is important that healthcare professionals are aware of tuberculosis in the head and neck region which can aid in early diagnosis with the help of simple investigations and subsequently patients can be managed promptly without delay. The aim of this study is to find out the clinical characteristics of involved cervical lymph nodes and demographic characteristics of the patients.*

Materials and methods : *A prospective study was performed in 250 Bed General Hospital, Chattogram, Bangladesh from May to November 2022. All cases of swelling in the neck or cervical lymphadenitis selected for the study were initially given conservative treatment in the form of antibiotics and were reviewed after 2 weeks. If neck swelling persists FNAC, USG and in some cases biopsy were performed. Total 85 patients were enrolled.*

Results: *Age of the patients ranged from 5 to 60 years with a mean of 25.6 years. Two third (67.7%) of the patients were female. Male: Female ratio was 1:2.1. More than half of the patients came from rural areas (53.8%) and from low socio-economic conditions (58.5%). Most of the patients presented with unilateral (87.7%), multiple (82.3%), matted (68.6%) lymph nodes, <3cm diameter (54%), commonly in right side (57.9%). Abscess was found in 21.5% cases. Discharging sinus was found in 9.2% cases. Most commonly involved lymph node group was level V (59.4%) followed by level II (42.2%). Systemic features were found in 63.07% patients. Associated lung lesion was found in 3.1% cases. FNAC was found positive for tuberculosis in 83.9% cases.*

Conclusion: *Early diagnosis and treatment is critical in reducing the overall prevalence. It is essential to have awareness regarding common presentations of cervical tuberculous lymphadenitis among the general population as well as healthcare professionals working in the resource poor primary and secondary level hospitals.*

Key words: Cervical lymphadenopathy; FNAC; Tuberculosis.

INTRODUCTION

Tuberculosis, one of the oldest diseases known to mankind, is even today a leading cause of human suffering and loss of life in developing country like Bangladesh. In 2017, about 10 million men, women and children developed TB disease, and 1.3 million died of TB.[1] According to the surveys, the estimated prevalence rates of bacteriologically confirmed TB and smear-positive TB are 287 and 113 for Bangladesh (2015-16) per 100,000 population over the age of 15years.

Although TB is a preventable and curable disease, the situation in Bangladesh remains virtually unchanged over the years marked with slow progress and no apparent breakthrough in controlling the epidemic in the foreseeable future. We have adopted End TB goals, including targets for 95% reduction in TB deaths and 90% reduction in TB incidence by 2035 compared with 2015 levels with interim milestones to achieve for 2020, 2025 and 2030.[2] Following United Nations High-Level TB Meeting (UNHLM), the Stop TB Partnership has produced TB diagnosis and treatment targets for 2018–2022.[3] Reaching the cumulative five-year UNHLM targets for ending TB requires a 45% increase in diagnosis and treatment for Bangladesh during the pre-UNHLM five year period (2014–2017). In order to reach these targets, we will need to reaffirm our commitment to national TB control initiatives with data-driven, effective strategies.

With improvement in economic and social conditions and the use of effective anti-tubercular therapy, there has been decline in tuberculosis for several decades. It is now seen that extra pulmonary presentations form a major proportion of new cases. Extra-pulmonary TB constitutes 15-20% of all cases of Tuberculosis.[4] Tubercular lymphadenitis is the commonest form of extra-pulmonary tuberculosis. TB Lymphadenitis is seen in nearly 35% of extra-pulmonary cases.5 Cervical lymph nodes are the most common site of involvement (60-90%).[5]

Cervical Tubercular Lymphadenopathy (CTL) remains both diagnostic and therapeutic challenge because it mimics other pathologic process and yields inconsistent physical and laboratory finding.[6] The differential diagnosis of tubercular lymphadenopathy includes metastasis from other primary sites, reactive lymphadenitis, chronic non-specific lymphadenitis, lymphoma, sarcoidosis etc.[7,8] With improvement in economic and social conditions and the use of effective anti-tubercular therapy, there has been decline in tuberculosis for several decades. It is now seen that extrapulmonary presentations form a major proportion of new cases. Therefore, it is important that otolaryngologists are aware of tuberculosis in the head and neck region and its varied manifestations.

There is little information regarding Cervical Tubercular Lymphadenopathy (CTL) in Bangladesh. This study will help the healthcare professionals in diagnosis and treatment of CTL, especially those working in the primary and secondary level hospitals of Bangladesh. The aim of this study is to find out the clinical characteristics of involved cervical lymph nodes and demographic profile of the patients.

MATERIALS AND METHODS

This cross sectional study was performed at 250 Bed General Hospital, Chattogram Bangladesh during the period from May to November 2022. Total 85 respondents were enrolled in this study.

Inclusion Criteria

Patients presenting with cervical lymphadenopathy irrespective of sex, caste, religion and socio-economic status were included in the study. All cases were initially given conservative treatment in the form of antibiotics and were reviewed after 2 weeks. The longstanding or chronic cervical nodes and unresolved acute cervical nodes after conservative treatment were included in the study.

Exclusion criteria

- Children below the 5 years of age were excluded in the study.
- Diagnosed cases of malignancies from any primaries presented with cervical lymphadenopathy.
- Patients with cervical lymphadenopathy along with suspicious features of malignancy like obvious growth or ulcer in head & neck region.
- Pregnant women.

For describing socioeconomic status, we arbitrarily divided the patients into low (Monthly household income <15000 taka), lower-middle (15000-25000 taka) and middle (>25000 taka).

The age group was also subdivided in to four groups: 5-15, 16-30, 31-45 and 46- 60 years.

Lymph Node Characteristics

For describing lymph nodes in the neck we used the system which originates from Memorial Sloan- Kettering Hospital, New York and adopted by the American Academy of Otolaryngology Head and Neck Surgery:[8]

Level I: Sub-mental and Sub-mandibular lymph nodes

Level II: Cervical jugular chain nodes above the level of hyoid

Level III: Cervical jugular chain nodes from the level of hyoid to the level of Cricoid

Level IV: Cervical jugular chain nodes from the level of Cricoid to the supra-sternal notch

Level V: Posterior triangle lymph nodes

Level VI: Central compartment nodes.

All the patients chosen for the study after fulfilling inclusion and exclusion criteria were subjected to proper history taking, detailed clinical examination and were prescribed initial conservative management with antibiotics and were followed after 2 weeks.

After two weeks patients were subsequently followed up. If the swelling underwent resolution, then cases were excluded. If the swelling persisted then investigations like FNAC and USG of the cervical lymph nodes were advised. If results were

inconclusive biopsy of the lymph node was advised. Abscess was diagnosed by incision and drainage of abscess with taking biopsy from abscess wall. Some ancillary investigations like X-ray chest, tuberculin test, sputum for AFB, blood investigation like ESR were also advised. Diagnosis was achieved with FNAC report primarily. Diagnosis of tuberculosis was confirmed if pus / aspirate from node shows- ZN stain positive for AFB &/or granulomatous changes with langhans giants cell. If FNAC report was inconclusive, excision biopsy was advised for confirmation.

Patients diagnosed with cervical node TB were prescribed Anti-Tubercular Treatment (ATT) regiment as per the national TB guidelines. Patients with reactive nodes or acute bacterial infection were subsequently improved after receiving conservative treatment in the form of antibiotics and anti-inflammatory drugs. Patients with metastatic nodes on cytology underwent further investigation for the site of primary tumour and managed accordingly. Those with lymphoma were managed with chemotherapy accordingly.

All collected data, information and finding were compiled and analyzed.

RESULTS

Age of the patients ranged from 5 to 60 years with a mean of 25.6 years. Two third (68.23%) of the patients were female. Male: Female ratio was 1:2.1. More than half of the patients came from rural areas (55%) and from low socio-economic conditions (58.8%). Most of the patients presented with unilateral (89.3%), multiple (82.3%), matted (69.4%) lymph nodes, <3cm diameter (55.2%), commonly in right side (47%). Abscess was found in 22.4% cases. Discharging sinus was found in 9.4% cases. Most commonly involved lymph node group was level V (38.7%) followed by level II (26.4%). Systemic features were found in 63.07% patients. Associated lung lesion was found in 3.5% cases. FNAC was found positive for tuberculosis in 69.4% cases.

Table I Socio-demographic characteristics of the patients

Characteristics	No. of patients	Percentage (%)
Sex (n=85)		
Male	27	31.76
Female	58	68.23
Age (In years)		
5-15	13	15.3
16-30	52	61.2
31-45	11	12.3
46-60	9	10.6
Residence of the patients (n=85)		
Rural	46	55
Semi-urban	11	12.9
Urban	28	32.9
Socio-economic condition (n=85)		
Low	50	58.8
Lower-middle	22	25.9
Middle	13	15.3
Occupation (n=85)		
Service holder	24	28.2
Housewife	10	11.8
Student	9	10.6
Day labourer	17	20
Business	12	14.1
Housemaid	7	8.2
Unemployed	6	7
History of taking TB drugs (n=85)		
None	56	65.8
Ongoing	3	3.5
Completed	26	30.6

Table II Clinical characteristics of involved Lymph nodes

Characteristics	No. of patients	Percentage (%)
Mode of Presentation (n= 85)		
Lump (Non-tender)	45	52.9
Lump (Tender)	13	15.3
Abscess	19	22.4
Discharging sinus	8	9.4
Site of involvement (n= 85)		
Right	40	47
Left	36	42.3
Bilateral	9	10.6
Number of enlarged lymph nodes (n= 85)		
Single	15	17.6
Multiple	70	82.3
Consistency of lymph nodes (n= 85)		
Hard	1	1.2
Firm	14	16.4
Cystic	10	11.8
Matted	59	69.4
Rubbery	1	1.2
Size of involved nodes (Largest) (n= 85)		
<3 cm	47	55.2
3-6 cm	30	35.2
>6 cm	8	9.4
Level of involvement (n= 129)		
Level IA	0	0
Level IB	6	4.7
Level II	34	26.4
Level III	27	20.9
Level IV	12	9.3
Level V	50	38.7
Level VI	0	0
Systemic features (n= 147)		
Fever	54	36.7
Weight loss	33	22.4
Night sweat	15	10.2
Loss of appetite	45	30.6

Table III Laboratory investigations

FNAC	Matted	Firm	Cystic	Rubbery	Hard	Total
Granulomatous inflammation	59	8	1	0	0	68
Reactive lymphadenitis	0	6	1	0	0	7
Lymphoma	0	0	0	1	0	1
Others (Metastatic node/ abscess/ nonspecific lymphadenitis)	0	0	8	0	1	9
Total	59	14	10	1	1	85

Investigations	No. of patients	Percentage (%)
X-ray Chest (P/A view)		
Normal	82	96.5
Pulmonary lesion	3	3.5
ESR (mm in 1st hour)		
>80	5	5.8
60-80	58	68.2
30-60	17	20
<30	5	5.8

DISCUSSION

Robert Koch discovered the tubercular bacilli on 24 March 1882.[9] It is 2023, but still we are lagging behind in the aspect of Tuberculosis.Tuberculosis is more prevalent in low income countries like Bangladesh, India and Pakistan, as compared to high income countries.[10] With improvement in economic, social conditions and the use of effective DOTS program, there is decline in pulmonary tuberculosis in our country but there is increase in incidence of extra-pulmonary form of tuberculosis.

Lymph node involvement constitutes the most common presentation of extra pulmonary form of tuberculosis and cervical lymph nodes are the most commonly affected group of nodes.Early diagnosis and treatment is critical in lowering the overall prevalence.But the spectrum of differential diagnosis of cervical lymphadenopathy is wide making it rather a challenge to the clinician to reach a definite diagnosis and treatment. Cervical tuberculous lymphadenitis usually presents with unilateral, multiple, matted neck swelling in young adults. Female and low income group of people are affected more. Level V and level II neck nodes are the prime target region to search.FNAC could be a reliable tool for diagnosis. Lung lesions are rare in extra pulmonary tuberculosis.

If the primary health care provider maintains a high index of suspicion, an early diagnosis can be made with the help of simple investigations and subsequently patients can be managed promptly without delay.

This study will help the healthcare professionals in diagnosis and treatment of CTL, especially those working in the primary and secondary level hospitals of Bangladesh.

LIMITATIONS

- Small study group.
- Study period is short.
- Single center based study.
- Limited budget.

RECOMMENDATIONS

- Further study should be done including more cases over an extended period of time.
- Nationwide survey should be arranged
- Field visit programs should be done
- Primary health care providers should be trained on assessment of extra pulmonary TB.
- Diagnostic tools should be made more easily accessible even in peripheral health centers.
- Patient data registry should be maintained.

CONCLUSION

There is very high incidence of tubercular cervical lymphadenitis in patients with enlarged neck nodes in developing countries like Bangladesh. With improvement in economic, social conditions and the use of effective DOTS program, there is decline in pulmonary tuberculosis in our country but there is increase in incidence of extra-pulmonary form of tuberculosis. Lymph node involvement constitutes the most common presentation of extra pulmonary form of tuberculosis and cervical lymph nodes are the most commonly affected group of nodes. Tubercular lymphadenitis mimics other pathological conditions like metastasis from other primary sites, reactive lymphadenitis, chronic non-specific lymphadenitis, lymphoma etc. Early diagnosis and treatment is critical in lowering the overall prevalence. Therefore, it is important that otolaryngologists are aware of tuberculosis in the head and neck region. If the otolaryngologist maintains a high index of suspicion, an early diagnosis can be made with the help of simple investigations and subsequently patients can be managed promptly without delay.

DISCLOSURE

All the authors declared no competing interest.

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