CERVICAL TUBERCULOUS LYMPHADENITIS: EXPERIENCE AT TERTIARY CARE HOSPITAL

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ABSTRACT

Background and Objectives: Among extra pulmonary tuberculosis, cervical lymph node involvement is very common. This prospective study was done to observe the clinical manifestation of the disease and histologic pattern and treatment involved and follow-up

Methods: Patients were enrolled from outpatient clinics of otolaryngology (ENT) and medicine departments of Ziauddin Hospital Kemari Campus with neck lumps. Lymphadenopathy secondary to acute ear nose throat and dental infections and cases with concurrent pulmonary tuberculosis were excluded. The cervical lymphadenopathy due to other causes like neck metastasis of primary head and neck neoplasia, and chronic inflammatory causes like sarcoidosis and kikuchi's disease were also excluded. Clinical work-up included history and detailed examination of ENT including fibrelaryngoscopy. Investigations included a complete blood picture, Erythrocyte sedimentation rate (ESR), Mantoux test, chest radiograph, and fine needle aspiration (FNA) cytology in all cases with excision biopsies in cases where FNA was inconclusive. Antituberculous therapy initiated and the cases were followed up for one year.

Results: There were 46 cases (36 females) recruited from January 2010 to December 2013 out of a total sample of 68; mean age was 22 years. Most cases (74%) had fever at presentation while 96% had a raised ESR. Most (82%) had unilateral enlargement of lymph nodes, 80% of them being in the posterior triangle of neck. All the cases had normal chest radiograph. In 17 of the cases FNAC was diagnostic while in the rest of 29 cases diagnosis was made by histopathology of resected nodes. The antituberculous treatment was given for 6 months and the follow-up done for one year. Satisfactory results yielded in all cases with lessening in the sizes of lump and good symptomatic reliefs

Conclusions: Tuberculosis was the most significant cause of neck lymphadenopathy in this cohort. Almost all cases can be diagnosed with histopathology although the yield of FNA in our series was lower. Most cases can be managed as easily and involvement of physicians trained in tuberculosis is useful.

Keywords: Tuberculosis; Cervical Lymphadenitis; Lymphadenopathy; Neck Lump; Fine Needle Aspiration Cytology

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INTRODUCTION

Pakistan is ranked fifth among the 22 high burden countries of the world with tuberculosis. The prevalence of all types of TB in Pakistan is 342 per 100,000 population and incidence of 275 new cases per 100,000 each year.[1]

Extra pulmonary tuberculosis account for about 20% of all tuberculosis cases, commonest being lymph nodes. Cervical tuberculous lymphadenopathy (CTLA), termed as Scrofula in the past, presents as

palpable neck lumps often with little systemic symptoms like fever or weight loss. The need for a medical consultation usually arises whenever symptoms emerge, or the gland increases in dimensions or count. This study was conducted in the department of Otolaryngology, Head and neck surgery and Department of Medicine with the objective being to know the variations in the pattern of the disease, histologic pattern of the disease and the optimal management.

PATIENTS AND METHOD

From January 2010 up to December 2013, all patients who presented with neck lumps at the outpatient clinic of Ziauddin Hospital, Kemari campus were enrolled in the study. They included any age or gender. Their nature was confirmed as lymph nodes on clinical assessment, single or multiple, unilateral or bilateral. Goiter, lymphadenopathy secondary to acute ear nose throat and dental infections and secondary to malignancies and some chronic granulomatous infections like kikuchi's disease and sarcoidosis were excluded. Concomitant Pulmonary tuberculosis patients who were currently on therapy were also excluded.

Clinical work-up included a detailed history and examination of nose, oral cavity, oropharynx, hypopharynx and the neck. Flexible fibroptic nasopharyngolaryngoscopy was done in all cases. Investigations included a complete blood picture, Erythrocyte Sedimentation Rate (ESR), Mantoux test, chest radiograph and fine needle aspiration cytology (FNAC) in all cases. Cases with no diagnosis on FNAC were subjected to open lymph node biopsy for histopathology. Wherever possible complete lymph nodes were excised, otherwise apparently representative chunks were removed where the lymph nodes were matted together.

Diagnosis of tuberculosis was confirmed on finding typical granulomas comprising of lymphocytes, Langhans type Giant cells with or without caseation. All confirmed patients were treated by antituberculous therapy for six months, with Rifampicin, Isoniazid, Pyrazinamide and Ethambutol for two months initially, followed by Isoniazid and Rifampicin for the next four months.

All the patients were followed up at 15 days interval for two months and the every month for next four months, with clinical evaluation complimented by monthly CBC and ESR estimation Successful treatment was defined as clinical improvement in terms of subsidence of symptoms, if any, and regression of CTLA.

RESULTS

In all, 46 cases were registered as confirmed tuberculosis out of 68; rest excluded due to criteria mentioned above. There were 36 females and 10 males; majority of patients belonged to the second and third decade with a mean age of 22 years (table I).

Table 1: Age Distribution

Total number of cases	46	%
1 to 10 years	6	13.04
11 to 20 years	22	47.82
21 to 30 years	14	30.43
41 to 50 years	2	4.34
51 to 60 years	2	4.34
Mean age	22.34	

Table 2: Presenting or Associated Complaints

Fever	34	73.91 %
Low Grade	25	
High Grade	09	
Neck Swelling/s	46	100 %
Cough	17	36.95 %
Generalized weakness	18	39.13 %
Discharging sinus in the neck	4	8.69 %

Table 3: Blood Picture

Heamoglobin	
5-7 gms %	10
7-10 gms %	10
greater than 10 gms	26
Total Leucocyte count	
Elevation (greater than 11000/cmm)	19
Lymphocytes	
0-20%	1
21-50%	38
Above 50%	7
Raised ESR	
Upto 20 mm in first hour	2
21-50 mm in first hour	24
51-100 mm in first hour	20

Table 4: Results of Cytology / Histopathology

Tuberculous Lympadentis	No.	Percentage
FNAC proven	17	36.96 %
Histopathology after excision	29	63.04 %
Total	46	100%

Besides palpable neck swellings, fever, cough and generalized weakness were the prime complaints for consultation (Table II). Most were cases of multiple cervical lymph nodes unilaterally palpable in the neck. Topographically most of the glands were identified in the posterior triangle of the neck. In ten cases enlarged tonsils were also found not considered to be the reason for lymphadenopathy.

Of the 46 cases, blood picture showed a low hemoglobin value in 20 cases with elevated ESR recording in 44 cases (Table. III). Chest radiographs of all the cases were normal. All the cases were subjected to FNAC; 17 cases yielded a cytology favoring tuberculosis. The rest 29 cases had open biopsy, of which 29 showed histopathology favoring tuberculosis (Table IV). Typical features of tuberculous lymphadenitis included replacement of normal architecture by granulomata of epitheloid histiocytes, lymphocytes, plasma cells and Langhans type of giant cells with central caseation necrosis.

Treatment with anti-tuberculous chemotherapy yielded very satisfactory results. In all the cases there was regression in the size of lumps within 4 months to impalpable levels. In addition there was a significant relief in the symptoms in terms of anorexia, weight loss, evening fevers and night sweating. A fall in ESR levels was recorded majority of the cases. No relapse was recorded in the one year follow-up period. In none of the patients the therapy was discontinued for any adverse effects.

DISCUSSION

This study showed tuberculosis as the major cause of cervical lymphadenopathy in this population with 46 out of 68 (67.6%) cases confirmed on histopathology. Tuberculosis may involve lymphatics adjacent to the primary site and lymph nodes are particularly predisposed. Cervical lymph nodes involvement is the commonest of all nodal regions. The tonsil has long been considered as the portal of entry for the tubercle bacilli glands.[2] Tonsillar lesion is mostly microscopic in extent and the primary complex is represented clinically only by involvement of the cervical lymph nodes. Propensity of involvement of posterior triangle of the neck prompted researchers to consider the nasopharynx being source of primary tuberculosis, as carcinoma of the nasopharynx metastasize principally to cervical lymph nodes.[3] In another series the authors noticed 16 out of 24 cases of tuberculous cervical lymphadenopathy with nasopharyngitis.[4] In the present study none of the cases showed any clinical

and endoscopic abnormality in the upper respiratory tract.

This study also shows that CTLA is prevalent in the young age mostly. No definite reason can be assigned for a female predilection. Similar pattern has been reported in other series.[5,6] Most of the glands were unilateral and situated in the posterior triangle of the neck (table.III). Similar pattern was found in a study from Khartoum.[7]

In our series most cases of CTLS did not have the classic constitutional symptoms like fever weight loss and night sweats. This is a common observation in other studies too.[4,6,7]

Fine needle Aspiration Cytology (FNAC) has been immensely used due to its simplicity and high yield in cervical lymphadenopathy. In an Indian study where focus was not tuberculosis, the diagnostic yield was around 46%.[8] In our study the diagnostic yield of FNAC was relatively low (37%). Other pointers like raised ESR, Mantoux test are commonly taken in our country to compliment the diagnosis where FNAC is negative. However due to the fact that ESR being nonspecific and MT with high incidence of false positives in endemic region makes it undesirable to rely on these tests for treating lymphadenitis as TB.[6,7]

The classical picture of histopathology of the lymph nodes is a granulomatous lesion with caseous necrosis and numerous epitheloid cells, Lymphocytes plasma cells, and fibroblasts and Langhans type of multinucleated giant cells, these feature are dependent on various factors like individual hypersensitivity and host immunity and the virulence of the organism. The detection of characteristic beaded rode shaped acid fast bacilli depends on the number of organism, previous antituberculous treatment and host immunity and it often requires special acid fast staining,[9] At least 10,000 organisms per milligram of tissue must be present to be identified by a special acid-fast stain This is the reason for non-visibility of bacilli in various histopathological specimens.[10]

Therefore clinical correlation with various investigation tools like FNAC, Histopathology PCR, culture are to be integrated for the definite diagnosis of the lymph node tuberculosis.

CT scan is a useful non-invasive method to assess neck nodes, especially to differentiate CTLA from malignant lymphadenopathies and abscesses in the neck. In a study using multi detector computed tomography (MDCT), CTLA showed preferentially a central low density and peripheral rim enhancement that tends to be thick and irregular compared to malignant lymphadenopathy.[11]

Ultrasonographic examination of the lymph nodes has been utilized by some researchers to differentiate between malignant and benign lymphadenopathies; tuberculous glands had centrally hypoehoic with necrosis, matting, posterior enhancement and calcified more commonly than malignant nodes.[11,12]

Both CT scan and ultra sound despite being noninvasive, are unlikely to be relied upon due to lack of confirmation by histology or microbiology as well as their cost. Both were not used for evaluation in the current series mainly due to the cost factor.

Culture of the lymph node remains the gold standard for diagnosing TB with certainty with caseating granulomata on histology being the second most reliable one.[6,11]

The DNA on Mycobacterium tuberculosis can be detected in lymph node samples by dot-blot hybridization. Polymerase chain reaction (PCR) assays are potentially useful in doubtful cases of CTLA. A recent study advocates nPCR (Nested PCR) as the sensitivity and specificity is more than 90% in their case series[12] as compared to simple PCR with these parameters. The most recent addition in investigation tool is the QuantiFERON test using blood sample, the accuracy reached 100% in one series.[13]

The treatment of CTLA has evolved through time. Surgery and later antituberculous chemo therapy for 12 to 24 months was the recommendation for many years. A short chemotherapy for 6 to 9 months duration with first line drugs is recommended; this was followed by us.[14-16] The recent recommendation regarding treatment of CTLA involves physician expert in treating Tuberculosis.[17]

The principal conclusion of this study is the fact that CTLA is the significant cause of neck lymphadenopathy in young age in our cluster of population. Clinical assessment is a good gauge to identify lymphadenopathy as the cause of neck lump. However, the palpation of lymph nodes does not necessarily match the classic matted pattern, commonly associated with CTBL. FNAC and open biopsy in uncertain cases are mandatory for a definitive diagnosis. CT scan, PCR are costlier and should be reserved for suspected malignancies.

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