

TUBERCULOSIS OF THE CERVICAL LYMPH NODES: A CLINICAL, PATHOLOGICAL AND BACTERIOLOGICAL STUDY

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Abstract - We carried out prospective study on 121 cases of cervical tuberculous lymphadenitis during a 5-years period (1990-1995) in order to determine the correlation between clinical, histological and microbiological finding in establishing the tuberculous lymphadenitis diagnosis. Biopsy was done in 96 cases, of which 93 specimens (96%) were compatible with tuberculous lymphadenitis, with 17 cases positive of acid-fast bacilli (AFB) in culture. The remaining 25 cases consisted of TB abscesses with a yield of 19 cases of positive AFB in culture. of 115 patients who completed the 6 months (2 RHZE/4 RH) short-course chemotherapy, (95%) showed excellent results. Acta Medica Iranica 36 (2): 138 - 140; 1998

Key words: Tuberculosis, cervical lymph nodes

INTRODUCTION

Tuberculous lymphadenitis (TBLN) is one of the commonest presentations of extrapulmonary tuberculosis, and its cervical localization is the most frequent. Regarding the prevalence of TB in developing countries, diagnosis of TB lymphadenitis and distinguishing it from other causes of lymphadenopathy is of great importance from the epidemiological and clinical stand point (11, 13). The diagnosis of TBLN consists of clinical, bacteriological, pathological, as well as immunological (PPD skin test) examination and finally a response to anti TB chemotherapy. In this study we determined to investigate the correlation between clinical, microbiological and pathological findings and their impact on treatment.

MATERIALS AND METHODS

From among 142 patients presenting with cervical

adenopathy to our service, over a period of 5 years (1990-1995), we recruited a total of 121 cases (76 females and 45 males) suspected for TBLN. The age of patients ranged from 8-79 years (mean 32 years). After taking a detailed history and thorough clinical examination, we performed, the routine investigations (ESR, PPD, CX-Ray, AFB in sputum). Biopsy of cervical lymph node was performed (96 cases). The specimen was divided into 2 parts, one half was immersed in physiological saline and sent for bacteriologic studies and the other half was fixed in 10 percent formalin and sent for histological investigation. In the remaining 25 cases, drainage of abscesses was performed and sent for bacteriological examination for detecting AFB.

RESULTS

Clinical presentation concerning duration of the disease, localisation, PPD skin test, presence of pulmonary TB and cervical abscesses are shown (Table 1). Histological study performed in 96 out 121 patients identified 92 cases showing caseation and granuloma, one case granulomata without caseation, and three cases showed non-specific inflammation (Table 2). The result of mycobacteriological study shows that 7 cases out of 27 stained for AFB, were positive on direct microscopy, 36 cases were positive in culture (17 from tissues and 19 from the abscess) (Table 3).

Histological examination of 93 cases showed that 17 cases were positive for AFB, 3 cases showing non-specific inflammation were AFB positive and this comparison is shown (Table 4).

DISCUSSION

Table 1. Clinical findings in the 121 cases of the tuberculous cervical lymphadenitis

Clinical findings	n(%)
Duration* of disease	
Less than 6 months	62(51)
Six months or more	39(32)
Not known	20(17)
Localization	
Right side	73(60)
Left side	30(25)
Both sides	18(15)
PPD skin test+	87(72)
Simultaneous pulmonary tuberculosis	42(35)
Active	14(33)
Inactive	28(67)
Cervical abscess	25(21)
Total	121(100)

* Based on patient's report

n = Number of patients

Table 2. Histological diagnosis in 96 patients of tuberculous cervical lymphadenitis

Diagnosis	n(%)
Caseation and granuloma	92(69)
Granuloma without caseation	1(1)
Nonspecific inflammation	3(3)
Total	96(100)

n = Number of patients

Table 3. Microbiological diagnosis of tuberculosis

Bacteriological Diagnosis	n(%)
Microscopy	
Total AFB* positive	7
Culture	
Culture positive	36

* Only 27 specimens were stained for AFB

AFB*: Acid Fast Bacilli

n = Number of patients

Table 4. Comparison of histology and microbiology findings

	History +	History -	Total
Microbiology +	17	3	20
Microbiology -	79	0	76
Total	93	3	96

Cervical tuberculous lymphadenitis is an important manifestation of extrapulmonary tuberculosis. It is among the most common causes of peripheral lymphadenopathy in the developing world accounting for 43% of cases in a recent study from India (1). It is also among the most common manifestations of extrapulmonary tuberculosis in developed countries and accounts for 13%-31% of reported cases. The disease is seen in all ages and both sexes. Most of our patients were in the third decade of life and we noted a slight female preponderance, which has also been reported by others (2,3). The majority of our patients presented with unilateral cervical node involvement. Nearly 60% of reported cases of peripheral tuberculous lymphadenitis (HIV-negative persons) are unilateral with involvement of either the anterior or posterior cervical lymph nodes (5,6). A history of previous tuberculous pulmonary disease was noted in up to one-third of patients (5,6). The present study revealed that 42 (35 percent) of the 121 patients had pulmonary tuberculosis as shown by the chest X-Ray abnormalities. In fourteen of them, the pulmonary tuberculosis was regarded as active either because of positive MTB culture of the sputum or because of chest X-Ray evidence. Abnormal laboratory results are obtained infrequently and are nonspecific (5). In most series, the PPD skin test positivity rates are in excess of 95% among HIV-seronegative patients (6,8,9). 72% of our patients had positive PPD tests. The differential diagnosis of cervical TBLN includes adenitis due to other mycobacteria, bacterial adenitis, fungal disease, toxoplasmosis, sarcoidosis, cat-scratch disease, cystic hygroma, non specific hyperplasia, non-Hodgkin lymphoma, necrotizing lymphadenitis and primary or metastatic neoplasms (5, 9-11). On the basis of our findings (as well as those of others), the diagnosis should be suspected when a slowly progressive neck mass and suggestive historical or clinical findings (including family history of tuberculosis), a history of previous tuberculosis, and/or a positive PPD skin test) are noted (12). The diagnosis of peripheral TBLN requires the identification of the organism in

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specimens. This has traditionally been accomplished via biopsy of the neck mass and subsequent histopathological and microbiological evaluation of the tissue. Excisional biopsy is the usual mode of diagnosis and is associated with a low risk of complications (12,13). The specimen may reveal histopathologic changes suggestive of TB lymphadenitis (i.e. caseation necrosis or caseating granulomata) in 90% - 100% of clinically suspicious cases (6,10,14,15). In this study 93 out of 96 cases were diagnosed as TB or compatible with tuberculosis in the histology department. Although a definitive diagnosis requires identification of the organism in culture, the literature supports the initiation of antituberculous therapy if suggestive histopathology (i.e. necrotizing of caseating granulomata) is found in the context of a consistent clinical history and a positive PPD skin test (6). Cultures of open biopsy and abscess material that are positive for MTB are reported in 56% - 93% of cases (1,5,14,15). In this study, a total of 36 (30%) out of 121 cases were diagnosed as tuberculosis in the microbiology department. Chemotherapy for 9 months with a regimen comprised of INH and RMP is sufficient, and preliminary results indicate that a 6-months regimen of isoniazid (INH), rifampin (RMP) and pyrazinamide (PZA) is also effective (13). Two uncontrolled studies of 6-months chemotherapeutic regimen for peripheral TBLN in adults have also demonstrated efficacy, with cure rates of 97%-99% on short-term follow-up (16, 17). Of 121 patients who completed the 6 months (2 RHZE/4 RH) short-course chemotherapy, 95% showed excellent results.

REFERENCES

1. Dandapat M.C. Peripheral lymph node tuberculosis, a review of 80 cases. *Br. J. Surg.* 11: 911 - 912; 1990.
2. Dolberg O.T. Extrapulmonary tuberculosis in an immigrant society, clinical and demographic aspects of 92 cases. *Rev. Infect. Dis.* 13: 177 - 179; 1991.
3. Rieder L. Extrapulmonary tuberculosis in the United States. *Am. Rev. Respir. Dis.* 141: 347 - 351; 1990.
4. Thompson B.C. The pathogenesis of tuberculosis of peripheral lymph nodes. A clinical study of 324 cases. *Tubercle.* 21: 217 - 35, 260 - 268; 1940.
5. Kent D.C. Tuberculous lymphadenitis; not a localized disease process. *Am. J. Med. Sci.* 254: 866 - 869; 1985.
6. Castro D.J. Cervical mycobacterial lymphadenitis; medical surgical management. *Arch. Otolaryngol.* 111: 816 - 819; 1985.
7. Castighom A. A history of medicine. *Inded.* New York, Knoph. 1947; 385 - 388.
8. Ord R.J. and Matz G.J. Tuberculous cervical lymphadenitis. *Arch. Otolaryngol.* 99: 327 - 329; 1974.
9. Cautrell R.W. Diagnosis and management of tuberculous cervical adenitis. *Arch. Otolaryngol.* 101: 53 - 57; 1975.
10. Shikhani A.H. Mycobacterial cervical lymphadenitis. *Ear Nose Throat J.* 68: 660 - 672; 1989.
11. Fauci, A.S. *Harrison's principles of Internal Medicine.* 14th ed. New York, Mc Graw - Hill: 1988; 1007.
12. Lee K.C. Contemporary management of cervical tuberculosis. *Laryngoscope.* 47: 713 - 717; 1971.
13. Mandell G.L and Polin R. *Principles and practice of infectious diseases.* 4th ed. London, Churchill Livingstone, 1995; 938.
14. New Combe J.C. Tuberculous cervical lymphadenopathy. *Postgrad. Med. J.* 47: 317 - 317; 1971.
15. Thompson M.M. Peripheral tuberculous lymphadenopathy; a review of 67 cases. *Br.J.Sug.* 1992.
16. McCanthy O.R. Six months chemotherapy for lymph node tuberculosis. *Respir. Med.* 83:425-427; 1989.
17. Cheung W.L. Six months combination chemotherapy for cervical tuberculous lymphadenitis. *J.Coll.Surg.Edind.* 35: 293 - 295; 1990.