

Extrapulmonary Tuberculosis : A Two-Year Review of Cases at the General Hospital Kota Bharu

I. Noor Hayati, MD*

Y. Ismail, FRCPI*

Y. Zurkurnain, M Med**

* *Department of Medicine, Universiti Sains Malaysia, Kubang Kerian, Kelantan.*

** *Department of Medicine, Hospital Besar Kota Bharu, Kelantan*

Summary

Between January 1990 and December 1991, 100 cases of extrapulmonary tuberculosis were identified at the General Hospital Kota Bharu representing 11% of all the newly diagnosed tuberculosis. It was commonest in the third decade of life and the sites involved were the lymph nodes (34%), osteoarticular (14%), miliary (12%) and pleura (10%). Tuberculous lymphadenitis appears to be more common in females and younger patients. Fourteen patients had concurrent active pulmonary tuberculosis and in 36 others the chest X-rays showed satisfactory response to standard chemotherapy. Six patients died and six were lost to follow-up.

Key words: Tuberculosis, Extrapulmonary.

Introduction

Tuberculosis is an ancient disease with protean manifestations. Although it may be a relatively indolent disease, it may cause death through rapid dissemination. Effective anti-tuberculosis chemotherapy has led to a significant decline in the incidence of pulmonary tuberculosis over the last decade, but the incidence of extrapulmonary tuberculosis has not declined correspondingly¹⁻⁴. Extrapulmonary tuberculosis especially of the lymph nodes are commonly seen in many Asian and African populations⁴.

The chest unit in General Hospital, Kota Bharu is the main centre for treatment of tuberculosis in Kelantan. It serves a community of approximately 1.2 million population. Although the tuberculosis control program was started since the 1960s, there is still a high incidence of new pulmonary tuberculosis cases recorded in Kelantan. The aim of our study was to review the current status of extrapulmonary tuberculosis at this hospital.

Patients and Methods

Between January 1990 to December 1991, 897 new cases of tuberculosis were identified at General Hospital Kota Bharu. Of these, 100 cases (11%) were extrapulmonary tuberculosis. The case records of all new cases of extrapulmonary tuberculosis were reviewed. Extrapulmonary tuberculosis was defined as patients who met at least one of the following criteria²: (i) presence of acid fast bacilli on a smear

of an adequate specimen and/or a positive culture of the specimen for *Mycobacterium tuberculosis* from extrapulmonary locations (43 patients); (ii) presence of caseating granulomata with (4 patients) or without (17 patients) acid-fast bacilli in the histopathologic specimen and (iii) patients with clinical illness compatible with tuberculous infection, positive tuberculin skin reaction (greater than 10 mm induration at 48-72 hours when tested with five international units of purified protein tuberculin derivative) and a positive response to anti-tuberculous therapy (36 patients).

Results

The age and sex distribution of the 100 patients with extrapulmonary tuberculosis is shown in Figure 1. There were 51 males and 49 females whose mean age was 38.5 years (range 2-76 years). Twenty-three of the 34 patients with TB lymphadenitis were females. Certain associated factors could be found in 84 percent of the patients. A history of previous pulmonary tuberculosis was found in only four cases even though chest X-rays showed lesions suggestive of 'old' pulmonary tuberculosis in 36 patients. Concurrent active pulmonary tuberculosis was diagnosed in 14 patients. Other risk factors such as diabetes mellitus, malnutrition, and alcoholism were also noted in certain patients.

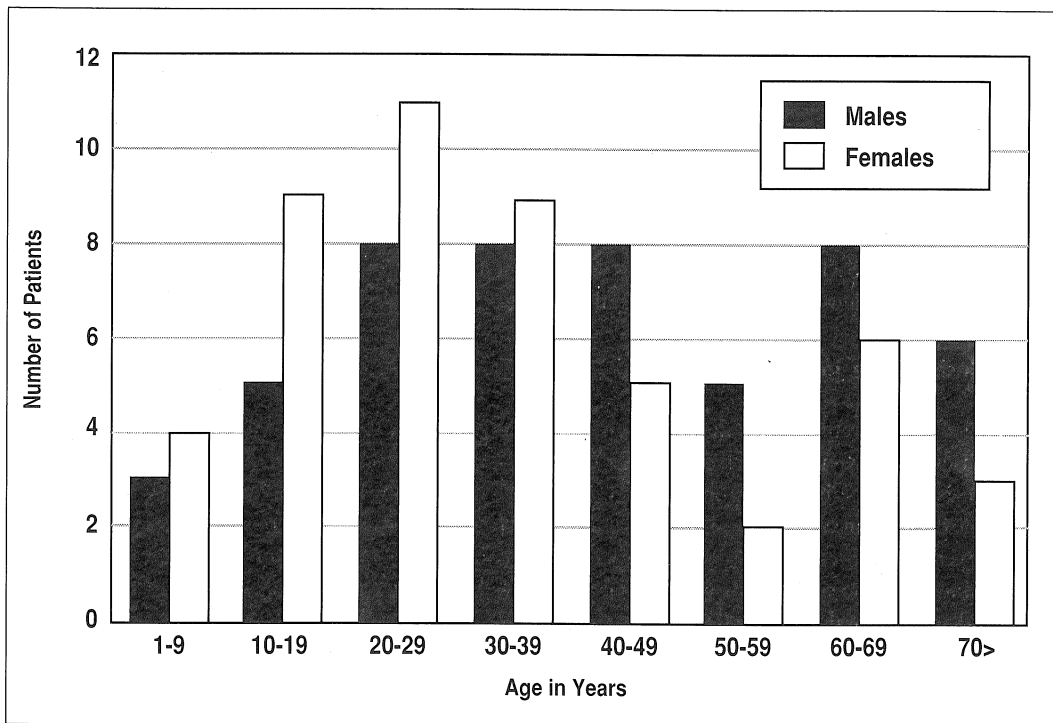


Fig. 1 Extrapulmonary TB in GH Kota Bharu - Age and sex distribution.

The frequency of tuberculosis at different sites is shown in Figure 2. The most common organ to be involved was the lymph nodes (34 cases).

Tuberculous lymphadenitis

Cervical lymph nodes were involved in 29 of the 34 patients. There were more females (females:males = 23:11), and 53% were in the second and third decades. The main complaint in all patients was

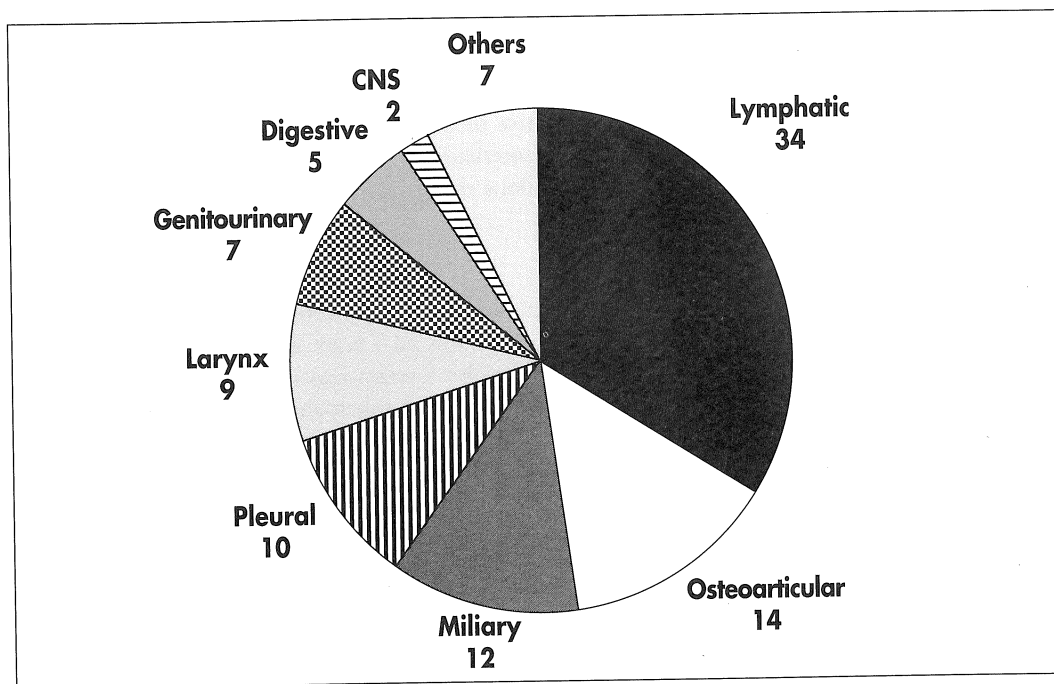


Fig. 2 Extrapulmonary TB in GH Kota Bharu - Distribution of organ involvement.

palpable swelling and a histological diagnosis was obtained in 73%. Thirty-two patients received adequate anti-tuberculosis chemotherapy and they all had good outcomes.

Tuberculosis of the joints

Osteoarticular tuberculosis was diagnosed in 14 patients. The spine was the most commonly involved site (6 cases), followed by the hip joint (3 cases), knee joint (2 cases) and elbow joint (1 case). In tuberculosis of the spine, the lumbar spine was most commonly involved followed by the thoracic spine. The presenting symptoms in patients with spinal tuberculosis were back pain (3 patients), weakness of the lower extremities (one case) and both back pain and weakness (2 patients). Radiographic studies of the spine in all the six patients with spinal TB showed disc space narrowing, erosion of the vertebral body and/or vertebral compression.

Miliary tuberculosis

Twelve patients had miliary tuberculosis on the chest X-rays. Six of these patients were confirmed bacteriologically and the other six patients were diagnosed clinically. The age range of the patients were from 14 to 74 years. The presenting clinical features were relatively non-specific and consisted of fever, weight loss, cough, abnormal mental status, headache, abdominal pain, backache and neurologic abnormalities. Two patients died at home while the rest responded to therapy.

Tuberculosis of the pleura

Tuberculosis of the pleura was noted in 10 patients. Only three patients were younger than 30 years old. Five patients were diagnosed by pleural biopsy, one patient had positive pleural fluid culture and

the other four patients were diagnosed clinically. One patient died at home, one defaulted follow-up and the last had good response to therapy.

Genitourinary tuberculosis

There were seven cases of genitourinary tuberculosis. Three cases involved the urinary tract and their urine cultures grew *Mycobacterium tuberculosis*. Four patients had genital tuberculosis (2 epididymal, 1 testicular and 1 ovarian tuberculosis). The age of the patients with genitourinary tuberculosis ranged from 18 to 75 years. None of the patients had both genital and urinary TB. All patients responded to therapy.

Tuberculosis of larynx

This was identified in nine patients (7 males, 2 females). The age of the patients ranged from 29 to 75 years. Symptoms had been present for less than six months in 66.7 percent. Common symptoms include cough (9 patients), hoarseness of voice (8 patients), fever (7 patients) and weight loss (4 patients).

Tuberculosis of the gastrointestinal system

Tuberculosis of the digestive system in this series only involved the intestine (5 cases). No other organ was involved in the digestive system. In three patients, the chest X-rays were suggestive of concomittent pulmonary tuberculosis.

Tuberculous meningitis

Only two patients were diagnosed to have tuberculous meningitis. Concurrent active pulmonary tuberculosis occurred in both cases. Both patients responded to therapy.

Others

There were four cases of cold abscesses, two cases of scleritis and one case of uveitis.

Discussion

Tuberculosis continues to be a major health problem in Malaysia. There are more than 6000 cases of bacteriologically positive pulmonary tuberculosis reported annually⁵. Over the last 20 years, the incidence of extrapulmonary tuberculosis in developed countries has remained relatively constant despite a progressive fall in the number of reported cases of pulmonary tuberculosis¹⁻⁴. Our study showed that extrapulmonary tuberculosis account for 11% of all cases of tuberculosis and this finding concur with the findings of Mehta *et al*⁶ and that of our national average of about 9.1%⁵. In USA, the incidence of extrapulmonary tuberculosis ranged from 15 to 37 percent of all new cases of active tuberculosis^{1,2,4}.

There are several hypotheses to explain the continuing prevalence of extrapulmonary tuberculosis. The most likely reasons are an increased recognition of extrapulmonary tuberculosis and an increasing incidence of extrapulmonary tuberculosis in a reservoir of previously infected patient. In all likelihood, the incidence of extrapulmonary tuberculosis is underestimated for a number of reasons. Firstly, extrapulmonary sites are commonly not reported when the lungs are involved. Secondly, diagnosis of extrapulmonary tuberculosis is more difficult. It may not be recognized without an autopsy, particularly in older people in whom other serious illnesses are present.

Tuberculosis is most commonly acquired by airborne infection. After establishment of a pulmonary tuberculosis infection, a silent bacteremia is thought to occur followed by dissemination throughout

the body, leading to development of extrapulmonary tuberculosis weeks, months, years, or even decades later. In this study, a history of pulmonary tuberculosis was obtained in only four patients and normal chest X-rays were found in 48 cases. This finding is similar to other series¹⁻⁴. This suggests that extrapulmonary tuberculosis should not be dismissed even in the absence of positive history and/or a normal chest X-rays.

Equal sex distribution has been reported in all forms of extrapulmonary tuberculosis except for tuberculous lymphadenitis in which females predominate^{1,4,7}. Our results support this epidemiological pattern. The reason why tuberculous lymphadenitis should be more common in females is not well understood. The greatest preponderance of females in the younger patients suggests that maturational and endocrine factors may play a role.

The distribution of organ systems involved in our series was similar to that observed by others¹⁻⁴. Infections of the lymphatic, osteoarticular systems, pleura, miliary tuberculosis made up the majority of the cases. In Singapore, lymph node tuberculosis constituted 50% of all extrapulmonary tuberculosis⁷. However, Dolberg *et al* in Israel⁸ and Garcia *et al* in Spain⁹ found that the genitourinary system was the most commonly involved (54% and 73% of their cases respectively).

In general, extrapulmonary tuberculosis responds to the short-course chemotherapy regimens recommended for pulmonary tuberculosis¹⁰⁻¹². However, the six and nine months anti-tuberculosis chemotherapy regimens may be less effective in treating bone and joint tuberculosis^{13,14}. In our study, the outcome was satisfactory in most patients who received adequate chemotherapy.

In summary, our study found that extrapulmonary tuberculosis remains a health problem in Kelantan. It may occur in all age groups and in various organ systems. Physicians should be alert to the possibility of extrapulmonary tuberculosis, particularly in high risk patients.

References

- Farer LS, Lowell AM, Meador MP. Extrapulmonary tuberculosis in the United States. *Am J Epidemiol* 1979;109 : 205-17.
- Weir MR, Thornton GF. Extrapulmonary tuberculosis: Experience of a community hospital and review of literature. *Am J Med* 1985;79 : 467-78.
- Dwyer DE, Colligon PJ, MacLeod C, Sorrell TC. Extrapulmonary tuberculosis: A continuing problem in Australia. *Aust NZ J Med* 1987;17 : 507-11.
- Reider HL, Snider Jr DE, Cauthen GM. Extrapulmonary tuberculosis in the United States. *Am Rev Respir Dis* 1990;141 : 347-51.
- Kementerian Kesihatan Malaysia : Laporan Tahunan Rancangan Kawalan Tibi Kebangsaan 1991;55-8.
- Mehta JB, Dutt A, Harvill L, Mathews KM. Epidemiology of extrapulmonary tuberculosis. A comparative analysis with pre-AIDS era. *Chest* 1991;99 : 1134-8.
- Tan KK. Tuberculosis lymphadenitis in Singapore. *Sing Med J* 1988;29 : 441-4.
- Dolberg OT, Schlaeffer F, Greene VWn Alkean ML. Extrapulmonary tuberculosis in an immigrant society: clinical and demographic aspects of 92 cases. *Rev Infect Dis* 1991;13 : 177-9.
- Garcia-Leoni ME, Martin-Scapa C, Rodeno P, Valderrabano F, Moreno S, Bouza E. High incidence of tuberculosis in renal patients. *Eur J Clin Microbiol Infect Dis* 1990;9 : 383-5.
- Monie DH, Hunter AM, Rocchiccioli KMS, White JP, Campbell IA, Kilpatrick GS. Management of extrapulmonary tuberculosis (excluding miliary and meningeal) in south and west Wales (1976-8). *Br Med J* 1982;285 : 415-8.
- Dutt AK, Moers D, Stead WW. Short course chemotherapy for extrapulmonary tuberculosis: nine years experience. *Ann Intern Med* 1986;104 : 7-12.
- Dutt AK, Stead WW. Treatment of extrapulmonary tuberculosis. *Semin Respir Infect* 1989;4 : 225-31.
- Dutt AK, Moers D, Stead WW. Results of therapy in tuberculosis of bone and joints. *Am Rev Respir Dis* 1988;137 : 24A.
- Hannachi MR, Martini M, Boulahel F. A Comparison of three daily short course regimens in osteoarticular tuberculosis in Algiers. *Buk Int Union Tuberc* 1982; 57 : 46-7.