

Evaluation Of Patients With Bone And Joint Tuberculosis Hospitalized in A Eğirdir Bone Diseases Hospital

Ahmet Akkaya¹, Mehmet Ünlü¹, Erhan Turgut¹

¹Department of Chest Disease, Faculty of Medicine, Süleyman Demirel Üniversitesi, Isparta/Turkey.

Abstract

This study is carried out retrospectively on patients of bone and joint tuberculosis who were hospitalized and treated between the years 1985 and 1994. Of the 191 patients included, 102 were male and 89 female. Tuberculosis at more than one place of the body was detected in 5 % of the patients. Of the 191 patients, bone and joint tuberculosis was seen in 4 patients who also had active lung tuberculosis and in 3 patients who had pleural tuberculosis. Sixty four cases (33,5 %) of spinal tuberculosis, 51 cases (26,7 %) of knee joint tuberculosis, 38 cases (19,9 %) of hip joint tuberculosis and 21 cases (11 %) of ankle joint tuberculosis have been detected among the patients. Active lung tuberculosis and pleural tuberculosis may occur concurrently with bone and joint tuberculosis.

Key words : Bone tuberculosis, joint tuberculosis, diagnose

Eğirdir Kemik Hastalıkları Hastanesi'nde Yatarak Tedavi Gören Kemik Eklem Tüberkülozlu Olguların Araştırılması

Özet

Araştırma Eğirdir Kemik Hastalıkları Hastane'sinde 1984-1994 yılları arasında, kemik-eklem tüberkülozu tanısıyla yatarak tedavi gören 191 olgu (102 erkek, 89 kadın) üzerinde yapıldı. Hastaların %5'inde 191 hastanın 4'ünde aktif akciğer tüberkülozu, 3'ünde tüberküloz plörezi birlikteliği vardı. Çalışmada vertebra tüberkülozu 64 (%33,5), diz-eklem tüberkülozu 51 (%26,7), kalça eklem tüberkülozu 38 (%19,9), ayak bileği tüberkülozu 21 olguda (%11) saptandı. Aktif akciğer tüberkülozu ve tüberküloz plözünün az da olsa kemik-eklem tüberkülozuyla eş zamanlı görülebileceği sonucuna varıldı.

Anahtar Kelimeler:

Bone and joint tuberculosis is a chronic inflammatory disease (1). The disease develops as a secondary disease to the pulmonary and gastrointestinal system tuberculosis (2). However, the lesion in these systems may remain asymptomatic while preceding symptoms may be due to organic tuberculosis caused by hematogenous spread (2,3).

The bacilli of tuberculosis arrives to the areas where it causes infectious changes via blood circulation and firstly settle down either in synovias or in bone.

In the case of bone and joint tuberculosis, malnutrition, inadequate public health, factors affecting a person's immunity adversely, the low-standard of living and high prevalence of tuberculosis in the population are the initiating causes of disease (4).

Although the bone tuberculosis usually occurs firstly in metaphysis at childhood age group, in adults it appears in epiphysis. In granular type of infections, the disease develops slowly. However, the progression is more rapid in exudative and caseous types of infection (2).

The tuberculin test, leukocyte counting, erythrocyte sedimentation rate, radiological evaluations, microbiological and pathological examination of specimens and guinea-pig inoculation can be used in diagnosis of bone and joint tuberculosis. Antituberculosis drugs are essential in treatment. Conservative treatment methods, such as orthopaedic treatment and bed rest, medical instrument ation, corset-wearing, giving exercises and surgical treatment can be performed when necessary (2).

Eğirdir Bone Diseases Hospital is one of the largest hospitals in Turkey where cases of bone and joint tuberculosis are investigated and treated. The aim of

this paper is to present the results of the cases of bone and joint tuberculosis that have been treated in this hospital.

Materials and methods

We planned to research the patients who came from all over Turkey for the treatment of bone and joint tuberculosis in Eğirdir Bone Disease Hospital. After a preliminary study with the head doctor and the manager of the hospital, the records in the archives were scanned. It was detected that the cases after the year 1985 had the adequate recordings. Only the cases which were diagnosed via clinical, laboratory, radiological, and histopathological findings were included. After the preliminary surveys, detailed forms were prepared.

The recordings of the patients between 1985 and 1994 which had been diagnosed to were transferred into the forms. The cases were studied in respect of their ages, sex, habitat, leukocyte count, erythrocyte sedimentation rate, anatomical localisations of the lesion, radiological findings and their treatment.

Chi square test were applied to all data which were obtained from the patient forms. The results were discussed and compared to the literature.

Results

The study included a total of 191 cases having bone and joint tuberculosis, who were 102 male and 89 female. The age distribution of the study group is shown in Table I.

Table I. Age distribution of our cases.

Age Groups	Male	Female	Total	%
0-10	7	14	21	11 %
11-20	22	10	32	17 %
21-30	35	21	56	29 %
31-40	10	11	21	11 %
41-50	10	13	23	12 %
51 >	18	20	38	20 %
Total	102	89	191	100 %

Most of the cases were distributed between ages 21 and 30 (56 cases), and between 11 and 20 (32 cases) as shown in Table I. When we compare the age groups our results were statistically significant ($X^2 = 13,10$, $SD=5$ $p=0.022$) but when we excluded the 21-30 age group the difference was not significant. When we compare the age groups according to their sex it was not significant ($X^2 = 10,04$, $SD=5$, $P=0.074$).

The cases have been categorised into 7 geographic regions of Turkey according to where they have come from. Twelve cases were from the Marmara Region, 28 from the Aegean, 49

from the Central Anatolia, 22 from the Mediterranean, 21 from the South-eastern Anatolia, 38 from the Eastern Anatolia, and 21 from the Black Sea Region. It has been observed that most of the cases came from the Central Anatolia Region, especially from province of Konya. The difference between regions was statistically significant ($X^2 = 16,02$, $SD=6$, $p=0.014$).

Beginning time of complaints, admission time to the hospital and time of diagnosis were determined by assessment of history of patients. The cases were evaluated with regard to the period between the beginning of their symptoms and diagnosis. Data are depicted in Table II below

Table II. The distribution of the cases with regard to the period between the beginning of their symptoms and diagnosis.

Symptoms-Diagnosis	Cases, %
0-12 months	106 cases, 55 %
12 months-5 years	42 cases, 22 %
6 years-10 years	19 cases, 10 %
10 years >	24 cases, 13 %
Total	191 cases, 100 %

A hundred and seventy two (90 %) of the cases were diagnosed, hospitalised, and treated between the years 1985 and 1989, and 19 cases

(10 %) between 1990 and 1994.

The anatomical localisations of the lesions in our cases are summarised in Table III.

Table III. The anatomical localisation's of the tuberculosis lesions.

Localisation	Total cases	(%)
Vertebral	64	33.5 %
Knee Joint	51	26.7 %
Hip Joint	38	19.9 %
Ankle Joint	21	11 %
Wrist Joint	8	4.2 %
Shoulder Joint	5	2.6 %
Elbow Joint	3	1.6 %
Calcaneus bone	1	0.5 %

In 5 of the vertebral cases 2 or more vertebrae were involved. Also bone and joint tuberculosis in two or more different localities was detected in 5 of all cases.

When multi-involvement cases are evaluated, tuberculosis was observed in both of ankle joints of the first case; in the right shoulder joint and right humerus of the second case; in the both of the hip joints of the third case; and in the right tibia and humerus of the fourth case. And in one case tuberculosis was detected in the spine, left wrist joint, and right ankle joint.

It was observed that 4 of the 191 cases had the reinfection type of lung tuberculosis. In 3 of the cases pleural tuberculosis and bone and joint tuberculosis were detected together.

Treatment has been carried out as surgical, medical (antituberculosis treatment) and physiotherapy. It was observed that the methods of drainage (28 cases), curettage (30 cases), fusion (16 cases), arthrodesis (42 cases), sequestrectomy (5 cases) and synovectomy (10 cases) had been performed. It was determined that 132 of the 191 cases had surgical treatment. Detailed data about surgical operations couldn't be obtained because of insufficiency and disorderliness in records.

Discussion

The bone and joint tuberculosis is a disease characterised by beginning insidiously, involving usually a single joint or bone, developing in other internal organs with lesions, and confusing sometimes with malignant diseases (3,5,7). The bone involvement occurs in about 1 % of patients suffering from tuberculosis (8). Fifty six percent of all bone and joint tuberculosis is seen in the thoracic and lumbar vertebra. The tuber-

culosis osteomyelitis is called the "Pott disease" (9,10).

In our study, the bone and joint tuberculosis was observed to be more in males (102 cases) than in females (89 cases). Although the difference between two sex is statistically insignificant ($p>0.05$), most of patients were in their third (56 cases, 29 %) and the second decades (32 cases, 17 %). This condensation at this age group was significant ($p<0.05$).

It was noted that most of the patients were in their puberty or adulthood rather than in their childhood. It was also noted that most of the patients came from the province of Konya, and the region of Central Anatolia.

A hundred and six patients (55 %) have been diagnosed within 12 months, and the remaining 86 patients (45 %) have been diagnosed in a period of 13 months or longer after their complaints have begun. Broniek et al. diagnosed the tuberculosis only after the active lung tuberculosis developed in a patient who had been complaining of pains in the right hip for 25 years, and it was after the tuberculosis treatment that the patient showed signs of healing (11).

Delay in diagnosis may be due to the insidious development of the disease or due to the similar symptoms of the other diseases in the bones and joints (5,6,12).

172 patients were diagnosed and treated, Between the years 1985 and 1989, while 19 patients between 1990 and 1994. Yet, we believe that a statistical research about the status of bone and joint tuberculosis throughout Turkey will be very helpful by the meaning of clinical approach.

In our research, we studied the cases according to their diagnoses and frequency of occurrence in distinct localisation's. We found that vertebral tuberculosis was diagnosed in 64 cases (33,5 %). It can be seen that this rate is lower when compared to the clas-

sical data for Turkey, which is 56 % (3,13). The increase of the knee, hip and ankle joint tuberculosis in comparison to the total number of cases drew attention. Tuberculosis in the calcaneus bone of a patient, which is quite rare, was detected.

As shown in Table II, knee-joint tuberculosis is seen more than hip-joint tuberculosis, although this data differs from classical information (2,3).

Tuberculosis lesion was detected in two or more vertebra in 5 cases of vertebral tuberculosis. Besides, tuberculosis was detected in two separate bones or joints in 4 cases. Thus, 9 of the 191 cases (5 %) were observed to have bone or joint tuberculosis in more than one place.

A bone tuberculosis presenting with widespread osteolytic lesions in the skull is reported by Ip and Tsui (14). Although bone and joint tuberculosis generally involves a single joint or bone there are some cases developing with multifocal lesions, as reported in this paper.

Another aspect of the research that drew our attention was that 4 of the 191 cases had active pulmonary tuberculosis and 3 had pleural tuberculosis. Although this is a rare condition, one must be awoken while investigating a case of tuberculosis (13).

Hanania and Hoffstein have reported a young man with tuberculosis who suffered from generalised lymphadenopathy, pulmonary and rib infiltration's (6). On the other hand, Ellis and his group have reported 7 cases with lung tuberculosis plus joint tuberculosis (12).

In conclusion, bone and joint tuberculosis is seen more in the adulthood and puberty periods. The period between the beginning of symptoms and diagnosis may take a long time. In this study tuberculosis lesions in the knee, hip and ankle joints were frequently observed besides vertebral involvement. Active lung tuberculosis and pleural tuberculosis may occur concurrently with bone and joint tuberculosis. We think that considering these observations may be helpful in the diagnosis of patients who are thought to have bone and joint tuberculosis.

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Corresponding Autor:

Department of Chest Disease, Faculty of Medicine,
Süleyman Demirel Üniversitesi

ISPARTA/TÜRKİYE