Journal of the Turkish Academy of Dermatology
eISSN 1307-394X

Research

Cutaneous Tuberculosis In a Region of Southeast of Turkey

Sedat Akdeniz*, MD, Tekin Yıldız**, MD, Güngör Ateş**, MD, Arzu Ataman***, MD, Tuncer Özekinci****, MD, Mehmet Harman*, MD

Address: * Dicle University, Medical Faculty, Departments of Dermatology, ** Chest Diseases and Tuberculosis, *** Diyarbakir Tuberculosis Dispensary and Microbiology, Diyarbakir, Turkey

Corresponding Author: Sedat Akdeniz, MD, Dicle University, Medical Faculty, Department of Dermatology, 21280 Diyarbakır/Turkey

E-mail: drsakdeniz@hotmail.com

Published:
J Turk Acad Dermatol 2011; **5 (2)**: 1152a1.
This article is available from: http://www.jtad.org/2011/2/jtad1152a1.pdf
Key Words: cutaneous tuberculosis

Abstract

Background: Cutaneous tuberculosis is a rare form of extrapulmonary tuberculosis. The diagnosis of cutaneous tuberculosis may be difficult because of several clinical features. The aim of this study is to determine the clinical manifestations of the cutaneous tuberculosis in a region of the Southeast of Turkey during ten years.

Material and Methods: Data of patients from 2000 to 2009 were collected and analysed as follows; age, sex, Bacillus Calmette-Guérin vaccination, tuberculin skin testing, type of cutaneous tuberculosis, histopatologic results, microbiologic results, chest X-rays, and used drug regimens.

Results: During 10 years 40 patients with cutaneous tuberculosis were identified. The mean age was 35.2±18.4 years. The male / female ratio was 0.66. Nine patients (22.5%) had a contact history with pulmonary tuberculosis patients. The skin lesion duration prior to diagnosis ranged from 2 months to 16 years. Tuberculin skin testing reactivity was positive in 27 patients and negative in 13 patients. Lupus vulgaris was diagnosed in 30 patients among all 40 cutaneous tuberculosis patients. The diagnosis of the scrofuloderma was made in 10 patients.

Conclusion: Lupus vulgaris was detected as the most common type of cutaneous tuberculosis in this study. The diagnosis of the cutaneous tuberculosis is usually delayed due to the wide variety of clinical presentations.

Introduction

Tuberculosis (TB) is still a major cause of illness and death worldwide, especially in Asia and Africa. In Turkey the incidence rate in 2007 was 30/100.000 cases [1].

Cutaneous TB is a rare form of extra-pulmonary TB which comprises 1-2% of all cases of TB [2]. The incidence of cutaneous TB is comparable with the total incidence of the TB [3]. Problems in the diagnosis of cutaneous tuberculosis are frequent because the clinical manifestations can be so varied and the incidence of positive cultures is low [4]. There are few data related with skin TB from Turkey [5].

The aim of this study is to determine the clinical manifestations of cutaneous TB in a region in the Southeast of Turkey during last 10 years.

Materials and Methods

Data of cutaneous TB who attended in a period of time at a University Hospital Dermatology Clinic from January 2000 through December 2009 were analyzed retrospectively.

Data of the patients were collected as follows; age, sex, Bacillus Calmette-Guérin (BCG) vaccination, tuberculin skin testing (TST), type of cutaneous TB, histopatologic results, microbiologic results, chest X-rays, and used drug regimens. TST was carried out with PPD 5 TU (Todd Unit), and an induration of 15 mm or more at 48-72 h was considered positive.

Following investigations were carried out on each patient: Hematological examination including complete blood count and erythrocyte sedimentation rate.

The diagnosis of cutaneous TB was made according to the combination of clinical, histopathological, and microbiological results as well as response to antituberculous therapy.

All cases of the cutaneous TB were reported to the Tuberculosis Dispensary. In our country, Tuberculosis Dispensaries record, treat, observe all types of TB and make BCG vaccination for TB. The BCG vaccination is on 60th day and 7th year of life routinely. Standard therapy regimes involving 2 months of quadruple therapy (isoniazid, rifampicin, pyrazinamide, and ethambutol) followed by a further 4 months of isoniazid plus rifampicin) are administered in Tuberculosis Dispensaries.

Nominal data were presented as proportions and continuous variables were expressed as the mean ± standard deviations (SD).

Results

During 10 years 40 patients with cutaneous TB were identified. The mean age was 35.2±18.4 years (range 7-95 years). Sixteen were men (40%) and 24 were women (60%). The male / female ratio was 0.66. Nine of the patients (22.5%) had a contact history with pulmonary tuberculosis patients. Thirty six patients (90%) with cutaneous TB had BCG vaccination scar whereas 4 patients (10%) had no BCG vaccination scar. The skin lesion duration prior to diagnosis ranged from 2 months to 16 years. TST reactivity was positive in 27 patients and negative in 13 patients. The mean and SD values of the TST reactivity in all patients, in TST positive patients and in TST negative patients were 13.4±7.2 mm, 20.6±3.6 mm, 8.6±4.2 mm in diameter, respectively. Lupus vulgaris (LV) was diagnosed in 30 of the all 40 cutaneous TB patients (**Figures 1, 2**). The diagnosis of the scrofuloderma (SFD) was made in 10 patients (**Figures 3, 4**) (**Table 1**). None of our patients had HIV sero-positivity.

Table 1. Data of Our Patients

Age, year (Mean±SD)	35.3±18.4 (range 7-95 years)
Gender (Male/Female)	16/24
Male /Female ratio	0.66
Contact history with pulmonary tuberculosis patients	9 (22.5%)
BCG vaccination scar (negative/positive)	4/36 (10% / 90%)
Skin lesion duration prior to diagnosis	2 months-16 years
TST, mm (Mean±SD)	13.4±7.2
TST (negative/positive)	13/27
Lupus vulgaris	30 (75 %)
Scrofuloderma	10 (25%)

Histopatologic results were compatible with clinical diagnosis in 32 (80%) patients. Skin specimens for M. tuberculosis culture were performed in all patients and positive results were obtained in 5 (12.5%) patients. In 3 patients (7.5%) the diagnosis of cutaneous TB was based on antituberculous treatment response.

The diagnosis of cutaneous TB was based on a typical appearance, a positive TST, a skin biopsy showing granulomatous dermatitis, a skin biopsy culture showing M. tuberculosis or a good response to anti-TB treatment.

All patients were treated with a short-course anti-TB regimen consisting of isoniazid 300

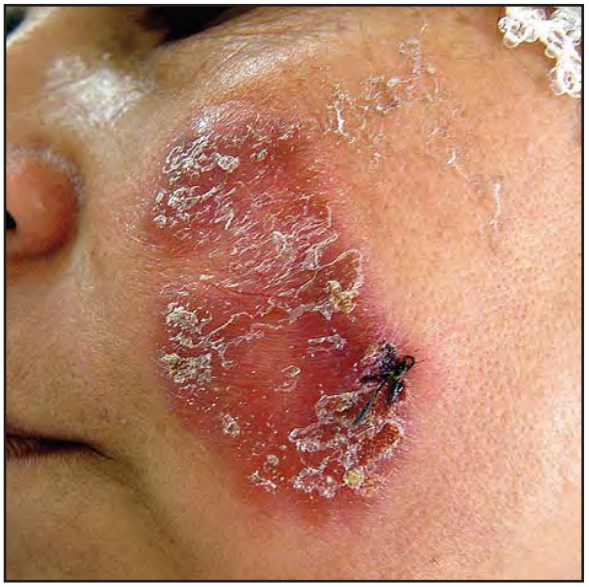

Figure 1. Lupus vulgaris of the cheek

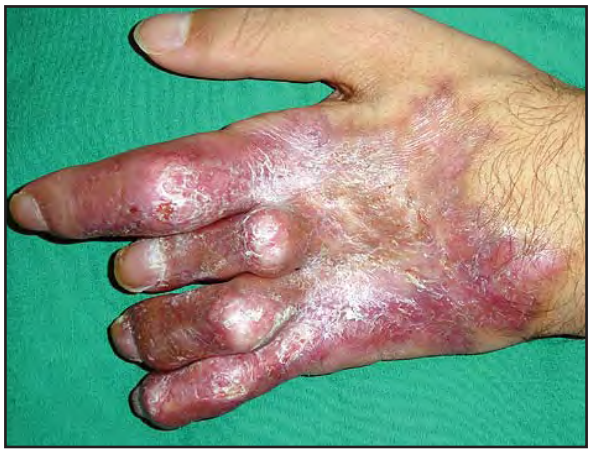

Figure 2. Lupus vulgaris of the hand caused deformity

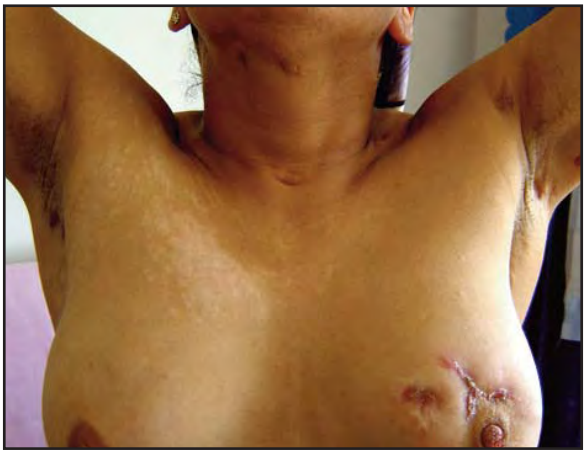

Figure 3. Scrofuloderma of the breast, axillary and cervical involvement

mg daily, rifampicin 600 mg daily, ethambutol 1000 mg daily and pyrazinamide 2000 mg daily for 2 months followed by isoniazid and rifampicin in the same doses for 4 months. The doses were suitably adjusted for children.

Discussion

As to our knowledge this is the first report related to cutaneous TB in a region of the Southeast Turkey. Tuberculosis of the skin is most commonly seen in young adults; [**6, 7**] in our study 62.5% of patients were under 40 years of age.

We observed the female predominance in concordance with a study from our country [**5**], contrary to the previous studies [**8, 9, 10**]. We detected the contact history with pulmonary tuberculosis patients in 22.5% of 40 patients. Following a diagnosis of cutaneous TB, individuals ho have been in close and prolonged contact with affected patients underwent TST, a chest X-ray and sputum analysis [**11**].

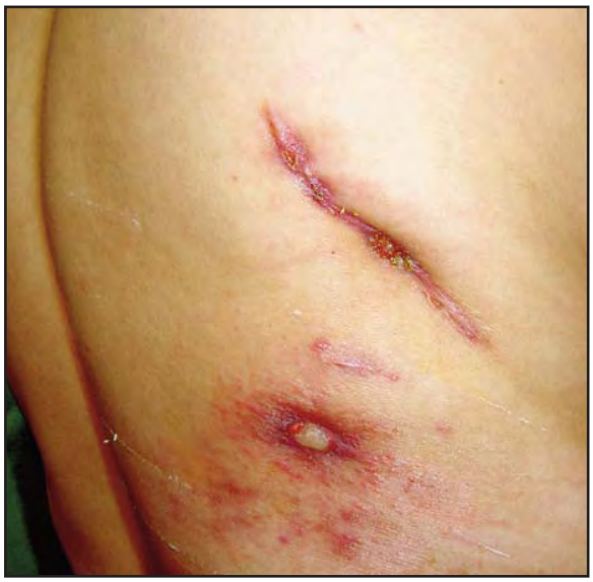

Figure 4. Scrofuloderma of the thorax

The skin lesions duration prior of the cutaneous TB was 2 months to 16 years. The correct diagnosis of the cutaneous TB is usually missed or delayed due to the wide variety of clinical presentations and lack of consideration of the disease in the differential diagnosis, due to false-negative cultures and negative direct-smear detections [**10**].

In our study, the diagnosis of cutaneous TB was made according to the histopathologic results in 32 patients (80%), and microbiologic results in 5 patients (12.5%). It is recommended, patients with suspected tuberculosis should have appropriate specimens sent for acid-fast bacillus (AFB) staining, histology, mycobacterial culture, and isolation of the M. tuberculosis by polymerase chain reaction (PCR) [**12, 13**].

Moreover, we diagnosed cutaneous TB in three patients based on antituberculous treatment response. In areas of high TB prevalence, a therapeutic trial of anti-TB chemotherapy should be considered [**14, 15, 16**].

In our cutaneous TB patients, LV was detected as the most common type (75%). SFD was observed in 10 patients (25%). In a study from Morocco SFD was the most common type of cutaneous TB [**4**]. LV was the most

common form of CTB reported in studies from Hong Kong, Africa and India [**6, 8, 17, 18**]. This difference was attributed to better housing conditions and health services as well as BCG vaccination at birth. [**8**], to the lower overall incidence of pulmonary TB than in the past and improved hygiene (e.g. prohibition of spitting in the streets) leading to a decrease in contamination by acid Fast Bacillus [**19**]. We are in opinion that the routine BCG vaccination in our country and the lower incidence of pulmonary TB than in the past may contribute LV predominance.

We found chest X-ray abnormalities in 3 patients. In two patients fibrotic apical pulmonary lesions, in one patient fibrotic apical pulmonary lesion and left pleural thickness were detected. Sputum smear for AFB and culture for *M. tuberculosis* were negative. Concomitant extracutaneous tuberculosis has been reported in 5% to 21% of patients with cutaneous tuberculosis in different studies [**20, 21**].

Our patients had been taken standard TB treatment regimens for their cutaneous TB. This regimens consist of 2 months of quadruple therapy (isoniazid, rifampicin, pyrazinamide, and ethambutol) followed by a further 4 months of isoniazid plus rifampicin thrapy. Because most cases of cutaneous TB are related to tuberculous disease of other organs and the bacillary load in the skin is usually less than elsewhere, treatment regimens, such as used to treat pulmonary TB, should be sufficient [**22**].

In conclusion, LV was detected as the most common type of cutaneous tuberculosis. The diagnosis of cutaneous TB is usually delayed due to the wide variety of clinical presentations.

References

1. Global tuberculosis control: epidemiology, strategy, financing: WHO report 2009. Online: http://www.who.int/tb/ publications/ global_report/2009/en/index.html. (Last access Oct 2009)

2. Caminero J. Guia de la tuberculosis para medicos especialistas. Paris: International Union Against Tuberculosis And Respiratory Diseases, 2003; 35: 7.

3. Tappeiner G, Wolff K. Tuberculosis and other mycobacterial infections. In: Freedberg IM, Eisen AZ, Wolff K, Austen KF, Goldsmith LA, Katz SI (eds). Dermatology in General Medicine, 6th Edition. USA, The McGraw-Hill Companies Inc, 2003:1933-1950.

4. Zouhair K, Akhdari N, Nejjam F, Ouazzani T, Lakhdar H. Cutaneous tuberculosis in Morocco. Int J Infect Dis 2007; 11: 209-212. PMID: 16822685

5. Kılıç A, Gül U, Soylu S, Gönül M, Demiriz M. Clinical and laboratory features of cutaneous tuberculosis. Eur J Dermatol 2009; 19: 527-528. PMID: 19638334

6. Kumar B, Muralidhar S. Cutaneous tuberculosis: a twenty-year prospective study. Int J Tuberc Lung Dis 1999; 3: 494-500. PMID: 10383062

7. Fenniche S, Ben Jennet S, Marrak H, Khayat O, Zghal M, Ben Ayad M, et al. Tuberculose cutanée: aspects anatomocliniques et évolutifs (26 cases). Ann Dermatol Venereol 2003;130:1021-1024. PMID: 14724536

8. Ho CK, Ho MH, Chong LY. Cutaneous tuberculosis in Hong Kong: an update. Hong Kong J Med 2006; 12: 272-277. PMID:16912353

9. Farina MC, Gegundez MI, Pique E, Esteban J, Martin L, Requena L, et al. Cutaneous tuberculosis: a clinical, histopathologic and bacteriologic study. J Am Acad Dermatol 1995; 33: 433-440. PMID: 7657867

10. Shegal VN, Srivastava G, Rhurana VK, Sharman VK, Bhalla P, Beohar PC. An appraisal of epidemiologic, clinical, bacteriologic, histopathologic and immunologic parameters in cutaneous tuberculosis. Int J Dermatol 1987; 26: 521-526. PMID: 3119506

11. Lai-Cheong JE, Perez A, Tang V, Martinez A, Hill V and Menage H du P. Cutaneous manifestations of tuberculosis. Clin Exp Dermatol 2007; 32: 461–466. PMID: 17376216

12. Golden MP, Vikram HR. Extrapulmonary tuberculosis: an overview. Am Fam Physician 2005; 72: 1761-1768. PMID: 17376216

13. Almaguer-Chávez J, Ocampo-Candiani J, and Rendón A. Current panorama in the diagnosis of cutaneous tuberculosis. Actas Dermosifiliogr 2009; 100: 562-570. PMID: 19715641

14. Akoglu G, Karaduman A, Boztepe G, Ozkaya O, Sahin S, Erkin G, et al. A case of lupus vulgaris successfully treated with antituberculous therapy despite negative PCR and culture. Dermatology 2005; 211: 290-292. PMID: 16205078

15. Lipsker D, Grosshans E. What is lupus vulgaris in 2005? Dermatology 2005; 211: 189-190. PMID: 16205061

16. Ramam M, Mittal R, Ramesh V. How soon does cutaneous tuberculosis respond to treatment? Implications for a therapeutic test of diagnosis. Int J Dermatol 2005; 44: 121-124. PMID: 15689209

17. Visser AJ, Heyl T. Skin tuberculosis as seen at Ga-Rankuwa Hospital. Clin Exp Dermatol 1993; 18: 507-515. PMID: 8252787

18. Ramesh V, Misra RS, Beena KR, Mukherjee A. A study of cutaneous tuberculosis in children. Pediatr Dermatol 1999;16: 264-269. PMID: 10469408

19. Mitchell PC. Tuberculosis verrucosa cutis among Chinese in Hong Kong. Br J Dermatol 1954; 66: 444-448. PMID: 13230395

20. Chong LY, Lo KK. Cutaneous tuberculosis in Hong Kong. A 10-year retrospective study. Int J Dermatol 1995; 34: 26-29. PMID: 7896481

21. Ramesh V, Misra RS, Jain RK. Secondary tuberculosis of the skin. Clinical features and problems in laboratory diagnosis. Int J Dermatol 1987; 26: 578-581. PMID: 3443525

22. Bravo FG, Gotuzzo E. Cutaneous tuberculosis. Clin Dermatol 2007; 25: 173-180. PMID: 17350496