

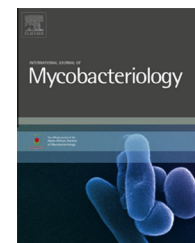
HOSTED BY



ELSEVIER

Available at www.sciencedirect.com

ScienceDirect

journal homepage: www.elsevier.com/locate/IJMYCO

Case Report

Cutaneous tuberculosis revealing multifocal tuberculosis in immunocompetent patients

N. Amraoui ^{a,*}, S. Krich ^a, M. Meziane ^a, S. Gallouj ^a, H. Abid ^b, A. Elmrini ^b,
K. Moumna ^c, T. Harmouch ^c, F. Mernissi ^a

^a Department of Dermatology Venereology, Hassan II University Hospital Fez, Morocco

^b Department of Orthopedy and Traumatology B4, Hassan II University Hospital Fez, Morocco

^c Department of Pathology, Hassan II University Hospital Fez, Morocco

ARTICLE INFO

Article history:

Received 18 April 2015

Received in revised form

8 May 2015

Accepted 9 May 2015

Available online 18 June 2015

Keywords:

Cutaneous tuberculosis

Multifocal tuberculosis

Immunocompetent

ABSTRACT

Multifocal tuberculosis (TB) is rare. It occurs especially in immunocompromised patients. Association with skin involvement is rarer, and few cases are reported in the literature. The present study reports 7 cases of multifocal TB with cutaneous localization in immunocompetent patients. Cutaneous forms of TB included in this series are: gummas, scrofuloderma, vasculitis TB and lupus TB. The patients had at least two extra skin locations, namely: osteoarticular, lung, pleural, scrotal, muscular, digestive, laryngeal, nodal and splenic locations. These patients had no context of immunosuppression which is uncommon, but should be kept in mind, especially in endemic countries.

© 2015 Asian African Society for Mycobacteriology. Production and hosting by Elsevier Ltd.

All rights reserved.

Introduction

Tuberculosis (TB) is an infectious disease due to *Mycobacterium tuberculosis* (MTB). It is still endemic in developing countries and raises renewed interest in developed countries. Cutaneous localization represents 2% of the locations of TB [1]. The disease is usually limited to the skin, but can be multifocal, especially in immunocompromised patients. This study reports 7 cases of multifocal TB, including cutaneous involvement in immunocompetent patients.

Materials and methods

This study collected 7 cases of multifocal TB revealed by skin localization from the Department of Dermatology of the

Hassan II University Hospital of Fez over a period of three years, from March 2011 to March 2015. Consent from patients was obtained. The epidemiological, clinical and therapeutic features were studied.

Results

Seven cases of multifocal TB were studied. The average age of the patients was 27.6 years, with a sex ratio male/female of 0.75. Most patients had a low socioeconomic level, but none had the notion of contagious TB. The delay of consultation was 8 months. Cutaneous forms of TB included: 4 cases of gummas (Fig. 1), 1 scrofuloderma TB (Fig. 2), vasculitis TB and lupus TB. These patients had at least two extra skin locations, namely: osteoarticular locations (Fig. 3) in 5 cases (with

* Corresponding author. Tel.: +212 666132727.

E-mail address: nissrineamraoui@hotmail.com (N. Amraoui).

Peer review under responsibility of Asian African Society for Mycobacteriology.

<http://dx.doi.org/10.1016/j.ijmyco.2015.05.009>

2212-5531/© 2015 Asian African Society for Mycobacteriology. Production and hosting by Elsevier Ltd. All rights reserved.



Fig. 1 – Gumma of the scalp.



Fig. 2 – Scrofuloderma tuberculosis.

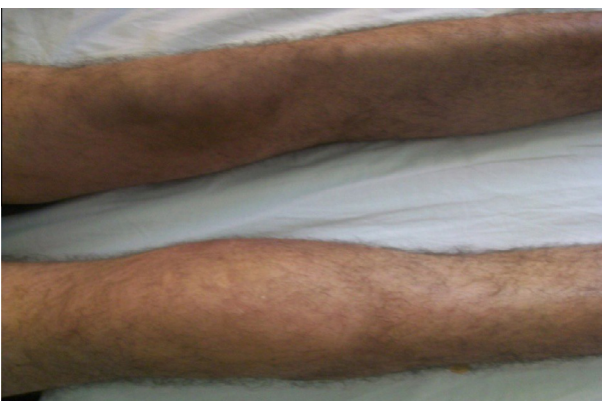


Fig. 3 – Tuberculous arthritis of the right knee.

involvement of the elbow, spine, collarbone and knee in 2 cases), lung in 4 cases, pleural in 2 cases, scrotal, muscular, digestive, laryngeal, nodal and splenic locations in 1 case.

The biopsy showed a giant epithelioid cell granuloma with caseating in 6 cases (Table 1). The intradermal tuberculin reaction was positive in only one patient. Direct examination looking for resistant acid-alcohol bacillus in sputum was negative in all patients. Culture on Lowenstein-Jensen revealed MTB in one case. A biological inflammatory syndrome was noted in 3 patients. These patients had no context of immunosuppression, no history of diabetes, renal failure, or long-term treatment with corticosteroids or immunosuppressants, and no evidence for a neoplasia. HIV serology and viral hepatitis were negative; the electrophoresis of proteins showed an inflammatory profile. The management of these patients required prolonged anti-tubercular therapy over a period of nine months based on 2 months of Ethambutol (20 mg/kg/24 h), Rifampicin (10 mg/kg/24 h), Isoniazid (5 mg/kg/24 h) and Pyrazinamide (25 mg/kg/24 h), then 7 months of Rifampicin (10 mg/kg/24 h) and Isoniazid (5 mg/kg/24 h). A surgical drainage was indicated in 2 cases. Three patients were declared cured with a decline of 40 months; 3 others are still under treatment with complete healing of skin lesions, and 1 patient was lost from sight.

Discussion

Multifocal systemic TB is defined by the presence of two or more lesions in extra-pulmonary sites, with or without pulmonary involvement [2].

The present study reports 7 cases of cutaneous TB revealing multifocal TB in immunocompetent patients. Multifocal forms of TB represent less than 10% of TB cases [3], association with skin involvement is rarer, and few cases are reported in the literature. The diagnosis of multifocal TB is difficult because of the clinical polymorphism and the diversity of organs that can be achieved. This is reflected in the diagnosis delay, which is around 8 months in this series. The skin represents an organ available for clinical and histological examination, which is helpful for diagnostic orientation. Its involvement is dominated by gummas and scrofuloderma TB [3,4].

Radiological investigations are important to detect earlier involvement of multiple organs and for monitoring under treatment. Histological examination reveals a granulomatous lesion with or without caseating. Evidence of infection by direct examination and tissue culture study or PCR confirms the diagnosis if in doubt.

Few observations of immunocompetent individuals' multifocal TB were reported in the literature in which skin involvement was even rarer. Multifocal TB may affect any organ or viscera. In a study of 16 cases, the viscera most commonly affected were the liver, lymph nodes, lungs, pleura, and the joints [7]. In another study, extra skin involvement can be dominated by pulmonary and osteoarticular localization, as in this series, or by abdominal and lymph node involvement, as described in the literature [4].

The concomitant involvement of skin and skeletal TB is a very rare condition. Kivanc-Altunay et al. reported that 61% of skin TB cases had pulmonary involvement, whereas no skeletal TB was encountered [5]. Kumar et al. reported that 4 patients out of 75 with skin TB had skeletal TB, and

Table 1 – Clinical and pathologic informations of our patients.

Patients	Age	Gender	Extra skin locations	Cutaneous forms	Pathology
1	55	Female	Nodal, lung, splenic, osteo-articular	Lupus tuberculosis	GECG with caseating
2	18	Female	Laryngee, muscular	Scrofuloderma tuberculosis	GECG with caseating
3	20	Male	Digestive, pleural, lung	Vasculitis tuberculosis	GECG with caseating
4	19	Male	Lung, osteo-articular	Gummas	GECG with caseating
5	32	Male	Scrotal, osteo-articular	Gummas	GECG with caseating
6	22	Male	Lung, osteo-articular	Gummas	GECG without caseating
7	22	Female	Pleural, osteo-articular	Gummas	GECG with caseating

GECG: giant epithelioid cell granuloma.

only 1 had tuberculous dactylitis [6]. Skeletal TB is dominated as in this series by the involvement of large joints and the spine.

Multifocal TB should prompt researchers to look for an underlying immunosuppression, because it is confined mostly to immunocompromised patients with HIV infection [7]. However it can affect immunocompetent patients, as in the patients in this study who had no history of diabetes or kidney failure, or long-term immunosuppressive therapy. HIV serology and viral hepatitis were negative. This multifocal involvement in this series can be explained by the endemic nature of cutaneous TB in this country. Besides, the delay of diagnosis of the first localization due to late consultation allowed for the infection to spread to other organs.

Two pathogenic mechanisms are suggested for the development of multifocal TB: the first is hematogenous dissemination that creates one or more lesions. The second is that multifocal TB can occur secondary to lymphohematogenous spread of tubercle bacilli after initial acquisition of TB. The disease may be activated years later in different sites, leading to the development of multifocal disease [8].

Conclusion

The clinical forms of cutaneous TB are too numerous; their knowledge allows diagnosing and sometimes revealing the achievement of another organ for early treatment of the different locations, which is particularly uncommon in the literature in immunocompetent patients.

Conflict of interest

We have no conflict of interest to declare.

REFERENCES

- [1] S. Stelianides, Manifestations et diagnostiques de la tuberculose extra-pulmonaire, *Rev. Mal. Respir.* 14 (1997) 5872–5887.
- [2] N. Denis-Delpierre, D. Merrien, E. Billaud, et al, Multifocal tuberculosis. Apropos of 49 cases in the midwest region. GERICCO (Group for Epidemiology and Research in Clinical Infections of the Central West of France), 1991–1993, *Pathol. Biol. (Paris)* 46 (6) (1998) 375–379.
- [3] V.M. Rai, S.D. Sheno, K. Gowrinath, Tuberculous gluteal abscess coexisting with scrofuloderma and tubercular lymphadenitis, *Dermatol. Online J.* 11 (3) (2005) 14. Dec 1.
- [4] K. Ben Abdelghania, M. Mahfoudhia, S. Turkia, L. Bailia, A. Dridia, A. Khedera, Tuberculose multifocale chez des sujets immunocompétents: deux cas, *Rev. Rhum.* 73 (2006) 1122.
- [5] I. Kivanç-Altunay, Z. Baysal, T.R. Ekmekçi, A. Kφslü, Incidence of cutaneous tuberculosis in patients with organ tuberculosis, *Int. J. Dermatol.* 42 (2003) 197–200.
- [6] B. Kumar, R. Rai, I. Kaur, B. Sahoo, S. Muralidhar, B.D. Radotra, Childhood cutaneous tuberculosis: a study over 25 years from northern India, *Int. J. Dermatol.* 40 (2001) 26–32.
- [7] S. Dally, F. Conso, D. Turreau, M. Gaultier, Multi-focal tuberculosis, *Sem. Hop.* 53 (43) (1977) 2489–2492.
- [8] J.A. Al-Tawfiq, Multi-focal systemic tuberculosis: The many faces of an old nemesis *Med, Sci. Monit.* 13 (4) (2007) CS56–CS60.