

## LETTER TO THE EDITOR

### Tuberculin Skin Test With an Atypical Blistering Reaction

**To the editor:** The tuberculin skin test is widely used in the diagnosis of latent tuberculosis infection.<sup>1</sup> The test is applied intradermally with the Mantoux method using 2 tuberculin units (TU) of purified protein derivative (PPD-RT 23) with Tween 80.<sup>2</sup> In patients infected with *Mycobacterium tuberculosis*, tuberculin produces a delayed, type 4, hypersensitivity reaction which is considered positive when an induration of more than 5 mm diameter occurs after 72 hours, although readings taken as long as 7 days later can be valid.<sup>3</sup> Other studies have observed that in up to 2.5% of patients the reaction can be severe with the formation of necrosis and blisters.<sup>4,5</sup>

We report the case of a 40-year-old woman with no known allergies or relevant disease; she was a smoker of 20 cigarettes a day. She reported mild hemoptysis of some hours' duration. Wasting syndrome was not evident. Physical examination was normal, the patient had no fever or lymph node involvement, and pulmonary auscultation was normal. Laboratory tests revealed that hemoglobin, leukocyte, neutrophil, CD4, CD8, CD4/CD8 findings were normal, as was platelet composition. Hemostasis was also normal as were CH50 and C3; biochemical and arterial blood gases were within normal ranges and serology for human immunodeficiency virus was negative. Chest x-ray revealed an infiltrate in the upper left lobe. Bronchoscopy was normal. The patient was tested with 2 TU of PPD-RT 23 by the Mantoux method, and the reading at 72 hours showed a blistered lesion measuring 60 30-mm (Figure). Biopsy of the lesion showed an epidermal spongiosis with marked edema in the papillary dermis, as well as a moderate chronic inflammatory infiltrate that was mainly lymphocytic. Immunohistochemical techniques revealed Langerhans cells that were slightly more abundant than normal and a slightly greater number



**Figure. Blistered lesion 60 30-mm.**

of lymphocytes positive for CD8 than for CD4. The presence of *M tuberculosis* was observed in the Ziehl-Neelsen sputum stain. Tuberculostatic treatment was successful in curing the patient.

The tuberculin skin test is useful in detecting populations that have been in contact with the tuberculosis bacillus and who present circulating memory T lymphocytes. For the reaction to be positive, 2 to 12 weeks need to have passed since the tuberculosis infection.<sup>3</sup> The intradermal Mantoux skin test with 2 TU of PPD-RT 23 with Tween 80 is considered positive when the induration is greater than 5 mm<sup>2</sup>; positive reaction to nontuberculous mycobacteria is normally smaller than 10 mm, and in some cases reaction is positive with doses of 250

TU. In patients who have been vaccinated against tuberculosis, a positive reaction is not normally greater than 10 mm. Our patient's immunity was normal and she had no additional risk factors for developing tuberculous disease.<sup>4</sup>

The fact that a skin test provokes a reaction with blistering or necrosis in the inoculation zone indicates that the patient has a tuberculosis infection, regardless of the size of the induration.<sup>6</sup> In the case reported, the biopsy of the blistered lesion showed the classic reaction of type 4 hypersensitivity. On occasion, the tuberculosis skin test can show a false positive reaction, as in the case of hypersensitivity to the components of the culture medium or additives, or when the reagent is badly prepared, but in these cases the erythema and the induration do not normally last more than 48 hours.

**F.J. Nicolás-Sánchez, G. Moreno-Arias, and J. Cabau-Rubies**

Servicio de Medicina Interna, Hospital Val d'Aran, Vielha, Lleida, Spain.

1. American Thoracic Society. Diagnostic standards and classification of tuberculosis in adults and children. *Am J Respir Crit Care Med.* 2000;161:1376-95.
2. Grupo de Trabajo sobre Tuberculosis. Consenso Nacional para el control de la tuberculosis en España. *Med Clin (Barc).* 1992;98:24-31.
3. American Thoracic Society. Diagnostic standards and classification of tuberculosis. Tuberculin skin test. *Am Rev Respir Dis.* 1990;142:732-5.
4. Föll M. Vermeidung überschießender Reaktionen bei tuberkulintestung nach Mendel-Mantoux. *Gesundheitswesen.* 2002;64:544-7.
5. Blossom AP, Cleary JD. Atypical tuberculosis skin test reaction. *Ann Pharmacother.* 2003;37:451.
6. Caminero Luna JA, Casal Román M, Ausina Ruiz V, Pina Gutiérrez JM, Sauret Valet J. Diagnóstico de la tuberculosis. *Arch Bronconeumol.* 1996;32:85-99.