



# Metastatic tuberculous abscess of the thorax

## Absceso tuberculoso metastásico del tórax

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### Key words:

Tuberculosis, extrapulmonar tuberculosis, gumma tuberculosa, metastatic tuberculous.

### Palabras clave:

Tuberculosis, tuberculosis extrapulmonar, goma tuberculosa, tuberculosis metastásica.

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### ABSTRACT

We present a 47 year-old male, with a six year history of a purulent ulcer at the parasternal region, taking antimicrobials drugs prescribed by the Pneumology Department with clinical diagnosis of actinomycosis. Skin biopsy showed a granulomatous infiltrate with giant multinucleated cells, and a mycobacteria was cultured in Löwenstein-Jensen. Polymerase chain reaction was positive for *Mycobacterium tuberculosis*. Mantoux test was 15 mm. Chest radiography showed abatement of both hemidiaphragms with right hilar shadows, right basal reticular infiltrate and ipsilateral apical signs. Culture was negative and no evidence of acid-fast bacilli on sputum and urine samples. HIV was no reactive. Improvement was observed after therapy with conventional treatment. Based on the clinical features and laboratory investigations, a diagnosis of tuberculous gumma was made. Tuberculous gumma or metastatic tuberculous abscess is a rare form of cutaneous tuberculosis and should be included in the differential diagnosis of chronic cutaneous abscesses.

### RESUMEN

Presentamos a un varón de 47 años, con antecedentes de seis años de úlcera purulenta en la región paraesternal, tomando fármacos antimicrobianos prescritos por el Departamento de Neumología con diagnóstico clínico de actinomicosis. La biopsia de la piel mostró un infiltrado granulomatoso con células multinucleadas gigantes, y se cultivó una micobacteria en Löwenstein-Jensen. La reacción en cadena de la polimerasa fue positiva para *Mycobacterium tuberculosis*. La prueba de Mantoux fue de 15 mm. La radiografía de tórax mostró disminución de ambos hemidiafragmas con sombras hilares a la derecha, infiltrado reticular basal derecho y signos apicales ipsilaterales. El cultivo fue negativo y no hubo evidencia de bacilos acidorresistentes en muestras de esputo y orina. VIH sin reacción. Se observó mejoría después de la terapia con tratamiento convencional. Sobre la base de las características clínicas y las investigaciones de laboratorio, se realizó un diagnóstico de goma tuberculosa. El goma tuberculoso o el absceso tuberculoso metastático es una forma rara de tuberculosis cutánea y debe incluirse en el diagnóstico diferencial de los abscesos cutáneos crónicos.

## INTRODUCTION

Cutaneous tuberculosis is a rare form of extrapulmonary tuberculosis which has been reported with an incidence of 3.5% of cutaneous tuberculosis with tuberculosis in some other organ.<sup>1</sup> Its incidence has increased in many industrialized nations within this century for various reasons: the emergence of AIDS and the more frequent use of immunosuppressive monoclonal antibodies and inhibitors of tumor necrosis factor (TNF). Other causes are the emergence of multi-resistant strains, lack of interest in social control programmes related to antituberculous, overcrowding and promiscuity and, finally, the migration of people with the disease to countries where the appearance of tuberculous (TB) is less frequent.<sup>2</sup>

## CLINICAL CASE STUDY

Male patient, aged 47 years, having dermatitis evolving over a six-year period, was being treated by the Pneumology Department for «thoracic actinomycosis» using various antimicrobials.

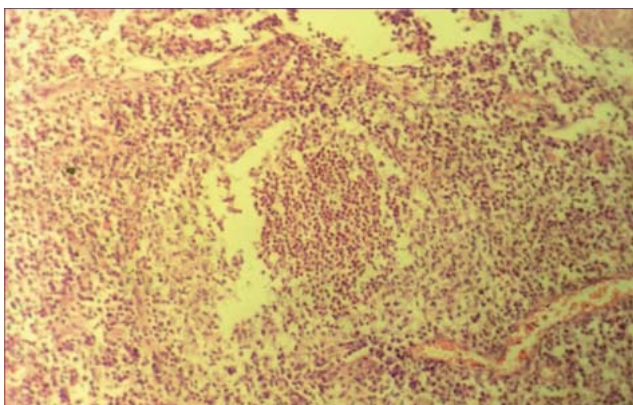
The Dermatology Department observed dermatosis located in a region that is parasternal distal, consisting of a shallow ulcer with a purulent erythematous, painless secretion (Figures 1 and 2). The initial clinical diagnosis was actinomycosis or cutaneous tuberculosis whereby an incisional biopsy was taken and stained with hematoxylin and eosin and multinucleated giant cells that bind to form a granulomatous infiltrate were identified. The biopsy was reported as tuberculoid granuloma (Figure 3) and a skin

biopsy culture in Löwenstein-Jensen (L-J) medium was positive for mycobacteria. The polymerase chain reaction (PCR) was reported as positive for *Mycobacterium tuberculosis*. A purified protein derivative (PPD) or Mantoux test was undertaken and was 15 mm positive with infiltration. Chest radiography in posteroanterior projection showed abatement of both hemidiaphragms with right hilar shadows, right basal reticular infiltrate and ipsilateral apical signs. Also on this side is bronchiectasis with small, discrete mediastinal widening (Figure 4). The Bacteriology Department reported negative evidence in the acid-fast bacilli (AFB) tests and culture of sputum and urine. Based on the clinical

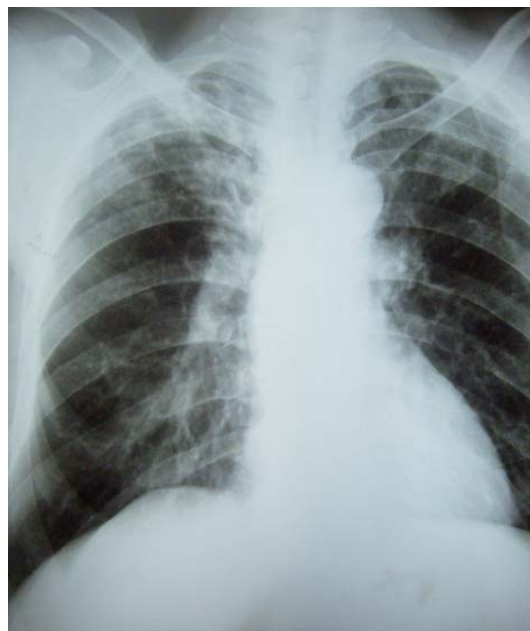
features and laboratory investigations, a diagnosis of tuberculous gumma was made DoTBal® therapy (rifampin, isoniazid, pyrazinamide and ethambutol)



**Figure 1.** Erythematous ulcer along the parasternal area and purulent secretion.



**Figure 2.** Granulomatous infiltrate and tuberculoid granuloma.



**Figure 3.** Teleradiography of the thorax with apical reticular infiltrates and mediastinal widening.



**Figure 4.** Magnification of the same clinical lesion.

was initiated for six months with overall improvement of the skin lesion.

Unfortunately, the patient lost his job and social security healthcare benefits, hence we could not undertake any clinical or epidemiological monitoring.

## COMMENTS

The diagnosis of cutaneous tuberculosis is difficult because the clinical varieties are diverse in terms of topography and morphology. With respect to the spreading mechanism, the following classification has been proposed:

1. Direct inoculation (tuberculous chancre, warty tuberculosis and occasionally tuberculosis lupus vulgar).
2. Contiguity infection (scrofuloderma or tuberculosis cutis colliquativa via lymph node involvement, bone and joint articulations, skin and mucous can be caused by peripheral tuberculosis).
3. Hematogenous or lymphatic (acute miliary tuberculosis, vulgar lupus, gummy tuberculosis or metastatic tubercular abscess).<sup>2,3</sup>

The interest in presenting this case is the rare clinical presentation, that requires us to rule out other diseases.

Gummy tuberculosis or metastatic tuberculous abscess is the result of hematogenous dissemination, which can occur in malnourished and immunocompromised patients but can also be present in the immunocompetent patient.

The lesion begins as a «cold» abscess that pierces the skin by forming liquefaction fistulas and ulcers, which are difficult to distinguish from scrofuloderma tissue. Its more common topography is a trunk and extremities. In an immunosuppressed patient the lesions can be multiple

and has been called miliary tuberculosis of the skin.<sup>4-6</sup>

Currently, the diagnosis of tuberculosis should include identification of species/complexes and determination of sensitivity to the drug with etiologic agent, along with a suggestive clinical presentation, and probability criteria such as: histopathology having tuberculoid granuloma with caseous necrosis; granulomas without necrosis, but with positive tuberculin skin test or tuberculosis (TB) confirmed in another organ and a therapeutic trial with success after one week. Culture and species identification (Lowenstein, Bactec, PCR).<sup>7,8</sup>

Treatment includes a scheme that becomes a fixed-dose tablet with a combination of four drugs (R-rifampin, I-isoniazid, P-pyrazinamide and E-ethambutol), in the following doses: R 150 mg, I 75 mg, P 275 mg and E 400 mg every 24 hours. The treatment of cutaneous tuberculosis should last for six months, as well as for treating patients co-infected with HIV, regardless of the stage of evolution of viral infection, and patients should have treatment restarted when cultivations and diagnostic testing persist with positive results or monitoring should be undertaken of adherence to treatment and testing for drug resistance.<sup>9,10</sup> In the case of our particular patient, he had clinical improvement within one year of treatment, but, as aforementioned, he lost his social security healthcare benefits and has not returned to the clinic.

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