

Revisions of Clinical Cases:

# Tuberculous gumma or metastatic tuberculous abscess as initial diagnosis of tuberculosis in an immunocompetent patient: an unusual presentation

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## ABSTRACT

**Background and Objectives:** Tuberculous cold abscesses or gumma are an unusual form of tuberculosis. We report a case of gumma as initial diagnosis of disseminated tuberculosis.

**Method:** This case was studied in 2012 in Barcelona (Spain). Source data was compiled from the electronic clinical records, hospital reports and additional diagnostic testing.

**Results:** Immunocompetent inmate, born in Cape Verde, living in Spain since the age of four. Positive tuberculin skin test. Initial examination without interest, but a palpable mass in lower back. Fine needle aspiration of the abscess was positive (PCR and Lowenstein) for *M. tuberculosis*. Computed tomography showed lung cavitory nodes in apical part and lung upper right side. After respiratory isolation, antituberculous therapy and an excellent evolution, the patient was discharged from hospital with disseminated tuberculosis diagnosis.

**Discussion:** It is advisable to monitor the injuries since, although rare, it may be secondary to Mycobacterium tuberculosis infection, mainly in immuno-compromised populations and in immigrants coming from hyper-endemic tuberculosis areas.

**Keywords:** Prisons; Tuberculosis, cutaneous; Spain; Diagnosis, Differential; Endemic Diseases; Abscess; HIV.

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## 1. INTRODUCTION

In 2010 there were almost 9 million new cases of tuberculosis (TB) worldwide which were responsible for 350,000 deaths among HIV patients and for 1.1 million deaths among non HIV patients. In spite of these figures the absolute number of TB cases has followed a decreasing trend ever since 2006 instead of the rise which had been predicted<sup>1</sup>. The main clinical presentation is pulmonary tuberculosis although bacillus disseminated during the initial infection may be hosted in any tissue. Extrapulmonary forms represent 10 to 20% of TB cases among immunocompetent patients but this presentation increases in immunocompromised hosts. The main extrapulmonary sites of infection are lymph nodes, the osteoarticular system, the genitourinary system, the meninges and the brain. Other clinical presentations such as the cutane-

ous disease account for less than 0.5% of all cases in developed countries and its prevalence is even lower if we exclude tuberculosis due to BCG and tuberculids. The main objective of this report is to present the case of a young man without congenital or acquired immunodeficiency who was diagnosed with miliary tuberculosis from a soft tissue abscess located in the lumbar region.

## 2. METHODS

Clinical case studied and diagnosed between March and May 2012 by the medical services of the Male Prison of Barcelona (*Centro Penitenciario de Hombres de Barcelona CPHB*) and the department of internal medicine of the *Hospital Consorci Sanitari* in Terrasa (HCST). For the description of the case,

data was collected from the patient's clinical record, from the hospital's record (both emergency and programmed stay records) and from complementary tests conducted.

### 3. RESULTS

35 year old male, natural from Cape Verde who has lived in Spain ever since he was 4 years old. He is currently imprisoned in Barcelona. He has been smoking 10 cigarettes per day until 6 months ago and he occasionally smokes marijuana. He doesn't report any other toxic habits. He has a history of multiple fractures, some of which required surgery, after falling from a fourth floor 16 months ago. In 2008: tuberculin intradermal reaction (IDR) of 25 mm. approximately one month and a half ago he initiated a clinical picture of lumbar pain, dysthermic sensation, shivering, dysuria, muscle cramps and paresthesia. He received treatment based on anti-inflammatory drugs and norfloxacin, with no improvement. He was then transferred to the emergency department of the reference hospital. Blood tests showed the following results: CRP 17.7 mg/dl, normal leukocyte levels with relative neutrophilia and leukopenia, thrombocytosis (448000/mcl), PT 65% and fibrinogen 9g/l. Abdominal and lumbar radiologic studies showed no pathologic results. Ultrasound examination of the kidneys, bladder and prostate was then conducted to rule out dilatation of the excretory system. Lithiasis was also ruled out. A small unspecific 1.2 cm wide nodule was identified in the middle prostate lobe which should be monitored in the future. A urine culture was ordered before the possibility of urinary tract infection and the patient returned to the prison under treatment with cefixime 400 mg/24 h for 3 weeks, pending the results of the culture and the eventual adjustment of treatment according to the results of the antibiogram.

A few days later, the results were informed to be negative by phone and an ultrasound conducted in prison showed minimum right effusion. Since the clinical manifestations persisted and the patient had eventually presented with constitutional symptoms (weight loss, fatigue, anorexia and fever of 37.5 to 30<sup>o</sup>, mostly in the evening) he was admitted to the HCST to continue the study.

Upon hospital admission the patient had fever (39<sup>o</sup>). The physical examination was unspecific except for the existence of a 5cm wide soft tissue lump on the lumbar region (see Figure 1). Tumor markers, serologic testing for syphilis, hepatitis B and C and HIV as well as blood culture tests were all negative. Urine

sediment was normal. Thoracic x rays revealed a right loculated pleural effusion, superior-anterior pleural thickening, medial mediastinal widening with paratracheal subcarinal and right parahilar occupation. An ill defined approximately 4 cm wide mass was also identified in the right upper lobe (RUL) which contacted with the pleura, together with right costophrenic angle blunting. CT of the chest and abdomen showed a right apical cavitated nodule (1.8 x 1.6 cm) in the pulmonary parenchyma, with adjacent micronodules, a 6mm wide nodule in the RUL and subsegmental atelectasis in the middle lobe (ML), nodular thickening of the right apical pleura and affected mediastinal pleura with an important left pleural effusion. Furthermore, hypodense collections in intercostals muscles, in the right adductor muscle and in right (5.8x3x2.5 cm) and left (4.4x3.2x1.6 and 1.9x1.5 cm) paravertebral muscles were identified. Thoracentesis of the left hemithorax was conducted and the following was revealed: 40 cc of yellowish liquid (increased ADA 2.2 ukat/L and negative cytology for malignant cells). The aspiration puncture of the left lumbar lump revealed 10 cc of purulent liquid positive for *M.tuberculosis* by means of PCR testing and culture in the Löwenstein medium. The determination of lymphocytic subpopulations (CD3, CD4, CD4 and coefficients) revealed no alterations. Antibiogram tests showed that the strain was sensitive to all the anti-TB drugs. Sputum smear microscopy could not be conducted as the patient was not expectorating. A 4-drug regimen together with respiratory isolation was initiated. After the fever had disappeared together with the lumbar pain and his general situation improved after the reduction of the left pleural effusion the patient was discharged and diagnosed with military TB (pleural, pulmonary and muscle abscesses). The surgery department managed the lumbar lump by means of repeated aspiration punctures (See Figure 2).

### 4. DISCUSSION

Tuberculous abscesses are a relatively common complication of TB spondylitis<sup>2,3</sup> and in such cases the psoas or paravertebral muscles may become affected, even years after the diagnosis has been made<sup>4</sup>. Although it is a rare condition, tuberculous abscesses have also been described months after BCG vaccination<sup>5</sup>. Nevertheless, cold abscesses or gumma are actually a consequence of the metastatic spread, via the blood, of latent mycobacteria which form abscesses most frequently in the limbs or the trunk usually sparing deeper tissues. This is probably the physiopatho-



Figure 1. Soft tissue abscess on the lumbar region. Lateral image.



Figure 2. Bilateral lumbar paravertebral muscle collections, Computed Tomography (CT).

logical mechanism that this patient suffered. There are few cases of tuberculous gumma in the literature and although they are more usually found in countries with high endemicity of TB<sup>6,7</sup> they have also been described in other countries such as Japan<sup>8</sup> or the United States<sup>9</sup>. Nevertheless, throughout recent years this presentation has experienced an increase mostly associated to immunocompromised patients<sup>10</sup>, mostly those infected by HIV<sup>11</sup>. It has also been suggested that such presentations may be more frequent among the imprisoned population<sup>12</sup>, especially in prisons-like ours- where over 61% of those hosted are immigrants, coming from countries where TB is highly endemic with a prevalence of over 40%<sup>13</sup>.

To conclude we must remember that our patient actually arrived in Spain when he was only 4 years old. Therefore he could have become infected in Cape Verde- where the incidence rate of TB is 147 cases per every 100,000 people: five times higher than in Spain- or later in our country. It is also highly probable that he had been vaccinated with BCG<sup>14</sup>. We must also consider that in 2008 his LTBI was not treated and although there was no absolute indication at the time, the size of the intradermal reaction together with the fact that he was imprisoned both recommend the initiation of LTBI treatment after ruling out the existence of active TB.

Finally, this case suggests that lesions which are rare yet potentially involved with the infection by *M.tuberculosis* need to be closely monitored, especially in immunocompromised patients and immigrants from countries with a high endemicity of TB.

## CORRESPONDENCE

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