

Case Report

Presternal Scrofuloderma in a HIV Infected Patient Case Report and Discussion of the Literature Data

Lucian-Ion Giubelan¹, Alexandru Ionuț Neacșu^{2*}, Luiza Cristiana Rădoi², Eugen Osia^{3,4}

¹University of Medicine and Pharmacy of Craiova, Romania

²Victor Babes, Hospital of Infectious Diseases and Pulmonology, Romania

³Experimental Research Center for Normal and Pathological Aging, Department of Functional Sciences, University of Medicine and Pharmacy of Craiova, Romania

⁴Department of Biophysics, University of Medicine and Pharmacy of Craiova, Romania

*Correspondence author: Alexandru Ionuț Neacșu, Victor Babeș, Hospital of Infectious Diseases and Pulmonology, Craiova, Calea București Nno 126, Romania; Email: alex.neacsu1210@gmail.com

Citation: Neacșu AI, et al. Presternal Scrofuloderma in a HIV Infected Patient Case Report and Discussion of the Literature Data. Jour Clin Med Res. 2023;4(3):1-10.

<http://dx.doi.org/10.46889/JCMR.2023.4304>

Received Date: 20-09-2023

Accepted Date: 03-10-2023

Published Date: 10-10-2023



Copyright: © 2023 by the authors. Submitted for possible open access publication under the terms and conditions of the Creative Commons Attribution (CCBY) license (<https://creativecommons.org/licenses/by/4.0/>).

Abstract

Scrofuloderma is a cutaneous extension of *Mycobacterium tuberculosis* (and rarely *Mycobacterium bovis* or *Calmette-Guerin bacillus*) from a local focus. It is a rare form of extra-pulmonary tuberculosis, starting as a painless skin cold abscess that progresses to fistulisation and ulceration. This article presents a case of presteral scrofuloderma in a non-adherent to treatment HIV-infected patient with disseminated tuberculosis.

Keywords: Scrofuloderma; HIV; Tuberculosis

Introduction

Scrofuloderma is a cutaneous extension of *Mycobacterium tuberculosis* (Mtb) (and rarely *Mycobacterium bovis* or *Calmette-Guerin bacillus*) from a nearby focus (usually lung or cervical / axilar lymph nodes) [1-3]. A search on the PubMed (using terms “cutaneous tuberculosis” and “scrofuloderma”) found that, for the last 15 years, mainly single case reports or small case series were published; there was a study of 165 cases and another one on a long (26 years) period of time [3,4]. There are various forms of cutaneous tuberculosis, most of them (tuberculous chancre, warty Tuberculosis (TB), lupus vulgaris, tuberculous gumma, orificial TB, acute miliary TB and scrofuloderma) representing skin infection due to Mtb, while tuberculids are just an immunologic skin reaction to the Koch bacillus [2,5]. It is assumed that only 1-2% of the extra-pulmonary tuberculosis (which represents less than 15% of total tuberculosis cases) involves the skin that making scrofuloderma a rare determination [2,5-7]. On the other hand, scrofuloderma seems to be the most frequent form of cutaneous TB, involving mainly children or young adults [1,5,8-11].

Mtb reaches the skin via hematogenous or lymphatic route. Multibacillary forms of TB predispose to scrofuloderma, gumma, chancre, orificial or miliary TB [2]. Immaturity of the immune system (e.g., in children) or certain factors leading to immunosupresion (e.g., malnutrition, alcoholism, diabetes melitus, immunosupresive conditions) are risk factors for Mtb replication and further spreading from the initial site to the skin [2]. As regarding Human Immunodeficiency Virus (HIV) infected patients, it is well known that TB is one of the most important opportunistic diseases (mainly in low-resource settings) and the lower the Cluster of Differentiation 4 (CD4) count the higher the risk of extra-pulmonary TB [12,13]. From a clinical point of view scrofuloderma starts as a painless skin cold abscess that progresses to fistulisation and ulceration. It is frequently located on the neck, chest or axille of the patient, but the limbs may also be affected [9,10,14]. Usually it is a single lesion, but multiple determinations have been also described [9,10,14]. Evolution is chronic, but under the antibacillary regimen the lesion may involve and generate keloid scars, skin retraction or atrophie [2,8]. The aim of this case study is to present a case recorded in the

“Victor Babes” Hospital of Infectious Diseases and Pulmonology from Craiova, Romania during the last 25 years, in a HIV-infected patient, non-adherent to treatment, diagnosed with pre-sternal scrofuloderma as part of a disseminated tuberculosis.

Case Description

The patient was a male born in 1989, infected with HIV in early childhood (most probably during his first year of life, as many of other subjects from the Romanian HIV pediatric cohort). He was confirmed with HIV infection in 1996 and he started antiretroviral treatment a year later - two nucleoside reverse transcriptase inhibitors (2NRTIs regimen). In 1998 Highly Active Antiretroviral Therapy (HAART) was introduced - 2 NRTIs + protease inhibitor (PI) regimen. The first CD4 count was 508 cells/cubic millimeters (mm^3) in 2000, then 491 in 2001, but we were not able to quantify his viral load at that time. Between 2001 and 2007 the patient was lost for follow-up. In January 2007 he has returned to the “Victor Babes” Hospital from Craiova and he was diagnosed with pulmonary TB and left pleural effusion, having a positive sputum smear microscopy for Mtb; consequently, he was assigned to the C2 category of HIV infection according to the Center for Diseases Control and Prevention (CDC) classification of adult HIV infection. Antibacillary treatment has started: Isoniazid 300 milligrams (mg) + Rifampicin 600 mg + Ethambutol 1600 mg + Pyrazinamide 2000 mg daily, but, soon after, the patient left the hospital without medical advice and stopped the treatment. In August 2007 he was admitted again, his CD4 count was 59 cells/ mm^3 , he was re-classified as C3, antibacillary treatment was reintroduced, as well as primary prophylaxis for pneumocystosis with Trimethoprim-Sulphametoxazol 480 mg twice a day, 3 days/week, but again he decided to leave the hospital. A year later the patient finally accepted the medical care provided by the Infectious Diseases Clinic. The patient was complaining of fever, cough, weight loss and the presence of a presternal suppurative ulceration. The physical examination revealed a patient with cachexia - height=168 centimeters(cm), weight=47 kilograms (kg), Body Mass Index (BMI)=16.7, with pale skin, a pre-sternal round ulceration of about 6 cm in diameter, with slightly elevated margins, local suppuration and dark-brown tegument around the lesion (Fig. 1), left supraclavicular scar (as a mark of lymph node fistulization due to TB involvement), bilateral pulmonar crackles, extensive oral candidiasis, liver and spleen moderately enlarged. His body temperature was normal and he had a pulse rate of 102/minute (min), blood pressure of 103/54 millimeters of mercury (mmHg), respiratory rate of 20/min, two normal stools daily and normal diuresis.



Figure 1: Presternal scrofuloderma and left supraclavicular scar (as a mark of lymph node fistulization due to TB involvement).

Lab data revealed: hemoglobin level - 10.2 grams/deciliter (g/dL), leukocytes count - 1900/mm³, platelets count - 102000/mm³, Erythrocytes Sedimentation Rate (ESR) - 120 millimeter/hour, glutamic-oxaloacetic transaminase (TGO) level - 86 units/liter (u/L), glutamic-pyruvic Transaminase (TGP) level - 55 u/L. Blood culture was negative (BACTEC vials for aerobic, anaerobic and fungal germs have been used). Oropharyngeal swab culture revealed *Candida albicans*. Sputum microscopy proved to be positive for *Mtb*; culture and susceptibility tests have been ordered. Microscopy and culture from the pre-sternal secretion were negative for common aerobic germs, but positive for *Mtb*. A skin biopsy showed typical aspects of TB granulomatous inflammation.

Ultrasound exam showed numerous hypoechogenic nodules of 0.5-1.5 cm disseminated in both the liver and the spleen, considered TB determinations in these organs. A chest-X ray showed two consolidations on the right pulmonary lobe and a 3 cm caverna with thick wall surrounding the lesion, located in the upper left pulmonary lobe (Fig. 2).

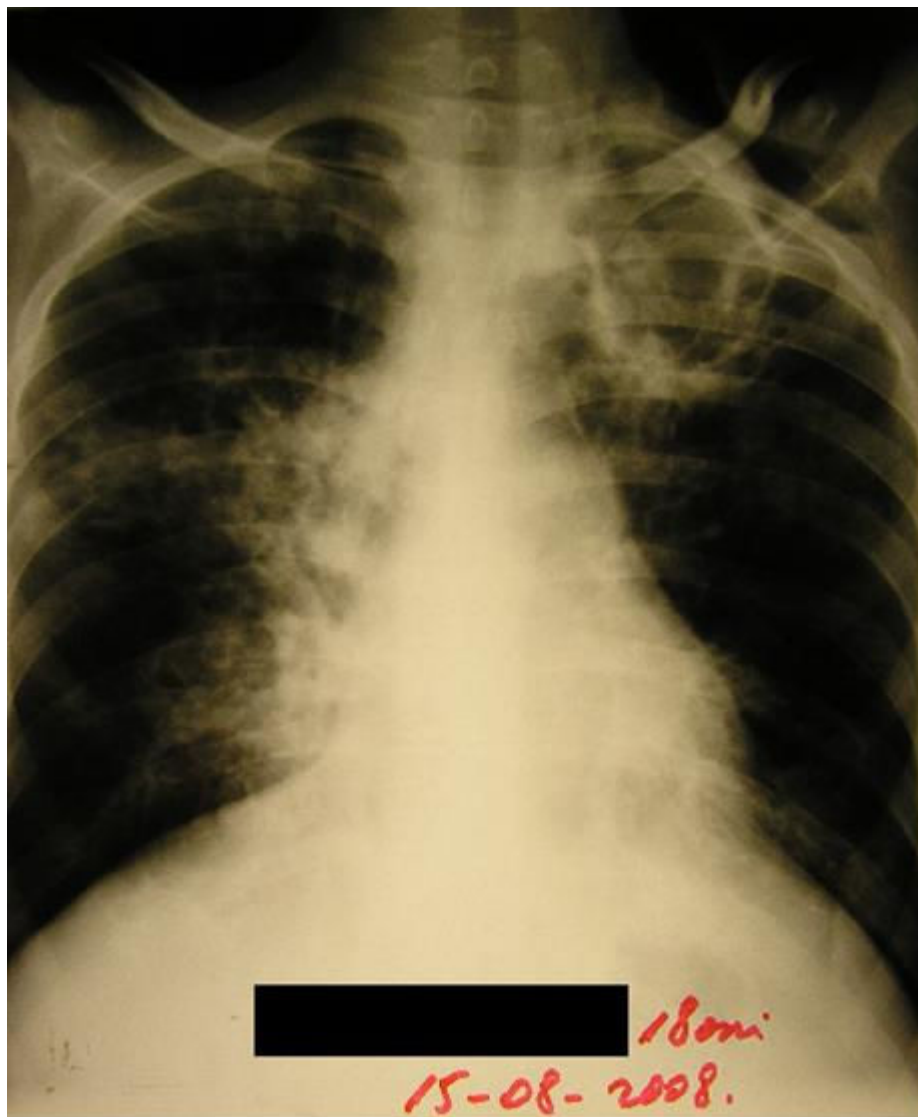


Figure 2: Chest-X ray showing two consolidations on the right pulmonary lobe and a 3 cm caverna with thick wall surrounding the lesion, located in the upper left pulmonary lobe.

Antibacillary regimen was reintroduced with the addition of Ciprofloxacin 1 gram (g) daily, as well as Fluconazole 200 mg daily for the treatment of oral candidiasis; prophylaxis for pneumocystosis with Trimethoprim-Sulphametoxazol was also reintroduced. Cough-relief medicine (Codeine phosphate 30 mg daily) and supportive measures (intravenous perfusions with normale saline 500 milliliters (ml) and 5% glucose 500 ml, vitamin B1 100 mg and B6 250 mg daily) were applied in support of the antimicrobial therapy. Local debridement, pus removal, disinfection and dressing of the skin lesion were also performed. Two

weeks later the patient developed fever, headache and vomiting. Stiff neck was noted and a lumbar puncture raised the suspicion of TB meningitis. Against the medical advice, the patient asked for and signed up the discharge papers. Shortly after that we have learned that he has died at home. Finally, the culture proved that the TB strain was a chemo resistant one.

Discussion

A recent study developed in our clinic looked up for TB-HIV coinfection. We revised 980 files of HIV infected patients admitted in our clinic between 2000-2020, 415 (42.3%) of them with past or present TB coinfection. The majority of cases were pulmonary and / or pleural TB cases, followed by lymph nodes involvement, but only two cases of cutaneous TB (0.2%), the prevalence of this involvement being 5-10 times less than other reports [2,5-7]. We have also searched the PubMed for terms “cutaneous tuberculosis” and “Romania” and we have found only the paper of Rotaru, et al., describing a case of tuberculous chancre, which means that our paper is one of the rarest descriptions of a cutaneous TB involvement in (HIV) Romanian patients [15].

Initially, clinical diagnoses of the case proved to be challenging. Initially a staphylococcal (or other bacterial) cutaneous abscess was considered, but the microbiological tests turn the diagnosis to cutaneous tuberculosis. There was no contact with animals, no black eschar covering the ulceration and no painless edema surrounding the lesion. Also, there was no reported cases in Europe at that time therefore the diagnosis of cutaneous anthrax was ruled out [16]. Lack of contact with animals and the rarity of tularemia and brucellosis in Romania (no cases, respectively 1-3 cases between 2007-2009 made this diagnosis improbable [16]. For the last decades, cutaneous leishmaniasis has been described only in Romanian patients who have travelled abroad but our case has not left the country [17]. Finally, a form of skin cancer (non-AIDS defining) has been taken into consideration, but the biopsy proved otherwise.

From a pathogenical point of view, it seems that, due to the severe immunodepression and non-adherence to the antibacillary regimen, the Mtb spreaded widely and, ultimately, affected the skin, in accordance with the descriptions of other authors [2,12,13]. The most probable source of skin insemination was either lung lesion or cervical lymph nodes. The development of antimicrobial resistance was the result of non-adherence to the specific treatment, but the authors were not able to find data suggesting that this condition predisposes to skin involvement. Unfortunately, due to the patient's behaviour, we were not able to cure him and so, to observe the evolution of the scrofuloderma under the treatment.

Conclusion

Prolonged TB infection and non-adherence to the prescribed anti bacillary regimen lead to the development of a pre-sternal scrofuloderma in a severely immunodepressed HIV-infected patient.

Institutional Review Board Statement

The study was conducted in accordance with the Declaration of Helsinki, and approved by the Ethics Committee of the University of Medicine and Pharmacy, Craiova (approval no. 2235 / April 2, 2017).

Informed Consent Statement

When admitted to the hospital, the patient signed an informed consent allowing the publication of his medical data.

Conflict of Interest

The authors have no conflict of interest to declare.

References

1. Amar T, Patel Z, Rewat H. Scrofuloderma: a rare case report on cutaneous tuberculosis. Clin Med Rev Case Rep. 2020;7.
2. Santos JB, Figueiredo AR, Ferraz CE. Cutaneous tuberculosis: epidemiologic, etiopathogenic and clinical aspects - part I. An Bras Dermatol. 2014;89(2):219-28.
3. Sharma S, Sehgal VN, Bhattacharya SN. Clinicopathologic spectrum of cutaneous tuberculosis: a retrospective analysis of 165 indians. Am J Dermatopathol. 2015;37(6):444-50.
4. Spelta K, Dinitz LM. Cutaneous tuberculosis: a 26-year retrospective study in an endemic area of tuberculosis, Vitoria,

- Espirito Santo, Brazil. Rev Inst Med Trop Sao Paulo. 2016;58.
5. Mann D, Sant'Anna FM, Schmaltz CAS. Cutaneous tuberculosis and HIV infection at a referral centre in Rio de Janeiro, Brazil. Mem Inst Oswaldo Cruz. 2018;113(9):e180184.
 6. Hill MK, Saunders CV. Cutaneous tuberculosis. Microbiol Spectrum. 2017;5(1):TNM17-0010.
 7. Mello RB, Vale ECSB, Baeta IGR. Scrofuloderma: a diagnostic challenge. An Bras Dermatol. 2019;94(1):102-4.
 8. Gupta SD, Roy RD. Scrofuloderma: a rare case report of sequelae of intestinal tuberculosis. Int J Dermatol Venerol. 2021;4(3):185-7.
 9. Iftihar U, Nadeem M, Aman S, Kazmi AH. Scrofuloderma: a common type of cutaneous tuberculosis. A case report. J Pak Assoc Dermatol. 2011;21(1):61-5.
 10. Menaldi SLSW, Lubis FF, Fadhilla JR, Widaty S. Tuberculous dactylitis in a case of multiple scrofuloderma. Case Rep Dermatol. 2022;14:194-202.
 11. Varshney A, Goyal T. Incidence of various clinico-morphological variants of cutaneous tuberculosis and HIV concurrence: a study from the Indian subcontinent. Ann Saudi Med. 2011;31(2):134-9.
 12. Leeds IL, Magee MJ, Kurbatova EV. Site of extrapulmonary tuberculosis is associated with HIV infection. Clin Infect Dis. 2021;55(1):75-81.
 13. Bruchfeld J, Correia-Neves M, Kallenius G. Tuberculosis and HIV coinfection. Cold Spring Harb Perspect Med. 2015;5(7):a017871.
 14. Noni NS, Endah GH, Aryati Y. A very rare case of scrofuloderma with multiple cervical lymphadenitis tuberculosis. Resp Med Case Rep. 2019;27.
 15. Rotaru M, Tăban S, Țăroi M. An immunocompetent young patient with tuberculosis of the penis; a challenging case. Rom J Morphol Embryol. 2015;56(2):569-74.
 16. ECDC. Annual epidemiological report. Reporting on 2009 surveillance data and 2010 epidemic intelligent data. 2011. [Last accessed on: October 02, 2023]
<http://ecdc.europa.eu>
 17. Daraban Bocaneti F, Ivanescu LM, Miron L, Tanase OI, Dascalu MA. An overview on leishmaniasis in Romania: diagnosis and therapeutics. Tropical Medicine and Infectious Dis. 2022;7(11):334.

Journal of Clinical Medical Research



Publish your work in this journal

Journal of Clinical Medical Research is an international, peer-reviewed, open access journal publishing original research, reports, editorials, reviews and commentaries. All aspects of medical health maintenance, preventative measures and disease treatment interventions are addressed within the journal. Medical experts and other related researchers are invited to submit their work in the journal. The manuscript submission system is online and journal follows a fair peer-review practices.

Submit your manuscript here: <https://athenaeumpub.com/submit-manuscript/>