

# Revisiting Scrofula: An Entity Not to Forget in Migrants' Health

Sara Neves <sup>1</sup>, Fábio Videira Santos <sup>2</sup>

Review began 05/22/2023

Review ended 06/03/2023

Published 06/05/2023

© Copyright 2023

Neves et al. This is an open access article distributed under the terms of the Creative Commons Attribution License CC-BY 4.0., which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

1. Department of Infectious Diseases, Centro Hospitalar Universitário de Santo António, Porto, PRT 2. Department of Infectious Diseases, Instituto Português de Oncologia do Porto, Porto, PRT

**Corresponding author:** Sara Neves, saraneves91@hotmail.com

## Abstract

Tuberculous lymphadenitis (TBL) is one of the most common presentations of extrapulmonary tuberculosis (EPTB). The particularity of this presentation is the difficulty in establishing a definitive diagnosis, as clinical manifestations and imaging may be unspecific.

We describe a case of tuberculous cervical lymphadenitis in a young male from Pakistan, a high-burden tuberculosis country. We intend to raise awareness of this entity, given the high index of suspicion required to diagnose it, which can lead to delays in appropriate treatment, potentially increasing the morbidity and mortality of affected patients. Increased awareness is especially important in immigrants, in whom tuberculosis cases continue to increase, exposing the need for easy and equitable access to healthcare. A brief review of the subject is also presented.

**Categories:** Infectious Disease, Public Health

**Keywords:** extrapulmonary tuberculosis, migrants, lymphadenitis, lymph node, tuberculosis

## Introduction

In 2021, 6.4 million people were diagnosed and notified with tuberculosis (TB) globally. Of these, 17% were cases of extrapulmonary tuberculosis (EPTB) [1]. In Europe, of all TB cases reported in 2020, 21.5% were EPTB, with Portugal being one of eight countries with an EPTB proportion above 30% [2].

Tuberculous lymphadenitis (TBL) constitutes nearly 35% of all EPTB cases and most frequently affects cervical lymph nodes (60%-90%), a condition historically known as scrofula [3,4]. Scrofula is considered the local manifestation of a systemic disease that has disseminated to the lymph nodes, reflecting the reactivation of latent TB. However, reports have suggested that TB cervical lymphadenitis can occur through primary infection of the adenoids and tonsils, indicating that the pathogenesis of the disease remains unclear [5].

Most cases of TBL in high-income countries affect young immigrants from tuberculosis-endemic areas [3,6]. The disease has a female preponderance, and the peak age of onset is 30-40 years [7]. It usually presents as an isolated nontender painless lymphadenopathy with progressive enlargement, with systemic symptoms being uncommon [7]. The main complications seen when cervical lymph nodes are affected are fistulization, ulceration, and abscess formation.

The diagnosis of TBL is difficult, as it relies on a high index of suspicion from clinicians, who may not be familiar with its presentation. This lack of awareness can lead to delays in appropriate treatment, potentially increasing the morbidity and mortality of affected patients, some of whom might end up becoming an active source of transmission in the community through concomitant pulmonary involvement [3]. Once the cause is presumed, fine-needle aspiration (FNA) is a safer, less invasive procedure to collect biological samples compared with excisional biopsy [7]. For treatment in adults, the internationally accepted first-line regimen should be offered, which consists of two months of isoniazid, rifampicin, ethambutol, and pyrazinamide, followed by at least four months of isoniazid and rifampicin [8].

## Case Presentation

A 24-year-old male from Pakistan, living in Porto, Portugal, for two years, working as a kitchen helper, with no past medical history or chronic medication, came to the emergency department due to a tumefaction on his right supraclavicular region. The patient first noticed the tumor two months before coming to the hospital and described a progressive enlargement, with an additional presentation of inflammatory signs such as pain, redness, and heat. He denied any systemic symptoms, specifically fever, night sweats, weight loss, shortness of breath, or coughing. He indicated having no contact with people who were sick and had no knowledge of cases of TB in his family.

On physical examination, the patient presented with a right cervical tumor measuring approximately 6 cm

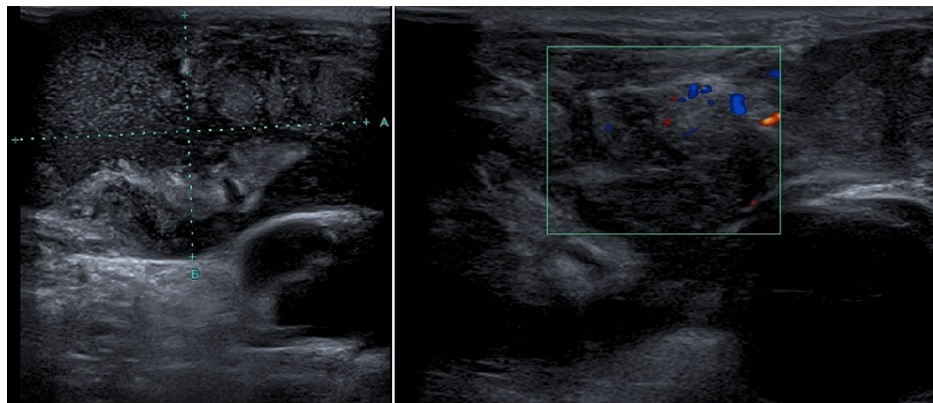
### How to cite this article

Neves S, Videira Santos F (June 05, 2023) Revisiting Scrofula: An Entity Not to Forget in Migrants' Health. Cureus 15(6): e40012. DOI 10.7759/cureus.40012

in diameter, which was warm and tender, with erythema, subtle fluctuation, and no evidence of exudates or fistulas (Figure 1). An ultrasound of the lesion revealed a heterogenic structure (5.6 × 3.6 cm) with areas of cystic appearance and others presenting vascularization, compatible with tuberculous lymphadenitis (Figure 2). FNA was performed, and samples were collected. HIV and viral hepatitis B and C serological tests were negative.



**FIGURE 1: Enlarged right cervical lymph node**



**FIGURE 2: Ultrasound of the lesion showing a heterogenic structure with vascularization**

Given the suspicion of TB and the risk of pulmonary involvement, the patient was placed in an airborne infection isolation room, and sputum samples and a chest X-ray were requested. Unfortunately, the patient abandoned the emergency department before providing the samples and performing the X-ray, and public health authorities were promptly notified of the case.

The diagnosis was confirmed with both positive Ziehl-Neelsen (ZN) staining and polymerase chain reaction (PCR) of the *Mycobacterium tuberculosis* complex on the samples collected by FNA. One month later, culture was also positive, documenting susceptibility to first-line drugs.

Fortunately, the patient was later located and contacted by public health authorities, pulmonary involvement was excluded with a normal chest X-ray and negative ZN staining and PCR of the *Mycobacterium tuberculosis* complex on the sputum samples, and appropriate treatment was started.

## Discussion

In the presented case, the patient was a young immigrant from a country with a high burden of TB, which is consistent with the reported epidemiology of the disease in high-income countries [3,7]. He was living in Portugal for only two years, had no past medical history, and denied having contact with people who were sick, suggesting that the isolated TBL was probably due to the reactivation of latent TB. Contrary to the usually seen characteristics of TBL, the patient presented a tumor with inflammatory signs, and the ultrasound revealed a heterogenic structure with areas of cystic appearance evidencing abscess formation, one of the main complications seen in cervical TBL.

According to the World Health Organization (WHO), a diagnosis of TB is made based on a positive biological

specimen by smear microscopy, culture, or a WHO-recommended rapid diagnostic test (e.g., Xpert MTB/RIF). Strong clinical evidence consistent with active TB in the absence of laboratory confirmation also qualifies as clinically diagnosed TB [8]. Biological samples may be obtained by FNA, which is a safe and inexpensive procedure with few complications [9]. In cases where the diagnosis is not achieved through FNA, excisional lymph node biopsy is the preferred alternative. Incision and drainage techniques have been associated with prolonged wound discharge and scarring and therefore are not recommended [10]. Once collected, specimens should be submitted to histology, acid-fast stain, nucleic acid amplification testing, and culture. Despite the growing use of WHO-approved molecular tests for the initial detection of the *Mycobacterium tuberculosis* complex, culture remains the gold-standard method to achieve a conclusive microbiological diagnosis and provides susceptibility testing [8]. In the presented case, there was a high risk of multidrug-resistant TB (MDR-TB) because Pakistan is a high-burden TB country and is estimated to have the third-highest prevalence of MDR-TB globally [1].

Whenever TB is suspected or diagnosed, it is essential to exclude pulmonary involvement to prevent disease transmission and other coinfections such as HIV, which can affect the patient's prognosis. Treatment for EPTB does not differ from the well-known multidrug treatment regimens for the pulmonary forms of the disease, consisting of at least two months of isoniazid, rifampicin, ethambutol, and pyrazinamide, followed by four months of isoniazid and rifampicin [8]. Response to treatment is usually slow, and a paradoxical reaction may occur between three weeks and four months after treatment initiation, with an increase in lymph node size or enlargement of additional lymph nodes [7].

Considering the increasing globalization and the present European migrant crisis, the existence of a free, equitable, and accessible national health service has never been so vital to ensuring appropriate care for the most vulnerable populations. This case also emphasizes the importance of public health authorities in tracking patients with potentially transmissible diseases and handling their re-enrollment in required health services. Further studies concerning the cost-effectiveness of latent TB screening of immigrants from high-burden TB countries are needed, which could potentially prevent TB reactivation and disease transmission.

## Conclusions

It is important for physicians to note cases of TBL such as this one, given that symptoms and imaging can be undistinctive, despite being one of the most common presentations of EPTB. There was a high risk of multidrug-resistant TB in this case because Pakistan is a high-burden TB country and is reported to have the third-highest prevalence of MDR-TB globally. It is imperative that national health services are available and capable of ensuring easy access and equitable healthcare to the most vulnerable populations such as migrants and refugees to prevent public health crises.

## Additional Information

### Disclosures

**Human subjects:** Consent was obtained or waived by all participants in this study. **Conflicts of interest:** In compliance with the ICMJE uniform disclosure form, all authors declare the following: **Payment/services info:** All authors have declared that no financial support was received from any organization for the submitted work. **Financial relationships:** All authors have declared that they have no financial relationships at present or within the previous three years with any organizations that might have an interest in the submitted work. **Other relationships:** All authors have declared that there are no other relationships or activities that could appear to have influenced the submitted work.

## References

1. World Health Organization: Global tuberculosis report 2022. (2022). <https://www.who.int/teams/global-tuberculosis-programme/tb-reports/global-tuberculosis-report-2022>.
2. European Centre for Disease Prevention and Control, World Health Organization, Regional Office for Europe: Tuberculosis surveillance and monitoring in Europe 2022: 2020 data. European Centre for Disease Prevention and Control, World Health Organization, Regional Office for Europe, 2022. <https://apps.who.int/iris/handle/10665/352555>.
3. Mathiasen VD, Eiset AH, Andersen PH, Wejse C, Lillebaek T: Epidemiology of tuberculous lymphadenitis in Denmark: a nationwide register-based study. *PLoS One*. 2019, 14:e0221232. [10.1371/journal.pone.0221232](https://doi.org/10.1371/journal.pone.0221232)
4. Kamal MS, Hoque MH, Chowdhury FR, Farzana R: Cervical tuberculous lymphadenitis: clinico-demographic profiles of patients in a secondary level hospital of Bangladesh. *Pak J Med Sci*. 2016, 32:608-12. [10.12669/pjms.323.9550](https://doi.org/10.12669/pjms.323.9550)
5. Polesky A, Grove W, Bhatia G: Peripheral tuberculous lymphadenitis: epidemiology, diagnosis, treatment, and outcome. *Medicine (Baltimore)*. 2005, 84:350-62. [10.1097/01.md.0000189090.52626.7a](https://doi.org/10.1097/01.md.0000189090.52626.7a)
6. Fain O, Lortholary O, Djouab M, et al.: Lymph node tuberculosis in the suburbs of Paris: 59 cases in adults not infected by the human immunodeficiency virus. *Int J Tuberc Lung Dis*. 1999, 3:162-5.
7. Fontanilla JM, Barnes A, von Reyn CF: Current diagnosis and management of peripheral tuberculous lymphadenitis. *Clin Infect Dis*. 2011, 53:555-62. [10.1093/cid/cir454](https://doi.org/10.1093/cid/cir454)
8. WHO consolidated guidelines on tuberculosis: module 4: treatment: drug-susceptible tuberculosis treatment. (2022). <https://www.who.int/publications/i/item/9789240048126>.
9. WHO operational handbook on tuberculosis: module 3: diagnosis: rapid diagnostics for tuberculosis

- detection, 2021 update. (2021). <https://www.who.int/publications/i/item/9789240030589>.
10. Nahid P, Dorman SE, Alipanah N, et al.: Official American Thoracic Society/Centers for Disease Control and Prevention/Infectious Diseases Society of America clinical practice guidelines: treatment of drug-susceptible tuberculosis. *Clin Infect Dis*. 2016, 63:e147-95. [10.1093/cid/ciw376](https://doi.org/10.1093/cid/ciw376)