








LYMPH NODE TUBERCULOSIS WITH GENITAL INVOLVEMENT: CASE REPORT

TUBERCULOSIS GANGLIONAR CON COMPROMISO GENITAL: REPORTE DE CASO

Joel Isaac Atencio Paulino ^{1,a}, Waldir Paucar Huaman ^{2,a}, Deivi Nick Galarza Caceres ^{2,b},
Jeampier Bendezu Meza ^{2,b}, Jhonatan Mauricio Crispin Ayala ^{2,b}

ABSTRACT

Introduction: We present the case of a 44-year-old male patient with a family history of lymphoma and hyperthyroidism. **Case report:** He started the disease three months before admission to hospital with pain in the right leg, abdominal pain, weight loss and night sweats. He was diagnosed in his hospitalization with ascites in a cavity of undetermined etiology, and multiple polygastric and fossa lymph nodes right iliac. At 6 months, the symptoms persist and a nodule is added on the penis, left testicular edema and purulent discharge from the right inguinal node, being diagnosed orchiepididymitis. **Conclusion:** Initially he had negative markers for tuberculosis (TB), however, a lymph node biopsy was performed and the analysis with Xpert MTB/RIF where it resulted positive. The patient improved considerably with anti-TB treatment and antibiotics for purulent discharge.

Keywords: Extrapulmonary tuberculosis; Lymph node tuberculosis; Late diagnosis. (Source: MESH-NLM)

RESUMEN

Introducción: Se presenta el caso de un paciente varón de 44 años con antecedentes familiares de linfoma e hipertiroidismo. **Caso clínico:** Él inició la enfermedad tres meses antes del ingreso hospitalario con dolor en la pierna derecha y abdominal, pérdida de peso y sudoración nocturna. Fue diagnosticado en su internamiento con ascitis en cavidad pélvica de etiología indeterminada, y múltiples adenomegalias poligástricas y en fosa iliaca derecha. A los seis meses, los síntomas persistieron y se agregó un nódulo en el pene, edema testicular izquierdo y secreción purulenta del ganglio inguinal derecho; se diagnosticó orquiepididimitis. **Conclusión:** Inicialmente, tuvo marcadores negativos para tuberculosis (TBC), sin embargo, se realizó biopsia del ganglio y el análisis con Xpert MTB/RIF, lo que resultó positivo. El paciente mejoró considerablemente con tratamiento anti TB y antibióticos para la secreción purulenta.

Palabras clave: Tuberculosis extrapulmonar; Tuberculosis ganglionar; Diagnóstico tardío. (Fuente: DeCS-BIREME)

¹ Universidad de San Martín de Porres, Lima, Peru.

² Faculty of Human Medicine, Universidad Nacional del Centro del Perú, Huancayo, Peru.

^a General Physician

^b Medical Student

Cite as: Atencio Paulino JI, Paucar Huaman W, Galarza Caceres DN, Bendezu Meza J, Crispin Ayala JM. Lymph node tuberculosis with genital involvement: Case report. Rev Fac Med Hum. 2024;24(1):197-202. doi:10.25176/RFMH.v24i1.5905

Journal home page: <http://revistas.urp.edu.pe/index.php/RFMH>

Article published by the Journal of the Faculty of Human Medicine of the Ricardo Palma University. It is an open access article, distributed under the terms of the Creative Commons License: Creative Commons Attribution 4.0 International, CC BY 4.0 (<https://creativecommons.org/licenses/by/4.0/>), which allows non-commercial use, distribution and reproduction in any medium, provided that the original work is duly cited. For commercial use, please contact revista.medicina@urp.edu.pe





INTRODUCTION

A 44-year-old male patient presented with nonspecific initial symptoms such as intermittent pain in the right leg and epigastrium radiating toward the flanks; subsequently, weight loss, night sweats, nausea, headache, and general discomfort were added. The Centers for Disease Control and Prevention (CDC) reported that, in the U.S., 20.6% of tuberculosis (TB) cases were extrapulmonary, with the most frequent being the ganglionic at 38.2% of all forms⁽¹⁾. Ganglionic tuberculosis or tuberculous lymphadenitis, is one of the most common forms of extrapulmonary tuberculosis⁽²⁾; its most common location is the cervical region, known as scrofula⁽³⁾.

In Peru, around 27,000 cases of active disease are reported, and we are one of the countries with the highest number of extrapulmonary tuberculosis cases in the Americas⁽⁴⁾. Cervical infection would occur through direct contact of the bacilli with Waldeyer's ring, and in the peripheral ganglionic form, the pathogenic mechanism would be the reactivation of an infection by primary pulmonary TB disseminated hematogenously⁽⁵⁾. The most common presentation of peripheral ganglionic TB is the appearance of painless unilateral cervical lymphadenopathy (83%); other less affected lymph node groups are axillary and mediastinal⁽³⁾.

Bilateral involvement occurs in 26% and is frequent in HIV-positive patients; most patients present with lymph nodes between 1-3 cm in diameter⁽⁶⁾. The definitive diagnosis is made by positive culture for *M. tuberculosis*, confirmed by lymph node bacilloscopy, but its sensitivity is low, so the Xpert MTB/RIF molecular method by polymerase chain reaction (PCR) is useful due to its high sensitivity^(6,7). According to the Ministry of Health of Peru (MINSa), therapy is based on rifampicin, isoniazid, ethambutol, and pyrazinamide daily for two months, followed by rifampicin and isoniazid three times a week for four more months, to complete six months⁽⁷⁾. A case is presented of a patient treated in Huancayo, then referred to the city of Lima for

molecular laboratory analysis, where ganglionic TB was found with a good outcome, in order to highlight the rarity of the case and its interest and study potential, since extrapulmonary tuberculosis, in general, represents a smaller proportion of cases compared to pulmonary tuberculosis. We sought to understand the factors that contributed to the late diagnosis of ganglionic tuberculosis with genital involvement in this patient and evaluate the impact of such delay on his health and the course of the disease.

CLINICAL CASE

The patient was a 44-year-old male, of Christian religion, and employed as a car painter, residing in the city of Concepción-Junín, Peru. He reported a family history on his sister's side: hyperthyroidism, and his maternal grandmother with non-Hodgkin lymphoma. He reported no addictions or adverse drug reactions. The patient began with nonspecific symptoms: intermittent pain in the right leg and epigastrium radiating towards the flanks over the course of three months; progressively, weight loss, night sweats, nausea, headache, and general discomfort were added. In early July 2022, he visited a private clinic where physical examination revealed stable vital signs, absence of lymphadenopathy, and no abnormalities in the respiratory or cardiovascular examination. Hemogram, complete urine examination, tests for HIV, hepatitis B, C, and venereal diseases were negative.

Upper abdominal ultrasound described hepatomegaly associated with ultrasound signs of hepatic steatosis, nonspecific pelvic collection, lithiasic cholecystopathy without acuteness, and uncomplicated fatty umbilical hernia. Contrast-enhanced chest and abdomen computed tomography (CT) showed marked streaking of the fat planes diffusely throughout the abdomen associated with multiple epigastric and right iliac fossa lymph nodes, with the largest reaching a caliber of 10 mm, with a probable inflammatory aspect. Later that same month, in the Gastroenterology department,

bilateral inguinal lymph nodes < 1cm were described, with a positive wave sign and displaceable dullness (+); pathological anatomy following endoscopy revealed abundant lymphocytes without atypia, making it impossible to rule out MALT lymphoma, suggesting post-treatment follow-up. In mid-August, the patient

was admitted to Huancayo Hospital for further studies; he underwent laboratory tests (serological, biochemical, urinary, immunological, and tumor markers), which returned normal results with slight anisocytosis, as seen in Table 1.

Table 1. Results of admission hospital exams.

Exams	Result	Normal Value
ESR	12 mm/h	0-15 mm/h
C-reactive protein	71,41 mg/dl	< 1 mg/L
Leukocytes	12 210	4,500-11,000 cells/mL
Hemoglobin	13,3 g/dl	13.4-17.5 g/dL
Hematocrit	43	38-54 %
Platelets	431000	150,000-450,000 platelets x mL
Neutrophils	73,3 %	40-60 %
Lymphocytes	15,6 %	20-40 %
Brucellosis Rose Bengal Test		Negative agglutination

ESR: Erythrocyte Sedimentation Rate

CLINICAL CASE



Figure 1. Presence of free fluid in the pelvic area measuring approximately 10 mm.

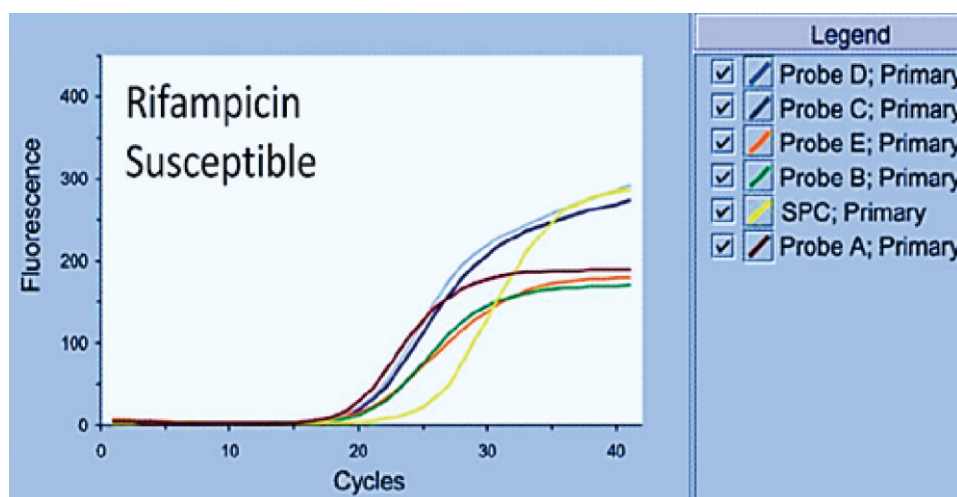


Figure 2. Positive molecular result for ganglionic TB.

CLINICAL CASE

Sequenced chest X-ray showed no abnormalities. Tests for brucellosis, bartonellosis, sputum bacilloscopy culture for BK, and purified protein derivative (PPD) skin test were negative; additionally, Rheumatology ruled out autoimmune processes. Ultimately, no definitive diagnosis was made; only symptomatic treatment was provided, and the patient was discharged. After five months of hospitalization, in January 2023, the patient continued to experience symptoms and reported a painless 1 cm nodule on the penile shaft initially without signs of inflammation. He sought care at the Urology department of Hospital de Huancayo, where he was diagnosed with penile nodules, orchitis, and epididymitis; complete urine examination was normal, and Doppler ultrasound showed no significant changes; he was prescribed antibiotics and tramadol for conditional pain relief.

One month into the clinical presentation, the patient developed right flank ascites and increased testicular volume with purulent discharge from the penile nodule and right inguinal region, prompting serum alpha-fetoprotein, chorionic gonadotropin, and another Doppler ultrasound, all of which returned normal. At the end of February 2023, prompted by a family member and another physician, he visited a private laboratory in Lima, where inguinal lymph node biopsy was performed and GeneXpert molecular profiling for TB by PCR was positive, as shown in Figure 1; simultaneously, gram staining, leukocytes, bacterial

flora, and culture were negative. With these results, the diagnosis of extrapulmonary ganglionic TB was confirmed, and he was referred to the Infectious Diseases department of his local hospital, where he was started on antituberculous treatment with H, R, E, Z, and pyridoxine. The patient improved regarding his symptoms, and the genital and inguinal lesions resolved; he is currently on a high-protein diet and is being monitored by the nearest health center to his residence.

DISCUSSION

The diagnosis of extrapulmonary tuberculosis represents a challenge due to its nonspecific symptoms and varied presentation. Most infections occur in the cervicofacial region, and those diagnosed in the inguinal region are rare. A systematic review reported only 15 cases of inguinal tuberculous lymphadenitis from 2003 to 2021⁽⁸⁾, underscoring the importance of this case. Tuberculosis accounts for up to 43% of peripheral lymphadenopathies and is endemic in resource-limited settings⁽⁹⁾. Extrapulmonary tuberculosis occurs in up to 60% of HIV-infected patients and often presents with signs of pulmonary involvement⁽¹⁰⁾. Most reported cases, including inguinal locations, are associated with tuberculous involvement elsewhere in the body⁽¹¹⁾. The pathogenesis of inguinal tuberculosis is unclear; two hypotheses are possible: hematogenous spread from a primary pulmonary focus



and secondary isolated involvement of inguinal lymph nodes, or lymphatic spread from male genital ducts preceding infection from the upper urinary tract⁽¹¹⁾.

In the present case, CT and chest X-ray did not show imaging signs suggestive of primary pulmonary TB such as fibrosis, pulmonary infiltrates, or mediastinal lymphadenopathies. Late inguinal lymphadenopathies were evident on clinical examination; regarding the literature, inguinal tuberculous lymphadenitis presentation is more commonly unilateral⁽¹²⁾. There was a nonspecific pelvic collection on abdominal ultrasound; CT described polygastric and right iliac fossa lymph nodes, and a positive wave sign and displaceable dullness, which is not frequent in the literature⁽¹³⁾.

On the other hand, in this report, BK cultures in sputum and PPD for tuberculosis were negative. The diagnosis of tuberculous infection should be considered in the differential diagnosis when the etiology of lymphadenitis is not easily explained. The initial manifestations of inguinal tuberculous lymphadenitis are characterized by chronicity and lack of response to standard antibacterial treatment⁽¹⁴⁾. PPD testing at this stage may be negative; lymph nodes are usually firm, painless, and rarely inflamed and may remain so for weeks, months, or even years until the condition becomes aggressive and may present with local inflammatory symptoms such as fistulization and/or drainage, similar to the present case; draining of necrotic glands over time is also reported, and this evolution usually does not accompany symptoms such as fever. The diagnosis of tuberculous lymphadenitis is established by microbiological analysis of aspirated pus via fine needle or fistula secretion; and if necessary, biopsy of the lymphadenopathy; although biopsy may suggest tuberculosis due to the presence of granulomatous lesions, cultures are positive in 70-80% of cases, with molecular techniques Dot-ELISA and PCR currently being much more sensitive (93.2%) and specific, as well as rapid⁽¹⁵⁾. In this case, treatment

initiation was based on GeneXpert profiling for TB; not on culture, staining, and microscopy, which were negative. Therefore, the World Health Organization (WHO) recommends PCR and/or NAAT tests for the analysis of respiratory and non-respiratory samples. Singh P, in their review, found that 17 of 19 cases of inguinal tuberculous lymphadenitis were diagnosed using the Xpert MTB/RIF method, and the other tests yielded contradictory results⁽¹⁴⁾. It is concluded that tuberculosis should be considered in the differential diagnosis of any disease affecting a peripheral lymph node, especially in the context of endemic regions and/or active disease; furthermore, it is necessary to determine on a larger scale the sensitivity and specificity of molecular tests to agree on the method for the diagnosis of extrapulmonary tuberculosis.

The case underscores the need to maintain a high index of suspicion for extrapulmonary tuberculosis, even in the absence of obvious pulmonary signs. Similarly, the importance of using advanced molecular techniques, such as GeneXpert, in the diagnosis of tuberculous lymphadenitis when conventional tests are inconclusive, is highlighted. Additional, large-scale studies are essential to validate the sensitivity and specificity of these tests in similar contexts and, ultimately, to establish clearer guidelines for the diagnosis of extrapulmonary tuberculosis; therefore, it seeks to raise awareness of the understanding of an uncommon presentation of tuberculosis, highlighting the need for a multidisciplinary approach and early and effective clinical management to improve outcomes in patients with this condition.

ACKNOWLEDGMENTS

We would like to express our sincere gratitude to the individuals and institutions that contributed invaluable assistance to the completion of this study on the case of ganglionar tuberculosis with genital involvement. Additionally, we extend our appreciation to the patient and their family, whose cooperation and valuable information made this research possible.





Authorship Contribution: JIAP participated in the conception and design of the work, analysis and interpretation of data, critical revision, final approval, provision of study material, and acquisition of funding; WPH, in the conception and design of the work, collection and obtaining of results, analysis and interpretation of data, critical revision, final approval, study supervision and technical advice; DNGC, in the obtaining and collection of results, critical revision, final approval, provision of study material, acquisition of funding and statistical advice; JBM, in the analysis and interpretation of data, writing, final approval, acquisition of funding, statistical advice and technical advice; JMCA, in the analysis and interpretation of

data, final review, final approval, provision of study material and acquisition of funding.

Funding: Self-funded.

Conflict of Interest: The authors declare no conflict of interest.

Received: September 11, 2023.

Approved: March 31, 2024.

Correspondence: Isaac Atencio Paulino.

Address: Av. Manantial 4817, Sapallanga- Huancayo.

Telephone: (+51) 930427558

Email: yoel_005@yahoo.com

REFERENCES

1. Deutsch-Feldman M, Pratt RH, Price SF, Tsang CA, Self JL. Tuberculosis - United States, 2020. *MMWR Morb Mortal Wkly Rep*. 26 de marzo de 2021;70(12):409-14. Disponible en: <https://dx.doi.org/10.15585/mmwr.mm7012a1>.
2. Ramírez-Lapausa M., Menéndez-Saldaña A., Noguerado-Asensio A.. Tuberculosis extrapulmonar, una revisión. *Rev. esp. sanid. penit.* [Internet]. 2015 [citado 2023 Jul 30]; 17(1):3-11. Disponible en: <https://dx.doi.org/10.4321/S1575-06202015000100002>.
3. Smaoui S, Mezghannia M, Hammamic M, Zalilad N, Marouanea C, Kammouna S et al. Tuberculosis lymphadenitis in a southeastern region in Tunisia: Epidemiology, clinical features, diagnosis and treatment. *Inter J Mycobacteriol* 2015; 4: 196-201. Disponible en: <https://dx.doi.org/10.1016/j.ijmyco.2015.04.004>.
4. Farga F. Tuberculosis, 3ra edición. *Revista médica de Chile*. mayo de 2011;139(5):681-2. Disponible en: <https://dx.doi.org/10.4067/S0034-98872011000500019>.
5. Agab Eldour AA, Mohamed Salih EN, Ahmed HG. Incidence of tuberculosis and amyloidosis among Sudanese patients presented with enlarged nodes. *J Trop Med* [Internet]. 2014 [citado el 29 de julio de 2023];2014:832029. Disponible en: <http://dx.doi.org/10.1155/2014/832029>
6. Manosuthi W, Wiboonthutikul S, Sungkanuparph S. Integrated therapy for HIV and tuberculosis. *AIDS Res Ther* [Internet]. 2016;13(1). Disponible en: <http://dx.doi.org/10.1186/s12981-016-0106-y>
7. Palanisamy AP, Samuel S, Vadivel S, Kothandapani S. Isolated tuberculous lymphadenitis presenting as bilateral buboes. *Indian J Sex Transm Dis AIDS* [Internet]. 2015 [citado el 29 de julio de 2023];36(1):80-2. Disponible en: <http://dx.doi.org/10.4103/0253-7184.156739>
8. José Francisco García-Rodríguez, Hortensia Álvarez-Díaz, María Virginia Lorenzo-García, Ana Mariño-Callejo, Álvaro Fernández-Rial, Pascual Sesma-Sánchez, Extrapulmonary tuberculosis: epidemiology and risk factors, *Enfermedades Infecciosas y Microbiología Clínica*, Volume 29, Issue 7, 2011, Pages 502-509, ISSN 0213-005X. Disponible en: <https://doi.org/10.1016/j.eimc.2011.03.005>.
9. Julià González-Martín, José María García-García, Luis Anibarro, Rafael Vidal, Jaime Esteban, Rafael Blanquer, Santiago Moreno, Juan Ruiz-Manzano, Documento de consenso sobre diagnóstico, tratamiento y prevención de la tuberculosis, *Enfermedades Infecciosas y Microbiología Clínica*, Volume 28, Issue 5, 2010, Pages 297.e1-297.e20, ISSN 0213-005X. Disponible en: <https://doi.org/10.1016/j.eimc.2010.02.006>.
10. Asghar MU, Mehta SS, Cheema HA, Patti R, Pascal W. Sputum smear and culture-negative tuberculosis with associated pleural effusion: A diagnostic challenge. *Cureus* [Internet]. 2018 [citado el 29 de julio de 2023];10(10):e3513. Disponible en: <http://dx.doi.org/10.7759/cureus.3513>
11. Thakkar K, Ghaisas SM, Singh M. Lymphadenopathy: Differentiation between tuberculosis and other non-tuberculosis causes like follicular lymphoma. *Front Public Health* [Internet]. 2016 [citado el 29 de julio de 2023];4:31. Disponible en: <http://dx.doi.org/10.3389/fpubh.2016.00031>
12. Horie M, Tarui M, Kashizaki F, Kawashima M, Suzuki J, Shimada M, et al. A case of tuberculosis with multiple lung nodules, abdominal lymphadenopathy, and splenomegaly. *Kekkaku* [Internet]. 2009 [citado el 29 de julio de 2023];84(10):675-9. Disponible en: <https://pubmed.ncbi.nlm.nih.gov/19928550/>
13. Benjelloun A, Darouassi Y, Zakaria Y, Bouchentouf R, Errami N. Lymph nodes tuberculosis: a retrospective study on clinical and therapeutic features. *Pan Afr Med J* [Internet]. 2015 [citado el 29 de julio de 2023];20:65. Disponible en: <http://dx.doi.org/10.11604/pamj.2015.20.65.5782>
14. Singh P, Kanade S, Nataraj G. Performance of loop-mediated isothermal amplification assay for diagnosis of extrapulmonary tuberculosis and antituberculosis treatment initiation. *Int J Mycobacteriol* [Internet]. 2021 [citado el 29 de julio de 2023];10(4):373-8. Disponible en: <https://pubmed.ncbi.nlm.nih.gov/34916454/>
15. Tadesse M, Abebe G, Abdissa K, Aragaw D, Abdella K, Bekele A, et al. GeneXpert MTB/RIF assay for the diagnosis of tuberculous lymphadenitis on concentrated fine needle aspirates in high tuberculosis burden settings. *PLoS One* [Internet]. 2015 [citado el 29 de julio de 2023];10(9):e0137471. Disponible en: <http://dx.doi.org/10.1371/journal.pone.0137471>