

Paradoxical Tuberculosis Immune Reconstitution Inflammatory Syndrome Complicated by Large Bilateral Psoas Abscess: A Case Report

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Adriam M. Castilla-Encinas, MD¹ , Valeria Rocio Soto Salas, MD², Hugo Alvarez-Delgado, MD¹, Jhon E. Bocanegra-Becerra, MD³, and Paola L. Rondan, MD⁴

Abstract

Immune reconstitution inflammatory syndrome is a common manifestation in human immunodeficiency virus (HIV)-positive patients infected with tuberculosis (TB). One of the unusual complications of this condition is the development of psoas abscess. We describe a case of immune reconstitution inflammatory syndrome (IRIS) in a patient with disseminated TB under treatment, HIV-positive with a low CD4 cell count, complicated by bilateral psoas abscess. Our patient presented with fever, abdominal pain, and lymphadenopathy, typical symptoms of TB-IRIS. Diagnosis was confirmed by surgical drainage of the abscess of the right iliac psoas muscle with detection of acid-fast bacteria on Ziehl-Neelsen staining and negative culture of purulent discharge. Treatment with prednisone was started in addition to continuation of antituberculosis therapy and antiretroviral therapy.

Keywords

immune reconstitution inflammatory syndrome, tuberculosis, psoas abscess, HIV, antiretroviral therapy

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Introduction

Paradoxical immune reconstitution inflammatory syndrome associated with tuberculosis (Paradoxical TB-IRIS) consists of worsening TB symptoms and signs despite a favorable response to antituberculosis therapy (ATT) prior to antiretroviral therapy (ART). Paradoxical TB-IRIS usually presents in the first 1 to 8 weeks after ART initiation; however, in this case, we see a late presentation after 3 months.¹⁻⁴ Development of bilateral psoas abscess in our patient is a rare manifestation of paradoxical TB-IRIS with few reported cases.⁵

Case Presentation

A 33-year-old male on ATT and antiretroviral therapy presented to the emergency department at Hospital Nacional Dos de Mayo, in Peru, with a 2 week history of nonradiating stabbing pain, in the right hip greater than the left, that limited walking, after a low-impact bicycle accident; and fever.

Four months prior to admission, he presented with respiratory symptoms and was found to have a CD4 count of 96 cells/mm³ and HIV viral load of 2.878.385 million copies/mL of plasma. He was diagnosed with sensitive disseminated tuberculosis (positive Ogawa culture for *Mycobacterium tuberculosis* in feces and sputum samples with rifampicin and isoniazid sensitivity on the line probe assay Genotype

¹ Sociedad Científica de San Fernando, Universidad Nacional Mayor de San Marcos, Lima, Peru

² Universidad Nacional Mayor de San Marcos, Lima, Peru

³ Academic Department of Surgery, School of Medicine, Universidad Peruana Cayetano Heredia, Lima, Peru

⁴ Universidad Nacional Mayor de San Marcos, Instituto de Medicina Tropical Daniel A. Carrion, Lima, Peru

Corresponding Author:

Adriam M. Castilla-Encinas, Sociedad Científica de San Fernando, Universidad Nacional Mayor de San Marcos, Lima, Peru 506.

Email: adriam1castilla@gmail.com



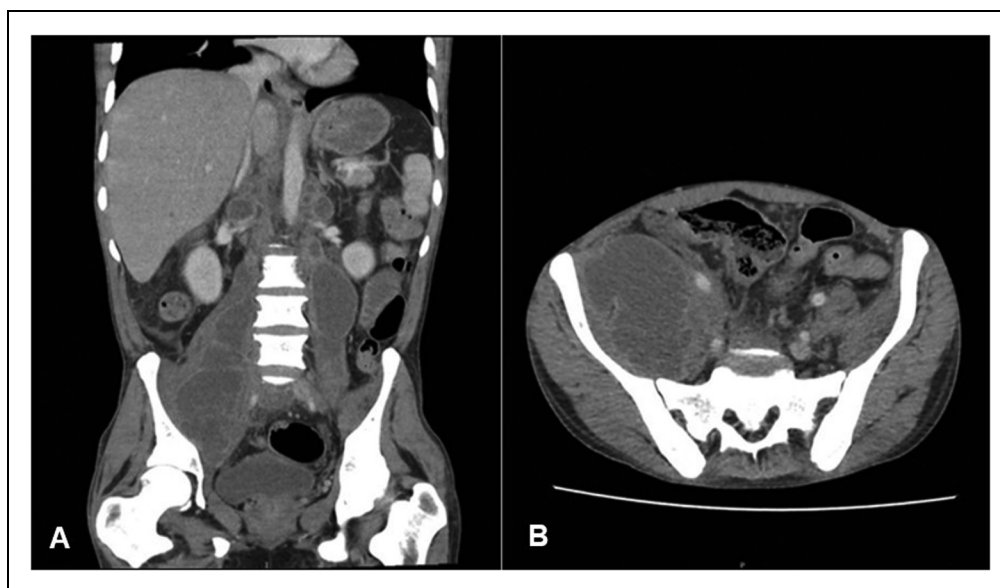


Figure 1. Abdominal computed tomography with contrast in the coronal (A) and axial (B) planes. Collections in both psoas muscles, predominantly in the right psoas with an extension of 209×75×72 mm and the left collection measured 111×37×38 mm.

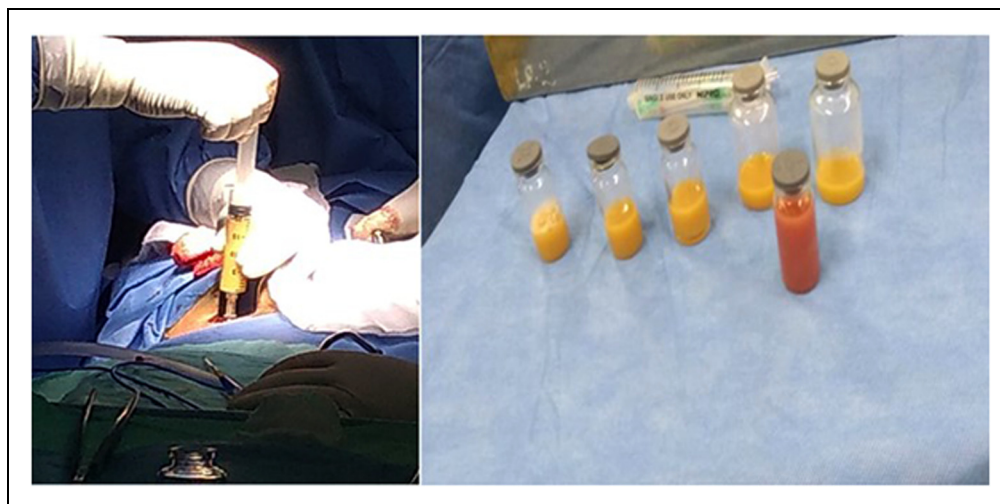


Figure 2. Right psoas abscess drainage. Purulent discharge 350cc.

treatment is the use of corticosteroids, and it is the only therapeutic intervention so far supported by a randomized clinical trial.⁸ The patient was prescribed prednisone.

Antiretroviral therapy should not be interrupted in patients with IRIS; except in life-threatening cases.^{1,4} Additionally, the risks of discontinuing ART include the acquisition of new opportunistic infections, recurrence of IRIS when treatment is restarted later, and the emergence of ART resistance.^{3,4}

Our patient had disseminated tuberculosis under treatment. Positive smears for acid-fast bacteria on Ziehl-Neelsen stain, negative culture on Ogawa medium and improvement of the patient without the need for change of TB treatment regimen or treatment for other mycobacteria suggests the presence of nonviable

M. tuberculosis in the smears and efficacy of anti-TB treatment. Also, it is important to remember that despite the severe inflammation typical of TB-IRIS, the paucity or absence of viable *M. tuberculosis* is characteristic of this presentation.^{3,7} This explains the cause of the bilateral psoas abscess in our patient.

On the other hand, psoas muscle is very prone to primary and secondary infections due to its large blood and lymphatic supply and its proximity to retroperitoneal structures. Treatment of psoas abscesses includes intravenous antibiotics and percutaneous or open surgical drainage, depending on the patient's condition and available materials.⁹ In this case, surgical drainage was performed due to the retroperitoneal location of the right psoas abscess.

The presence of an inflammatory condition after recent initiation of antiretroviral therapy and worsening of previously diagnosed and on treatment TB (psoas abscess with acid-fast bacteria); the lack of another infectious process or undiagnosed multidrug-resistant TB, proven by negative blood cultures and negative culture on Ogawa medium; and the absence of conditions that reduce the efficacy of anti-TB drugs in the patient (poor compliance, drug malabsorption, and drugs side effects) confirm the diagnosis of paradoxical TB-IRIS.¹⁻⁷

Conclusion

We describe the first reported case of psoas abscess as a complication of TB-IRIS in Peru. The case described demonstrates the need for careful management and ongoing assessment of patients receiving ART, especially if an opportunistic infection such as *M. tuberculosis* is also present. This case reinforces the use of corticosteroids as first-line treatment for severe TB-IRIS.

Authors' Contribution

AMC-E was involved in writing—review & editing and visualization; VRSS in writing—original draft; HA-D and JEB-B in writing—review & editing; and PLR in writing—original draft, writing—review & editing, and supervision.

Declaration of Conflicting Interests

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Ethical Approval and Informed Consent

Our institution does not require ethical approval for reporting individual cases or case series. Verbal informed consent was obtained from the patient for the publication of this case report.

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ORCID iD

Adriam M. Castilla-Encinas  <https://orcid.org/0009-0006-2837-6423>

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