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Case Report

Juvenile Disseminated Paracoccidioidomycosis in an Immunocompetent Young Patient: A Case Report

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Abstract: Paracoccidioidomycosis (PCM) is a systemic fungal infection endemic to Latin America, caused by thermally dimorphic fungi of the Paracoccidioides genus. The juvenile form, although less common, presents a diagnostic challenge due to its nonspecific symptoms and frequent absence of pulmonary involvement. We report the case of a 20-year-old male from an endemic region in Brazil who presented with persistent afternoon fever, significant cervical lymphadenopathy, and weight loss. Initial investigations raised suspicion of lymphoma, but histopathological examination of a cervical lymph node biopsy revealed chronic granulomatous lymphadenitis with fungal structures consistent with PCM, confirmed by special stains (Grocott, PAS, and HE). The patient was treated with oral itraconazole 200 mg/day, with favorable clinical response after four weeks. This case underscores the importance of including PCM in the differential diagnosis of prolonged febrile syndromes with lymphadenopathy in endemic areas, highlighting the value of histopathological analysis and early antifungal therapy.

Keywords: Paracoccidioidomycosis; Juvenile form; Cervical lymphadenopathy; Itraconazole; Granulomatous lymphadenitis.

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1. Introduction

Paracoccidioidomycosis (PCM) is a systemic fungal infection caused by thermally dimorphic fungi of the Paracoccidioides genus, endemic to Latin America—particularly Brazil—which accounts for the majority of reported cases worldwide [1,2]. The disease presents in two main clinical forms: the chronic (adult-type), more prevalent in males between 30 and 60 years of age; and the acute-subacute (juvenile-type), which primarily affects children and young adults, accounting for approximately 5–25% of all cases [3,4]. The acute form is characterized by rapid progression and prominent involvement of the mononuclear phagocytic system, often accompanied by fever, weight loss, generalized lymphadenopathy, mucocutaneous lesions (especially oral), respiratory symptoms, and hepatosplenomegaly [5]. Due to overlapping clinical and radiological features, it can mimic neoplastic and granulomatous diseases such as lymphomas, tuberculosis, and histoplasmosis, representing a diagnostic challenge [6,7].

Although rare in pediatric populations, several case reports highlight the growing recognition of juvenile-type PCM in endemic regions [8–10]. Diagnosis is based on clinical

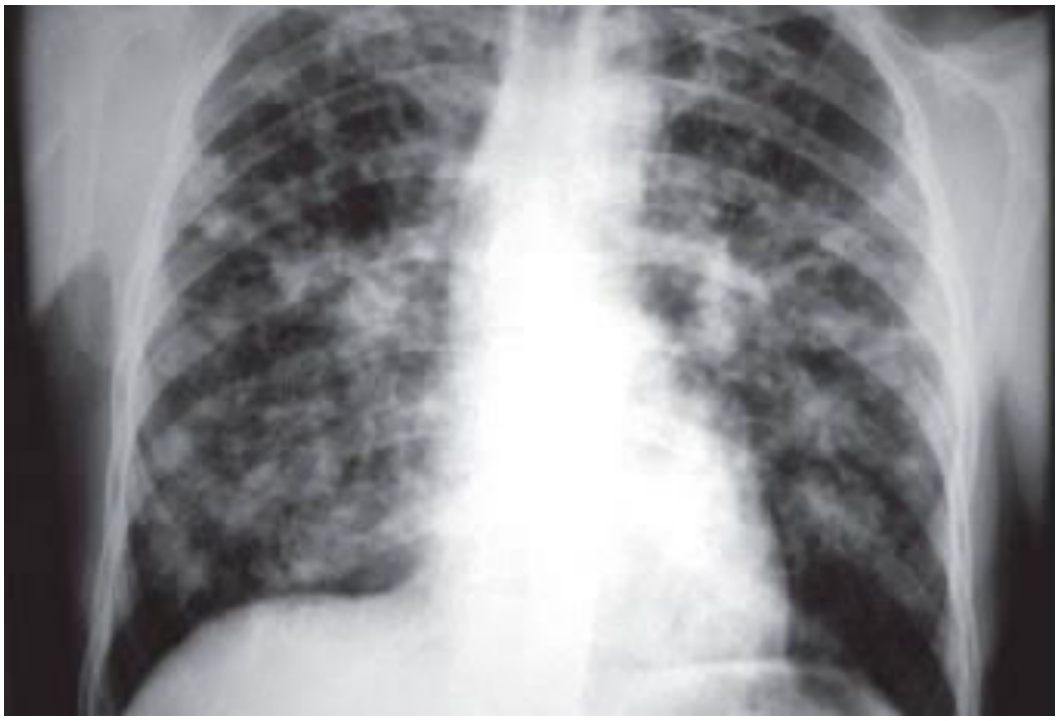
suspicion, serological tests, and histopathological identification of typical yeast forms using special stains such as Grocott-Gomori and PAS [11,12]. Gastrointestinal tract involvement, although uncommon, has also been described, particularly affecting the upper digestive tract [7]. Given the nonspecific initial presentation and the potential for diagnostic errors, especially in non-specialized settings, case reports remain essential to emphasize clinical heterogeneity and reinforce the need for early recognition and treatment of PCM in endemic areas [13,14].

2. Case Report

A 20-year-old male patient, born and residing in Itumbiara, Goiás — a region recognized as endemic for paracoccidioidomycosis (PCM) — sought medical attention with persistent afternoon fever, cervical lymphadenopathy, and unintentional weight loss of approximately 8 kg over the past eight weeks [15,16]. He reported frequent contact with soil and rural environments during childhood, having worked informally in local farming until the age of 16 [17]. During the initial investigation, the presence of generalized lymphadenomegaly and prolonged fever led to a diagnostic hypothesis of lymphoma [18]. Laboratory, serological, and imaging tests were requested.

The laboratory tests indicated the following results: Hemoglobin level was 8.2 g/dL, classified as normocytic. Leukocyte count reached 21,100/mm^3, showing neutrophilia. Platelet count measured at 486,000/mm^3. C-reactive protein (CRP) was elevated at 48 mg/L. Additionally, PCM serology tested positive with a high antibody titer. Chest X-ray (Figure 1) and abdominal ultrasound did not reveal any suggestive changes of pulmonary or hepatosplenic involvement [20,21].

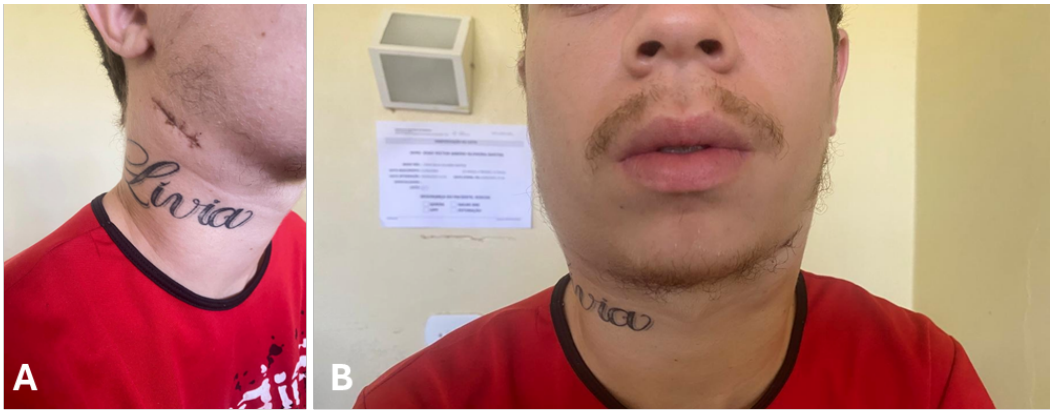
Figure 1. Radiological image showing absence of visible pulmonary or abdominal involvement, reinforcing the diagnosis of disseminated lymphonodal form.



The differential diagnoses were systematically ruled out based on laboratory and imaging findings. Tuberculosis was excluded due to a negative bacilloscopy and non-reactive PPD. Histoplasmosis was dismissed after a negative serology result. Lymphoma was ruled out as there were no blasts or atypical lymphocytes in the complete blood count, and imaging exams did not reveal compatible findings. An excisional biopsy of the left

cervical lymph node was performed. The histopathological report revealed chronic granulomatous lymphadenitis associated with paracoccidioidomycosis, with no signs of malignancy. The report described a lymphohistiocytic infiltrate with Langhans-type giant cells and leveduriform structures with radial budding, confirmed by special stains (HE, Grocott, and PAS) [23,24]. Cervical lymphadenopathy was evident on inspection, and the biopsy site showed a discreet scar after the procedure.

Figure 2. A. Enlarged cervical lymph node chain, with palpable nodes prior to excisional biopsy. The image shows a visible scar on the left side of the patient's neck, where the biopsy for paracoccidioidomycosis diagnosis was performed. The scar corresponds to the intervention for lymph node removal and subsequent histopathological examination. B. Appearance of the left cervical region after removal of the lymph node, where the histopathological examination was performed. Volume increase in cervical lymph nodes is observed, a common feature in the lymphatic dissemination of PCM. This finding prompted further diagnostic investigation.



Outpatient treatment with itraconazole 200 mg/day was initiated, following national protocols [25,26]. The decision was based on the absence of visceral involvement and the patient's good general condition. After four weeks, regression of lymphadenopathy and progressive weight recovery were observed. The therapeutic plan was established for 12 months, with regular outpatient follow-up. The patient demonstrated adequate adherence, with no complications, and showed satisfactory clinical progress up to the date of submission.

3. Discussion

Paracoccidioidomycosis remains a significant public health concern in Latin America, particularly in Brazil, where it is considered a neglected endemic disease [1, 2]. The acute-subacute (juvenile-type) form, although less frequent than the chronic adult form, poses greater diagnostic difficulty due to its nonspecific systemic presentation and absence of pulmonary involvement [3, 5]. The case described exemplifies the lymphonodal variant of the juvenile form, which may clinically mimic lymphoproliferative disorders, especially when associated with prolonged fever and significant weight loss [6–8]. There are also reports of disseminated forms with gastrointestinal and mucocutaneous involvement, reinforcing the clinical polymorphism of PCM [8]. Such features often lead to extensive diagnostic investigation, frequently delaying appropriate treatment.

Histopathological confirmation remains the diagnostic gold standard. In this case, the identification of yeast-like structures with multiple budding, along with Langhans-type multinucleated giant cells, was crucial to establish the diagnosis [9, 11]. The use of special stains such as PAS and Grocott facilitates detection of the fungus and differentiation from other granulomatous conditions [12, 24]. Therapeutic success depends on early diagnosis and adherence to prolonged antifungal treatment. Additionally, rare cases in

immunodeficient patients have been reported, including individuals with IL-12/IL-23 receptor deficiency, suggesting a complex host-pathogen interaction [9]. Itraconazole remains the first-line drug in cases without central nervous system involvement, as supported by recent clinical protocols and published case series [10,13,25,26].

This case reinforces the importance of including PCM in the differential diagnosis of prolonged febrile syndromes with lymphadenopathy in endemic areas. Awareness campaigns and continuous medical education may contribute to improved recognition of juvenile PCM and reduce underdiagnosis [4,14].

4. Conclusion

This case highlights the diagnostic challenges of juvenile-type paracoccidioidomycosis, particularly in endemic regions where the disease can mimic hematologic malignancies. The absence of pulmonary involvement, combined with systemic manifestations such as lymphadenopathy and weight loss, often delays proper identification and management. Histopathological confirmation and prompt antifungal therapy are key to achieving favorable outcomes. Therefore, early clinical suspicion, especially in young patients with prolonged febrile syndrome and exposure history, is essential to avoid misdiagnosis and ensure timely intervention.

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Conflicts of Interest: None.

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