

Paracoccidioidomycosis manifested by sarcoidosis-like cutaneous lesions and caused by *Paracoccidioides brasiliensis sensu stricto* (S1a)*

Sílvia Alencar Marques¹, Marília Formentini Scotton Jorge², Marluce Francisca Hrycyk³, Sandra de Moraes Gimenes Bosco⁴

DOI: <http://dx.doi.org/10.1590/abd1806-4841.20188293>

Abstract: Molecular studies have shown more than one species of the genus *Paracoccidioides* to be the causal agent of paracoccidioidomycosis. Efforts have been made to correlate the identified species with epidemiological and clinical data of patients, aiming to determine the real meaning and impact of new species. Bearing this objective in mind, the authors report a clinical case of paracoccidioidomycosis, from São Paulo state, Brazil, that manifested as uncommon sarcoid-like cutaneous lesions and was caused by *Paracoccidioides brasiliensis sensu stricto* (S1a). The patient was treated with itraconazole 200mg/day for 12 months, with complete clinical remission.

Keywords: Paracoccidioidomycosis; Sarcoidosis; Skin diseases; Skin manifestations

Paracoccidioidomycosis (PCM) is a systemic mycosis caused by thermally dimorphic fungi of the genus *Paracoccidioides*. Recently, molecular studies have shown that *P. brasiliensis* (S1a, S1b) and related species *P. americana* (S2), *P. restrepiensis* (S3), *P. venezuelensis* (S4) and *P. lutzii* are possible etiological agents.¹ Airborne infections occur mainly in rural areas, and the primary complex develops in the lungs.² Clinical manifestation in adult patients typically includes oral, cutaneous and pulmonary involvement. Cutaneous lesions are reported to occur in 30% to 61.2% of studied patients.³ Most frequently, skin lesions result from hematogenous spread of fungi. The most common forms of lesion are ulcerative and ulcer-

ous-vegetative, reported in up to 42.8% of cases in one series.³ Conversely, an infiltrative pattern similar to the plaque-type lesion of cutaneous sarcoidosis is very uncommon.⁴ The authors report a male patient with an unusual and extensive cutaneous involvement of a sarcoid-like skin lesion caused by *P. brasiliensis sensu stricto* (S1a).⁵

A 53-year-old male patient, from a rural area in the municipality of São Manuel (SP), was referred for evaluation of a facial skin lesion that had evolved over one year. Fever, weight loss, pulmonary complaints and comorbidities were denied, as was alcohol and tobacco use. On examination, we observed an infiltrative sarcoid-like skin lesion on the face (Figures 1 and 2). With the hy-

Received 14 March 2018.

Accepted 06 April 2018.

* Work conducted at the Department of Dermatology and Radiotherapy, Faculdade de Medicina de Botucatu, Universidade Estadual Paulista, Botucatu (SP), Brazil.

Financial support: None.

Conflict of interest: None.

¹ Department of Dermatology and Radiotherapy, Faculdade de Medicina de Botucatu, Universidade Estadual Paulista, Botucatu (SP), Brazil.

² Dermatology Service, Hospital das Clínicas, Faculdade de Medicina de Botucatu, Universidade Estadual Paulista, Botucatu (SP), Brazil.

³ Laboratory of Microbiology and Immunology, Faculdade de Ciências Biológicas e Agrárias, Universidade do Estado de Mato Grosso, Alta Floresta (MT), Brazil.

⁴ Laboratory of Medical Mycology, Departamento de Microbiologia e Imunologia, Instituto de Biotecnologia de Botucatu, Universidade Estadual Paulista, Botucatu (SP), Brazil.

MAILING ADDRESS:

Sílvia Alencar Marques

E-mail: smarques@fmb.unesp.br

©2018 by Anais Brasileiros de Dermatologia





FIGURE 1: Paracoccidioidomycosis: erythematoviolaceous, infiltrated, sarcoidosis-like lesions on the face

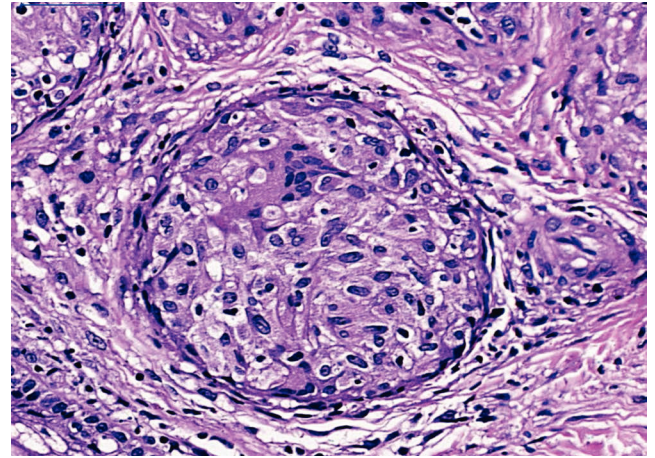


FIGURE 3: Paracoccidioidomycosis: well-formed epithelioid granuloma with giant cell and no visible fungus. Hematoxylin & eosin, x100



FIGURE 2: Paracoccidioidomycosis: detail of infiltrated lesion and shallow ulcer

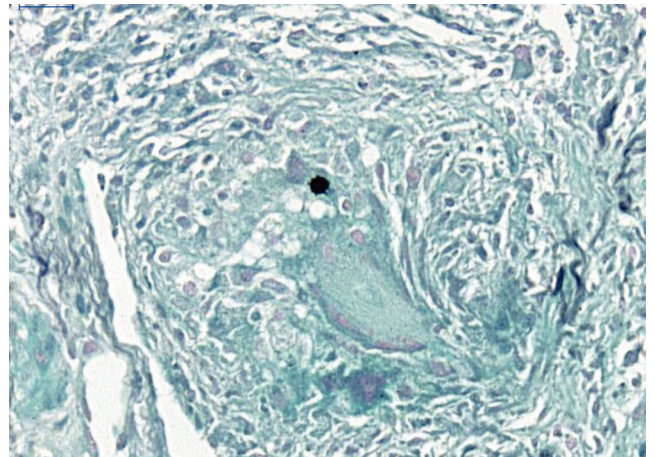


FIGURE 4: Paracoccidioidomycosis: isolated fungus cell with discrete multiple sporulation amid epithelioid granuloma. Grocott-Gomori, x100





pothesis of B-cell lymphoma or PCM, the lesion was submitted to a punch biopsy. The histopathology revealed a dense, granulomatous inflammatory dermal infiltrate of histiocytes and multinucleated giant cells with rare fungal cells, viewed in greater specificity with silver staining (Figures 3 and 4). Culture from a biopsy fragment incubated on Mycosel® at 35°C showed yeast cells diagnostic of *Paracoccidioides* genus. The isolate was molecularly characterized as *P. brasiliensis sensu stricto* (S1a) by sequencing ITS rDNA and gp43 exon 2 loci.⁵ PCR-RFLP (Restriction Fragment Length Polymorphism) of *tub1* gene was also carried out to enable differentiation among *Paracoccidioides* spp.^{5,6} A thin-slice computed tomography of the thorax and abdomen showed no abnormalities. Laboratory data were within normal limits, with exception of ESR of 20 mm/h. Antibody screens for HIV, HBV, HCV and *Paracoccidioides* spp. (IDD) tested negative. Itraconazole 200 mg/day was used for 12 months, with complete clinical remission.

In PCM, sarcoid-like lesion is an expression of equilibrium between infectious agent and host defense. The histological presentation comprises a well-developed epithelioid granuloma and multinucleated giant cells with scarce fungal elements, posing a diagnostic challenge even when using specific stain.⁷ In such circumstances, cases can be clinically and histologically misinterpreted as leprosy or another infectious disease, or even as non-infectious granulomatous dermatosis.⁷ Another unusual aspect of this case was the apparent absence of pulmonary involvement, which is the rule in adult male individuals. Itraconazole has been effective in PCM, as observed in this patient.⁸ Efforts have been made in every case, using molecular tools, to identify the correct species of genus *Paracoccidioides* and to correlate it with geographical origin, clinical aspects and response to treatment, to determine the real meaning and impact of the new species.⁹ □

REFERENCES

1. Turissini DA, Gomez OM, Teixeira MM, McEwen JG, Matute DR. Species boundaries in the human pathogen *Paracoccidioides*. *Fungal Genet Biol*. 2017;106:9-25.
2. Marques SA. Paracoccidioidomycosis: epidemiological, clinical, diagnostic and treatment up dating. *An Bras Dermatol*. 2013;88:700-11.
3. Marques SA, Cortez DB, Lastoria JC, Camargo RMP, Marques MEA. Paracoccidioidomycosis: frequency, morphology, and pathogenesis of tegumentary lesions. *An Bras Dermatol*. 2007;82:411-7.
4. Abreu MAMM, Lastória JC, Mattos ALA, Alchorne MMA. Paracoccidioidomycosis with sarcoid-like lesions: a diagnostic challenge. *Rev Soc Bras Med Trop*. 2017;50:273-6.
5. Hrycyk MF, Garcia Garces H, Bosco SMG, de Oliveira SL, Marques SA, Bagagli E. Ecology of *Paracoccidioides brasiliensis*, *P. lutzii* and related species: infection in armadillos, soil occurrence and mycological aspects. *Med Mycol*. 2018; Epub ahead of print.
6. Roberto TN, Rodrigues AM, Hahn RC, de Camargo ZP. Identifying *Paracoccidioides* phylogenetic species by PCR-RFLP of the alpha-tubulin gene. *Med Mycol*. 2016;54:240-7.
7. Marques SA, Lastória JC, Putinatti MSMA, Camargo RMP, Marques MEA. Paracoccidioidomycosis: infiltrated, sarcoid-like cutaneous lesions misinterpreted as tuberculoid leprosy. *Rev Inst Med Trop São Paulo*. 2008;50:47-50.
8. Shikanai-Yasuda MA, Mendes RP, Colombo AL, Queiroz-Telles F, Kono ASG, Paniago AMM, et al. Brazilian guidelines for the clinical management of paracoccidioidomycosis. *Rev Soc Bras Med Trop*. 2017;50:715-40.
9. Munóz JF, Farrer RA, Desjardins CA, Gallo JE, Sykes S, Sakthikumar S, et al. Genome Diversity, Recombination, and Virulence across the Major Lineages of *Paracoccidioides*. *mSphere*. 2016;1. pii: e00213-16.

AUTHORS' CONTRIBUTIONS

Silvio Alencar Marques	 ORCID 0000-0002-5512-4700
Approval of the final version of the manuscript, Conception and planning of the study, Elaboration and writing of the manuscript, Critical review of the literature, Critical review of the manuscript	
Marilia Formentini Scotton Jorge	 ORCID 0000-0003-1667-5160
Intellectual participation in propaedeutic and/or therapeutic conduct of the cases studied, Critical review of the literature, Critical review of the manuscript	
Marluce Francisca Hrycyk	 ORCID 0000-0003-3485-6897
Approval of the final version of the manuscript, Obtaining, analyzing and interpreting the data	
Sandra de Moraes Gimenes Bosco	 ORCID 0000-0002-6363-3740
Obtaining, analyzing and interpreting the data, Critical review of the literature, Critical review of the manuscript	

How to cite this article: Marques SA, Jorge MFS, Hrycyk MF, Bosco SMG. Paracoccidioidomycosis manifested by sarcoidosis-like cutaneous lesions and caused by *Paracoccidioides brasiliensis sensu stricto* (S1a). *An Bras Dermatol*. 2018;93(6):902-4.