A case report of imported paracoccidioidomycosis

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Abstract

Paracoccidioidomycosis (PCM) is an important endemic mycosis in South America. In Europe the disease is very rare and only found in travellers from Latin America.

We report a case of a 24 year old man, Brazilian born, living in Portugal for 7 years (during this period of time the patient did not return to Brazil), otherwise healthy, admitted to our Hospital with low grade fever, weight loss (about 5Kg – 11 pounds), nonspecific epigastric pain, anorexia, fatigue, peripheral lymphadenopathy and papule-nodular skin lesions with central ulceration involving the head, face and trunk; laboratory results revealed hypereosinophilia.

A surgical lymph node and cutaneous biopsy was performed. The histopathology result was consistent with PCM.

Treatment with antifungal therapy was started immediately with clinical improvement.

Key words: Paracoccidioidomycosis; endemic mycosis.

Introduction

Paracoccidioidomycosis (PCM) is an important endemic mycosis in South America, caused by a dimorphic fungus, *Paracoccidioides Brasiliensis*. It is a chronic disease, affecting mainly adult individuals with an average age of 44 years old. In Europe the disease is very rare, but it should be taken into account in patients with a suspicion of fungal infections and with previous exposure to an endemic area to this disease. Only a small percentage of individuals progresses to a clinic PCM, due to the host genetic intervariability. The authors present a PCM case diagnosed in a young Brazilian man, 24 years old, previously healthy, living in Portugal for 7 years.

Clinical case

Young Brazilian man, 24 years old, civil construction worker, living in Portugal for 7 years (period without returning to Brazil), previously healthy, admitted to our hospital with a progressive worsening clinical condition evolving for about a month, of non quantified fever, weight loss (about 5 kg – 11 pounds), peripheral lymphadenopathies and papulonodular cutaneous lesions, with central ulceration involving the head, face and trunk.

The objective exam, presented fever (37.5ºC – 99.5 F), heart rate 90 bpm and a blood pressure of 130/90 de mmHg. Apart of the peripheral lymphadenopathies and the cutaneous lesions above mentioned, he presented hepatosplenomegaly. No other changes worth noting in the physical exam.

Analytically, hemoglobin 14.3 g/dL, leukocytosis 22400 µl, eosinophilia 18% (4032 µl), 448000 µl platelets, CPR 10 mg/dl, ESR 51mm, negative VDRL, negative viral serology (HIV1,2; HVB; HVC), negative coprocultures (researching eggs, cysts and parasites). Liver function tests showed AST 90 UI/L, G-GT 201 UI/L and Alkaline Phosphatase 326 UI/L. Both the electrocardiogram as the thorax X Ray showed no alterations. Bone marrow study was inconclusive. Upper gastrointestinal endoscopy showed gastritis. Both the abdominal CAT scan and the ultrasound, apart of the hepatosplenomegaly showed multiple adenopathies around the hepatic hilar area, celiac trunk and mesenteric vessels. The histological exam of the cutaneous and lymphatic ganglionar biopsy has shown round or oval cell emerging from it, consistent with a *Paracoccidioides Brasiliensis* diagnosis *(Fig.1 and 2)*.

The patient received itraconazole 200 mg PO day, for 2 months, followed by 100 mg per day in the subsequent 8 months. No complications were recorded with therapy, and symptoms have gradually improved (progressive weight gain, appetite

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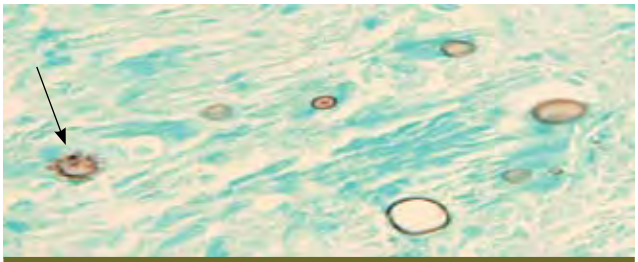
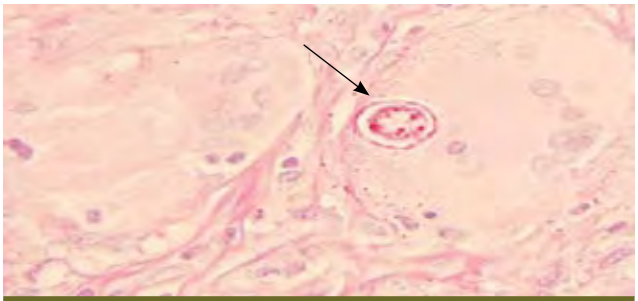


Lymph node biopsy (silver staining) showing cells of *Paracoccidioides Brasiliensis*

FIG. 1



Lymph node biopsy (PAS staining) showing cells of *Paracoccidioides Brasiliensis.*

FIG. 2

improving, cutaneous lesions healed, adenopathies disappearing and a gradual eosinophilia decrease on the peripheral blood).

Discussion

Paracoccidioidomycosis (PCM) is a systemic granulomatous disease caused by a dimorphic fungus (*Paracoccidioides Brasiliensis*) involving mainly the lungs, the mononuclear phagocytic system, mucosa membranes and adrenal glands. The illness was initially described in 1908 by Lutz a Brazilian scientist. It is the most common endemic mycosis in Latin America. Prevalence ranges from 6 to 60 percent among rural and urban populations in endemic and non-endemic areas.[1] It occurs mainly those aged 20 to 50 years old. The ratio is 10 or more men for each woman of adult age (10:1); similar distribution between boys and girls in pre-puberty. Interpersonal transmission was not demonstrated.[1] Geographical regions where PCM is usually found are the wet areas where the soil is often acid and the temperature ranges from 15 to 30°C [59-86F]. It was isolated from the soil and also from animals as armadillos, bats, dogs and penguins[1].

Several experimental and clinical-pathological studies have shown that the airways are the main entrance gate and the lung the preliminary infection site. Around 12 to 18 hours after exposure, yeastlike formula can be seen in the alveoli. There is an initial inflammatory response, mediated by polymorphonuclear cells, followed by the formation of a granuloma. The primary infectious complex is developed in the inoculation local and involves the surrounding lymphatic vessels and regional lymphatic nodes; afterwards it can occur the hematogenous dissemination to several organs and tissues. Lesions usually regress and fungi remain dormant, if the host immune response controls its proliferation. A fungus-host balanced relationship is associated to the absence of symptoms. In adulthood, previous quiescent lesions can be reactivated, mainly in the lungs, leading to an adult or chronic form of the disease. The characteristic lesion is a granuloma containing cells of *Paracoccidioides Brasiliensis*.

The clinical condition ranges from asymptomatic to a severe disseminated condition which may lead to death. The incubation period is unknown. Essentially, there are 2 types:[2]

Juvenile acute/sub-acute form Usually it affects patients under 30 years of age, with equal distribution between genders. Only 1 to 20% of patients fit this group. There a disease progression for a period over 3 months, characterized by a mononuclear phagocytic system. Fever and weight loss are common; multiple mucocutaneous lesions are frequent in some geographic areas.[3] Hepatosplenomegaly and small intestine involvement in about 50% of cases may happen. Transitory peripheral eosinophilia (up to 30.000/mm^3) has been described. Seldom has a lung and bone marrow compromise happened. The most common complications are lymphatic obstruction, intestinal malabsorption, or protein losing enteropathy.

Chronic form Occur in men between 30 and 50 years of age, working in farming areas. Man/woman ratio ranges from 10:1 to 25:1. The evolution is insidious and in many cases might be mild. The organ most often involved is the lung, followed by the skin and mucous membrane, namely pharynx, larynx and trachea. Patients might be asymptomatic or mention dyspnea, cough and seldom hemoptysis. Fever

is rare and the physical exam is often normal. The most common complications include pulmonary emphysema, fibrosis, respiratory failure and finally *cor pulmonale*. Around 30% of these patients may die of cardiorespiratory arrest.

PCM diagnosis can be made by demonstrating and recognizing its agent in histological preparation (direct method) or through indirect or serological techniques, as immunodiffusion with sensitivity and specificity reaching 95%.[4]

The clinically active disease can be treated with sulphamethoxazole-trimethoprim 2400-3200 mg day or itraconazole (200 mg day for 2 months, followed of 100 mg day in the remaining 8 months). The most serious cases of chronic or acute illness can be treated with Amphotericin B (0,5-1 mg/Kg/day or in alternating days).[5] Although this illness is easily controlled, in most cases, in Brazil, treatment drop out is the most frequent cause of therapeutic failure.[1]

This is a unique case, as although PCM is endemic in South America, it is rare in Europe,[6] specially in the acute or juvenile form (rare presentation of this disease) in an immunocompetent patient, living in Portugal for 7 consecutive years, without a history of return to endemic areas (the wide latency period of endemic mycoses, warns one to the need of a thorough clinical story, including not only recent trips but also the older ones) and has symptomatically improved with antifungal therapy. ■

Bibliografia

1. Marques AS. Paracoccidioidomycosis: Epidemiological, clinical and treatment up-date. An Bras Dermatol 2003; 78(2): 135-150.

2. Franco M, Montenegro MR et al. Paracoccidioidomycosis: a recently proposed classification of its clinical forms. Rev Soc Bras Med Trop 1987; 20(2): 129-132.

3. Mayayo E, López-Aracil V et al. Report of an imported cutaneous disseminated case of Paracoccidioidomycosis. Rev Iberoam Micol 2007; 24(1): 44-46.

4. Valle ACF, Costa RLB, et al. Interpretation and clinical correlation of serologic tests in Paracoccidioidomycosis. Med Mycol 2001; 39(1): 373-377.

5. Visbal G, San-Blas G et al. Paracoccidioides Brasiliensis, Paracoccidioidomycosis, and antifungal antibiotics. Curr Drug Targets Infect Disord 2005; 5(3): 211-226.

6. Van Damme PA, Bierenbroodspot F et al. A case of imported Paracoccidioidomycosis: an awkward infection in the Netherlands. Med Mycol 2006; 44(1): 8-13.