The Brazilian radiological literature has recently highlighted the relevant role played by MRI in the improvement of the diagnosis of central nervous system conditions[1–5].

PRES is a clinical-radiological entity of varied etiology, generally occurring in the setting of severe arterial hypertension. In some cases, however, it may be associated with immunosuppressive therapy, and is rarely described in the literature after the use of immunoglobulin[6–12]. Its physiopathogenesis is characterized by the presence of endothelial lesion and dysfunction of cerebral autoregulation mechanisms, leading to hypoperfusion and vasogenic edema[7–12]. The clinical manifestations present acute/subacute onset characterized by headache, decreased level of consciousness, visual alterations, tonic-clonic seizures and focal neurological signs. The symptoms are progressive. Complete regression is achieved provided the syndrome is appropriately treated; otherwise irreversible damages may occur[6–11].

MRI findings are quite suggestive and characterized by hyperintense areas on T2-weighted and FLAIR sequences, in general affecting the white substance bilaterally and symmetrically, with predilection for the parieto-occipital region. It may also affect the frontal lobes, internal and external capsules, cerebellum and encephalic trunk[7–9]. At early stages of the condition, diffusion MRI does not demonstrate any abnormalities, but inappropriate management may result in irreversible damages presented as diffusion restriction corresponding to cytotoxic edema.

Recent studies by means of retrospective analysis, utilizing MRI and laboratory data, have demonstrated the association between PRES and albumin serum levels. There are evidences that significantly decreased albumin serum levels lead to a higher risk to develop vasogenic-type edema[12]. This is due to the fact that, in conditions with endothelial damages caused by inflammatory processes, the decrease in the colloidosmotic pressure, directly related to the albumin levels, may facilitate the development of vasogenic edema. Thus, the early administration of human serum albumin might prevent ischemic damages and reduce possible sequelae[12].

Finally, despite being rare after administration of immunoglobulin, PRES should be considered in cases where typical MRI findings are present. One should not wait until the onset of a hypertensive episode to take such a diagnostic possibility into consideration.

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Pulmonary paracoccidioidomycosis showing reversed halo sign with nodular/coarse contour

Paracoccidioidomicose pulmonar exibindo sinal do halo invertido com margens nodulares/rugosas

Dear Editor,

A 63-year-old man, living and working in urban area since his childhood, and smoking for 30 years. In 2012 he underwent investigation for chronic cough. At that same time, he reported gingival lesion. For a long time, he had the habit of weekly visiting rural areas for leisure and amateur fishing. The patient denied history of fever, weight loss or comorbidities. Blood counts since 2009 without any abnormalities.

Chest computed tomography (CT) in December 30, 2013 showed focal pulmonary ground glass opacities predominantly in the middle fields, some of them completely or partially surrounded by a thin and coarse consolidation ring representing the "reversed halo sign". Other findings include some areas with subtle interlobular septa thickening (Figures 1A, 1B and 1C).

The gingival lesion, characterized by granular, erythematous ulceration with fine blood-red dots, compatible with a "mulberry-like" appearance, was biopsied.

Biopsy result: eosinophilic epithelial cells of the squamous and spinous layers, giant, "foreign-body" type cells containing isolated and clustered spherical fungi with double and birefringent membranes, in association with inflammatory cells. The cytological diagnosis confirmed the presence of *Paracoccidioides brasiliensis* (Figure 1D).

On February 2, 2015, post-itraconazol therapy chest CT demonstrated rare areas of hypoattenuation associated with fibrocicatricial septal thickening.

Paracoccidioidomycosis is the most common endemic systemic mycosis in the Latin America, caused by infection by inhalation of the dimorphic fungus *Paracoccidioides brasiliensis*[1–7], a pathogen that is found only in Colombia, Argentina, Venezuela and principally subtropical regions in Brazil[1,3,4,6]. The incidence is high in men, rural workers[1–7] aged between 30 and 60 years[1,2,6].

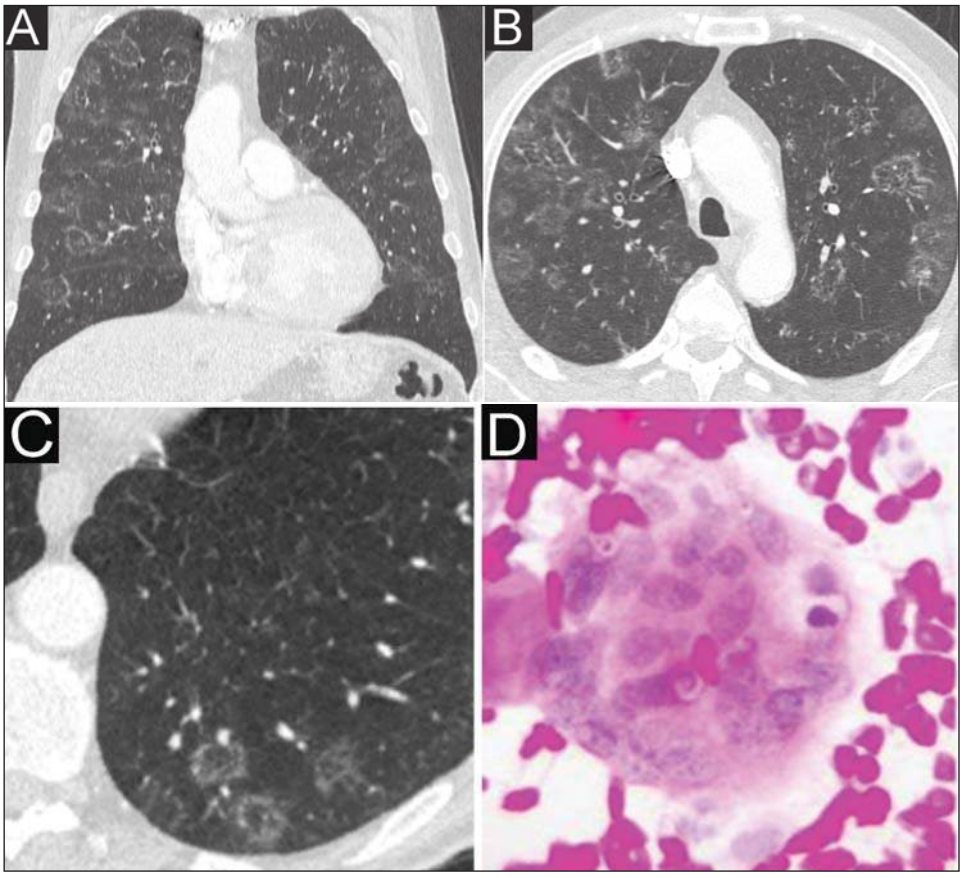

Figure 1. A,B,C: Computed tomography sections showing, principally, focal pulmonary ground glass opacities predominantly located in the middle fields, some of them either completely or partially surrounded by a thin and coarse consolidation ring representing the "reversed halo sign". One can also observe some areas with subtle interlobular septa thickening. **D:** Histological slide of the biopsied gingival lesion demonstrating eosinophilic epithelial cells of the squamous and spinous layers; giant, "foreign-body" type cells containing isolated and clustered spherical fungi with double and birefringent membranes in association with inflammatory cells. The cytological diagnosis confirmed the presence of *Paracoccidioides brasiliensis*.

There are two presentations, as follows:

Acute – It is a rare presentation, affecting both male and female children and young adults, manifesting especially with hepatosplenomegaly, lymph nodes enlargement, weight loss and fever. Presentations on mucosas and skin are rarely found[1–4,6].

Chronic – It represents 90–93% of cases, most of times in men aged above 30, affecting the lungs (90% of cases), with an insidious course after quiescent lesion reactivation in the lungs, progressing with pulmonary fibrotic lesions in 60% of the patients, with possibility of subsequent late respiratory failure. The course of the condition may be concomitant with involvement of the skin and mucosas (50–54% of cases), bones, adrenal glands, lymphatic system, digestive system and central nervous system; however, such sites are isolatedly affected in less than 10% of cases. Symptoms include chest pain; dyspnea, chronic cough either with or without expectoration; hemoptysis; weight loss and fever[1–4,6].

Diagnostic confirmation is made by means of histopathological individualization of the fungus, mainly in bronchoalveolar lavage material and biopsies[1,2].

Usually, in the chronic pulmonary presentation, CT findings tend to be symmetrical and bilateral, predominantly located in the lung bases, and include simple or complex patterns such as ground glass opacity (for example, "reversed halo sign"), consolidations, micronodules, nodules, masses, cavities, interlobular septa and peribronchovascular interstitium thickening, fibrotic lesions[1–6].

"Reversed halo sign" consists in a focal ground glass opacity either completely or partially involved by a rounded area of consolidation, and is found in 10% of cases of paracoccidioidomycosis[1,4,5,7]. Despite its nonspecificity, some recent studies have associated the "reversed halo sign" and a nodular/coarse ring with infectious and non-infectious granulomatous diseases[7,8].

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