



# Giant pulmonary cryptococcoma in immunocompetent patient

## Criptococoma pulmonar gigante en paciente inmunocompetente

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Dear editor

The invasive infections by *Cryptococcus neoformans* or *Cryptococcus gattii* more frequently involve the lungs and the central nervous system (CNS) with a high mortality rate; besides, the muscles, skeletal, skin and soft tissues, abdominal viscera, eyes, and prostate of both previous healthy and immunosuppressed individuals may be affected.<sup>1-5</sup> More often, *C. gattii* causes mass lesions in CNS, while *C. neoformans* does it in lungs.<sup>2</sup> Risk factors include HIV/AIDS, solid organ transplant, immunomodulatory agents, liver cirrhosis, chronic renal disease, diabetes mellitus, malignancy, and autoimmune disease.<sup>2</sup>

We read the case study by Mestre-Orozco L *et al.* of a 23-year-old man who had antecedent of close contact with reservoirs of *Cryptococcus* and developed headache, and convulsions four days after the second COVID-19 vaccine and underwent amphotericin B plus fluconazole without complete improvement.<sup>3</sup> The chest imaging evaluation showed a cryptococcoma (10 × 10 cm) in the lung left lower lobe that was operated on. The authors emphasized the lack of previous immunosuppression in the present case, which can raise the hypothesis of the role played by the vaccination anti-SARS-CoV-2. They also stressed the abrupt CNS manifestations shortly after the second dose of vaccine, and the voluminous dimension of the pulmonary lesion, which evolved undetected until then.<sup>3</sup>

In this setting, the aim is commenting on other occurrences of cryptococcosis with cryptococcoma among immunosuppressed as well as in immunocompetent individuals. O'Hern JA *et al.* reviewed data of 45 patients with infections by *C. gattii* (35 confirmed and 10 probable), with median age of 41 (5-60) years and median follow-up of five years.<sup>4</sup> They were treated by 166-715 days; 44% had both pulmonary and CNS lesions, 20% died up to one year after diagnosis, while 11% of survivors evolved with major sequels. Cryptococcomas measuring 6 (2.2-10) cm underwent surgery and 90% were cured; four cases of brain lesions developed immune reconstitution inflammatory syndrome (IRIS), characterized by intracranial hypertension and a cryptococcal antigen over than 1:512 and a schedule of corticosteroids from 63 days to over six months was utilized with success.<sup>4</sup> The authors highlighted that morbidity associated with *C. gattii* infection remains high, although early diagnosis and combined surgical and medical management can eradicate the disease, differing from the outcomes following therapy of *C. neoformans* infection.<sup>4</sup> Tucker M *et al.* also reported the development of IRIS in an immunocompetent male patient with rapidly enlarging cryptococcoma by *C. neoformans* that compressed vascular structures in spite of the four weeks of amphotericin B plus eight weeks of fluconazole.<sup>5</sup> The critical consequences of vascular encroachment were responsive to prednisone, and authors stressed that this was the first cryptococcal-IRIS in an immunocompetent host.<sup>5</sup> Finally, Brazilian authors described the findings of complete necropsy study of a 32-year-old man who died due to the acquired immunodeficiency syndrome (AIDS) and systemic mycobacteriosis, and presented with an unsuspected restrained prostatic cryptococcoma.<sup>1</sup> The prostatic lesion measured 2 cm in diameter with numerous forms of *C. neoformans*; worthy of note, this agent was not found in any other site, contrasting with mycobacteria miliary dissemination detected in the lungs, spleen, liver, adrenals, and lymph nodes.<sup>1</sup> The authors highlighted the

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isolated prostatic focus of cryptococcal infection coexistent with the scattered dissemination of mycobacteriosis in a severely immunosuppressed host, and commenting the major role of prostate foci for recurrent cryptococcal infections; prostatic cryptococcosis is usually asymptomatic and may be detected in necropsy study.<sup>1</sup>

In conclusion, the aim of the herein commented articles has been to enhance the awareness of health care workers about less focused aspects of the development of cryptococcomas either among immunosuppressed or in immunocompetent individuals.

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