

Answer: Pulmonary complications are common.

MCQ Explanation:

Blastomycosis, an infection caused by *Blastomyces dermatitidis*, is endemic in North America, especially in the Great Lake region, Mississippi, and Ohio River basin.¹ *B. dermatitidis* grows in soil and is usually acquired by inhalation. Skin involvement is seen in approximately 20% of cases and is the second most common site of infection after the lungs.² Forty to eighty percent of cutaneous lesions originate from a primary pulmonary source.¹ These lesions are characterized as verrucous and/or ulcerated and they often spread centrifugally, typically enlarging up to many centimeters in diameter.¹ In contrast, primary cutaneous inoculation of blastomycosis is less common, presenting with papules or pustules at the site of inoculation with associated locoregional adenopathies.¹ The differential diagnosis for cutaneous blastomycosis includes scrofuloderma, lupus vulgaris, squamous cell carcinoma, nocardiosis, syphilis, granuloma inguinale, other deep fungal infections, and pyoderma gangrenosum.¹

Diagnosis is made by identification of characteristic broad-based budding yeast in tissue or sputum, and/or culture, with culture requiring up to 2-4 weeks of incubation. Serology has low sensitivity and specificity. Itraconazole is the first line treatment for mild-to-moderate disseminated blastomycosis and is generally continued for 6-12 months.³ If the central nervous system is involved, treatment regimen consists of intravenous lipid formulation of amphotericin B for 4-6 weeks, followed by an oral azole (fluconazole, itraconazole, or voriconazole) for at least 12 months. Prognosis is generally favorable with a 90% cure rate.¹

In our patient, a diagnosis of cutaneous blastomycosis was made based on broad-based budding yeasts seen on pathology of a biopsied specimen. Chest x-ray revealed a right lower lobe nodule measuring 1.9 x 1.7 cm. Urine blastomyces antigen was negative. The patient was treated with oral itraconazole for 7 months with resolution of the left facial lesion and pulmonary nodule.

References:

1. Mason AR, Cortes GY, Cook J, Maize JC, Thiers BH. Cutaneous blastomycosis: a diagnostic challenge. *Int J Dermatol.* 2008;47(8):824-30.
2. Chapman SW, Lin AC, Hendricks KA, Nolan RL, Currier MM, Morris KR, et al. Endemic blastomycosis in Mississippi: epidemiological and clinical studies. *Semin Respir Infect.* 1997;12(3):219-28.
3. Chapman SW, Dismukes WE, Proia LA, Bradsher RW, Pappas PG, Threlkeld MG, et al. Clinical practice guidelines for the management of blastomycosis: 2008 update by the Infectious Diseases Society of America. *Clin Infect Dis.* 2008;46(12):1801-12.

Legends:

Figure 1. A verrucoid nodule on left zygoma.

Figure 2. Pathology of the biopsied specimen demonstrating a broad-based budding spore (Grocott's methenamine silver stain)

Authors:

1. Koh Okamoto, M.D. is an infectious diseases fellow physician at Rush University Medical Center/ John H. Stroger Jr. Hospital of Cook County, Chicago, Illinois, United States.
2. Smita Patel, MBBS is a pathology resident physician at Rush University Medical Center.
3. Patricia L. Demarais, M.D. is an infectious diseases physician at John H. Stroger Jr. Hospital of Cook County, Chicago, Illinois, United States. She is an assistant professor at Rush Medical College.