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Disseminated blastomycosis presenting as an exophytic nasal lesion in a pediatric patient

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A 16-year-old female from Tanzania presented to clinic with a three week history of a rapidly growing lesion on the nasal tip. Although previously healthy, her recent history was significant for five months of cough and hemoptysis refractory to azithromycin, levofloxacin, diphenhydramine, benzonatate, and prednisone. Over this period, the patient had five negative COVID tests, and serum testing for tuberculosis was negative. Physical examination was notable for an 8.0 x 7.0 mm hyperkeratotic, exophytic papule with red-violaceous base and overlying black dots on the left nasal tip [Figure 1]. Initial differential diagnosis included cutaneous blastomycosis, cutaneous histoplasmosis, blastomycosis-like pyoderma, squamous cell carcinoma, and atypical mycobacterium infection. Shave biopsy showed epidermis with pseudoepitheliomatous hyperplasia, abscess and rare encapsulated yeast forms with characteristic broad-based budding and thick-walled, refractile capsules [Figure 2]. Fungal cultures were positive for scant organisms compatible with *blastomyces dermatidis*, and sequencing studies confirmed this result. These combined clinical and pathologic findings prompted referral to pediatric infectious disease and pediatric immunology. Immunology workup was negative for HIV, and the patient's percentage and absolute count for T, B and NK cells were normal. The patient was admitted by infectious disease and treated with four days of IV amphotericin B 350 mg QD and discharged to complete the remainder of her two week course at home. She was readmitted secondary to concerns over electrolyte imbalances and acute kidney injury. The patient was discharged after completing amphotericin B treatment and instructed to start itraconazole 200 mg BID for six months.

Figure 1: Exophytic, hyperkeratotic papule on the nasal tip



Figure 2: Intra-dermal abscess with multiple clusters of encapsulated yeast showing broad-based budding and thick, refractile capsules H&E (40X); GMS and PAS-d (100x).

