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WHAT'S YOUR DIAGNOSIS?

PEER REVIEWED

Verrucous Papules and Subcutaneous Nodules in a Patient With a Lung Mass

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A 52-year-old man with a history of tobacco use presented with a 6-week history of worsening cough, dyspnea, fever, night sweats, and hemoptysis. He also had developed painful skin lesions on his face, trunk, scalp, and bilateral upper extremities beginning 6 days prior to presentation.

Physical examination revealed friable and verrucous papules scattered over the right eyelid margin, nasal dorsum, cheeks, scalp, and neck (**Figures 1 and 2**). Multiple erythematous and tender subcutaneous nodules were noted on the chest, abdomen, back, and bilateral upper extremities, some with overlying ulceration and pustulation. The posterior cervical lymph nodes were enlarged and freely mobile.

Figure 1.

Figure 2.

Results of chest computed tomography with intravenous contrast revealed a 6.9 × 5.8-cm retrocardiac mass without mediastinal or hilar lymphadenopathy (**Figure 3**).

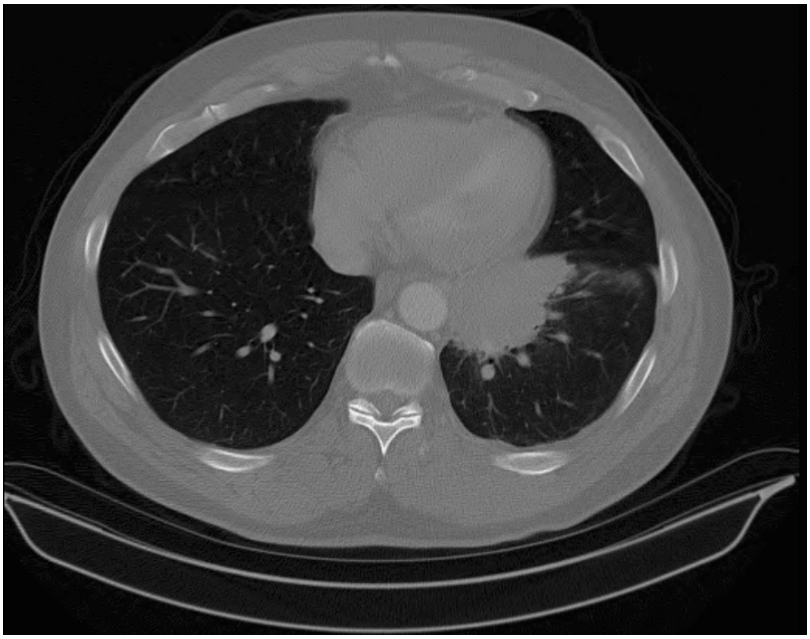

Figure 3.

What is the cause of this man’s skin lesions?

A. Cutaneous metastasis of primary lung cancer

B. Cutaneous tuberculosis

C. Atypical mycobacterial infection

D. Disseminated blastomycosis

E. Pyoderma gangrenosum

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Answer: D, Disseminated Blastomycosis

Based on the patient's symptoms and presentation, the differential diagnosis included deep fungal infection and atypical mycobacterial infection, as well as cutaneous metastasis of primary lung cancer.

A skin biopsy was performed, the results of which showed fungal yeast with broad-based budding. Tissue cultures, endobronchial fine-needle aspiration specimens, and bronchial washings all grew *Blastomyces dermatitidis*, confirming a diagnosis of disseminated blastomycosis. Further workup revealed osteomyelitis of the right tibia in addition to his lung and cutaneous disease.

DISCUSSION

B dermatitidis is a dimorphic fungus that is endemic to the Midwestern, South Central, and Southeastern United States, as well as the Canadian provinces that border the Great Lakes.1 Its primary reservoir is soil, and transmission to humans is predominantly via inhalation of conidia, although traumatic inoculation has been reported.2

The lungs are the primary site of infection, with 25% to 40% of patients developing extrapulmonary manifestations involving the skin, osteoarticular system, genitourinary system, or central nervous system via hematogenous dissemination.1 Approximately 50% of patients will have a subclinical pulmonary infection, and mild cases of blastomycosis may go undetected. Patients who present with acute pulmonary blastomycosis may have fever, cough, night sweats, arthralgias, and fatigue. Adult men are most likely to have disseminated disease.3

Although blastomycosis outbreaks are rare, they usually involve activities that disrupt soil, such as construction or excavation, or recreational activities near lakes or rivers such as hunting, fishing, and camping. Cutaneous blastomycosis is characterized by papulopustules and verrucous plaques. Central ulceration may occur, and healing lesions can leave cribriform

scarring. Cutaneous blastomycosis presenting as pyoderma gangrenosum-like lesions also has been reported.4

Culture testing is the gold standard for diagnosis of blastomycosis. Skin biopsy also may be helpful given the characteristic findings on hematoxylin-eosin staining. Amphotericin B is the first-line treatment of severe disease.1

Our patient was treated initially with amphotericin B and itraconazole, resulting in rapid improvement of his skin lesions over several days. He was discharged from the hospital in good condition and was to complete 12 months of itraconazole therapy.

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