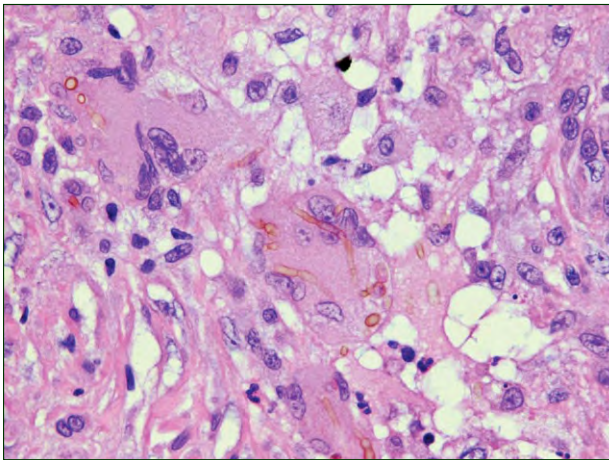


H&E, original magnification $\times 40$; inset, original magnification $\times 10$.



H&E, original magnification $\times 600$.

A 79-year-old man presented with a 1.2-cm nodule on the left arm. The best diagnosis is:

- a. actinomycetoma
- b. aspergillosis
- c. chromoblastomycosis
- d. eumycetoma
- e. phaeohyphomycosis

PLEASE TURN TO PAGE 114 FOR DERMATOPATHOLOGY DIAGNOSIS DISCUSSION

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The author reports no conflict of interest.

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Phaeohyphomycosis

Phaeohyphomycosis is characterized by pigmented hyphae in tissue. Various black molds may be causative, including *Alternaria*, *Bipolaris*, *Curvularia*, *Exophiala*, and *Phialophora*.¹ In immunocompetent hosts, direct inoculation due to trauma or a splinter is the most common cause, resulting in a pseudocyst (Figure 1, inset) lined by histiocytes and giant cells (Figure 1) containing pigmented hyphae (Figure 2). Immunocompromised patients are more likely to develop disseminated lesions that lack the pseudocystic architecture. The brown hyphae have thick refractile cell walls and

bubbly cytoplasm. Occasionally the cross-section of a hypha simulates a spore, but presence of other hyphal forms separates phaeohyphomycosis from chromoblastomycosis, which consists of round copper-colored spores that resemble copper pennies (Medlar bodies, sclerotic bodies)(Figure 3). Mycetomas consist of suppurative granulomas containing large grains of filamentous organisms (bacteria or fungi). Eumycetomas (Figure 4) are composed of fungal hyphae that may be pigmented, but unlike phaeohyphomycosis, the hyphae are organized in large collective grains. In actinomycetoma (Figure 5)

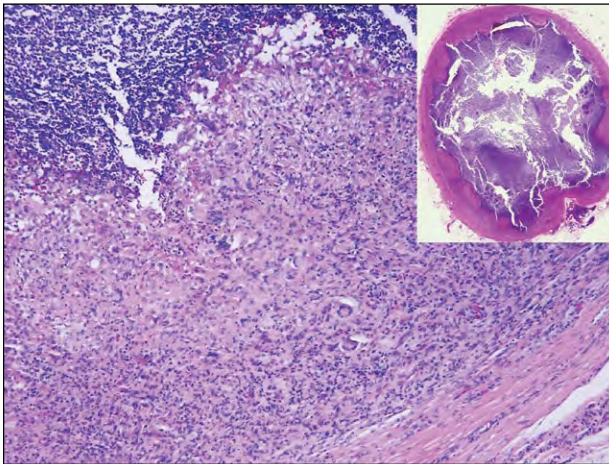


Figure 1. Phaeohyphomycotic pseudocyst (inset) lined by histiocytes and giant cells (H&E; original magnifications $\times 10$ and $\times 40$, respectively).

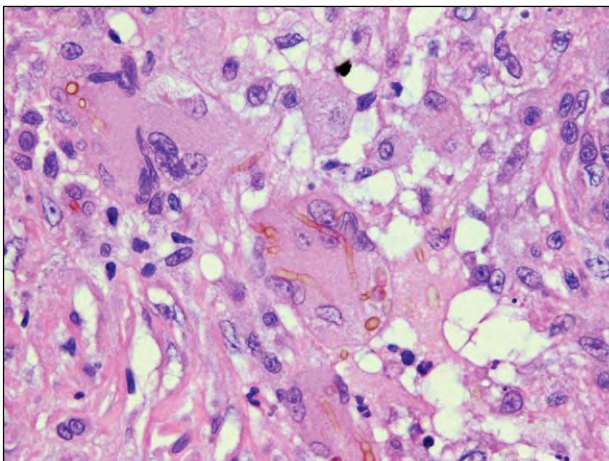


Figure 2. Pigmented hyphae of phaeohyphomycosis (H&E, original magnification $\times 600$).

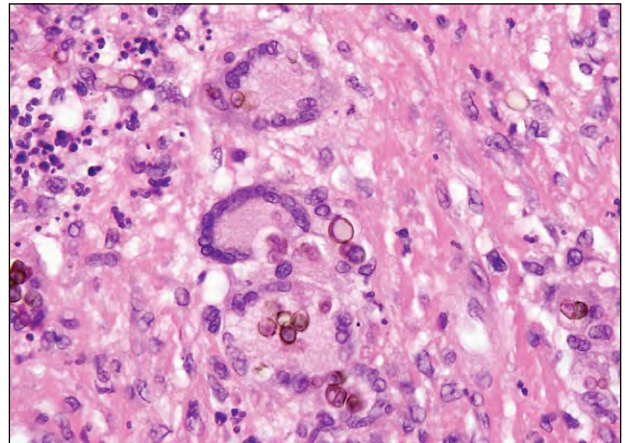


Figure 3. Round copper-colored spores of chromoblastomycosis (H&E, original magnification $\times 600$).

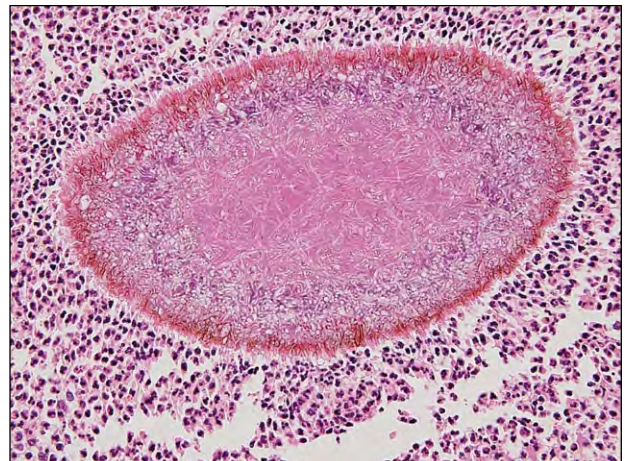


Figure 4. Grains of filamentous fungi in eumycetoma (H&E, original magnification $\times 100$).



Figure 5. Grains of filamentous bacteria in actinomycetoma (H&E, original magnification $\times 200$).

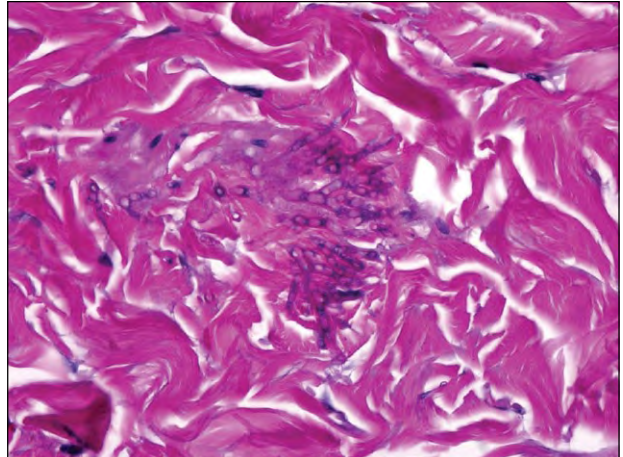


Figure 6. Septate hyphae of aspergillosis filling a blood vessel (H&E, original magnification $\times 600$).

the grains are composed of thinner filamentous bacteria, typically *Nocardia* or *Actinomyces*, which contrasts with the nonfilamentous bacteria clustered in botryomycosis. The hyphae of aspergillosis (Figure 6) are nonpigmented and have a propensity to invade blood vessels, resulting in cutaneous necrosis. These septate organisms have delicate cell walls and bubbly cytoplasm. The hyphae of zygomycosis have a similar propensity to invade

blood vessels but thick, irregular, aseptate and hollow with refractile eosinophilic cell walls.²

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