Answer to Photo Quiz: Pulmonary Nocardiosis

(See page 1195 in this issue [doi:10.1128/JCM.02188-10] for photo quiz case presentation)

An aerobic actinomycete was isolated from a bronchial washing after 6 and 19 days of incubation in Legionella sp. culture and fungus culture, respectively. Acid-fast bacillus culture of a sputum specimen yielded the same organism 8 days after inoculation. Conventional biochemical testing generated a definitive identification of Nocardia asteroides. This identification predated taxonomic changes that have since occurred with the N. asteroides complex (3). This environmental bacterium, upon inhalation or traumatic implantation, can be an etiology of cutaneous (mycetoma) disease, pulmonary disease, or disseminated disease frequently involving the brain. Nocardia sp. infections are rare but occur most frequently in patients with severe immunodeficiency. Nocardiosis has a slight predilection for males and typically affects adults in the third and fourth decades of life (1). Agents incorporated into therapeutic regimens for Nocardia sp. infection include trimethoprim-sulfamethoxazole, amikacin, expanded-spectrum cephems, carbapenems, minocycline, and amoxicillin-clavulanic acid; choices are contingent upon site and severity of infection, as well as underlying host factors (5).

The illustrated Gram stain was originally reported by a technologist at a satellite laboratory as abundant for polymorphonuclear leukocytes and rare for Gram-positive cocci. Upon review by a microbiologist, filamentous organisms were observed, with differential staining within organisms providing the appearance of beads connected by a somewhat transparent sheath resembling “hyphae.” The respiratory function of the patient made a return to baseline during the hospitalization, and the patient was discharged on a therapeutic regimen which included penicillin, levofloxacin, and trimethoprim-sulfamethoxazole. This case is symbolic of the need for Gram stain quality assurance monitoring of nonmicrobiologists deployed in satellite laboratories (2, 4).

REFERENCES


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