



Answer to Photo Quiz: Pneumonia with Lung Abscess Due to Serogroup 10 *Legionella pneumophila*

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The Gram stain of the bronchoalveolar lavage (BAL) fluid smear shows intra- and extracellular Gram-negative bacilli, suggestive of aerobic bacteria. *Legionella pneumophila* is usually described as a pleomorphic, faintly staining Gram-negative bacillus. However, easily visible Gram-negative bacilli in pulmonary samples have been described in previous studies (1), particularly those in which fuchsin instead of safranin was used as a counterstain.

The microbiological diagnosis was made because, at our laboratory, BAL fluids are systematically cultured on buffered charcoal yeast extract agar (37°C, 2.5% CO₂); *L. pneumophila* serogroup 10 grew after 84 h of incubation. *L. pneumophila* DNA in the BAL specimen was detected using PCR targeting the *mip* gene (Eurobio). The patient improved greatly under spiramycin treatment, which was initiated on hospital day 4. In her case, Legionnaires' disease was determined not to be nosocomial in origin but a domestic environmental source could not be found.

Currently, more than 50 *Legionella* species are known, of which *L. pneumophila* is responsible for about 90% of clinical manifestations of Legionnaires' disease, with serogroup 1 being predominant among the 15 serogroups described to date (2). In France, out of 2,250 clinical isolates reported between 2004 and 2012, 26 were of non-*pneumophila* *Legionella* species, and among the *L. pneumophila* isolates, 76 were of serogroups 2 to 14, with only one of serogroup 10 (S. Jarraud, unpublished data). Similarly, in two European studies, among 167 and 1,335 clinical isolates, serogroup 10 represented only 1.2% and 3.1%, respectively (3, 4). Lung abscesses due to *L. pneumophila* occur rarely, almost exclusively in immunocompromised patients, and may be associated with an increase in mortality (5). Guy et al., reviewing *L. pneumophila* cavitory pneumonia cases between 1977 and 2008, noticed an association between the use of corticosteroids and the occurrence of lung abscesses (6). To our knowledge, the present report is the first of cavitory lung infection due to *L. pneumophila* serogroup 10. It illustrates the limited sensitivity of the urine antigen test in diagnosing Legionnaires' disease, especially in immunocompromised patients, as well as the need to perform cultures or PCR or both to reach optimal diagnostic sensitivity.

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See page 1 in this issue (<https://doi.org/10.1128/JCM.03510-14>) for photo quiz case presentation.

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