

Other than “*Rhodococcus*”

To the Editor:

Franco-Paredes and Ray report a case of persistent acid-fast positive smear due to *Rhodococcus equi*.¹ The reported case reminds us of the possibility of non-*Mycobacterium* species microorganism with positive acid-fast stain. However, we are concerned about 2 important issues that need to be clarified.

First, the accurate identification of *Rhodococcus* spp based on conventional biochemical laboratory methods carries the risk of misidentification. Particularly, other members of Actinomycetes, such as *Gordonia*, and *Tsukamurella* spp, are difficult to be differentiated from *Rhodococcus* spp.² In the previous study of 8 patients with *Tsukamurella* infection and 2 patients with *Tsukamurella* colonization, all of the 10 clinical isolates were misidentified as *Rhodococcus* spp and accurately identified as *Tsukamurella* to the species level by molecular methods.³ Another study of *Gordonia* species had similar findings: 15 of 66 clinical isolates initially identified as *Rhodococcus* spp by conventional methods were further confirmed as *Gordonia* spp by 2 molecular methods.⁴ As these 3 pathogens can cause similar clinical manifestations of pulmonary infections—like tuberculosis,² it suggests that advanced molecular methods should be required for correct diagnosis to avoid misidentification.

Second, although *Rhodococcus* spp can show positive acid-fast smear, it has branching filamentous morphology,

and often has a bead appearance. These characteristics under microscope would be helpful for differentiating from *Mycobacterium* spp. Thus, in this demonstrated case, a more detailed microscopic examination of morphology by an experienced microbiologist may lead to a prompt and correct diagnosis.

In conclusion, we would like to remind physicians about 2 uncommon pathogens—*Gordonia* and *Tsukamurella*—which are hard to differentiate from *Rhodococcus* by conventional laboratory methods. In addition, the detailed morphologic examinations would be helpful for diagnosis.

Shih-Yang Su, MD^a
Chien-Ming Chao, MD^b
Chih-Cheng Lai, MD^b

^aDepartment of Emergency Medicine
Tainan Municipal Hospital
Tainan, Taiwan

^bDepartment of Intensive Care Medicine
Chi Mei Medical Center
Liouying, Tainan, Taiwan

<http://dx.doi.org/10.1016/j.amjmed.2012.11.026>

References

1. Franco-Paredes C, Ray S. Cause of persistent acid-fast positive smears in pulmonary tuberculosis. *Am J Med.* 2012;125:e3-e4.
2. Savini V, Fazii P, Farvaro M, et al. Tuberculosis-like pneumonias by the aerobic actinomycetes *Rhodococcus*, *Tsukamurella* and *Gordonia*. *Microbes Infect.* 2012;14:401-410.
3. Liu CY, Lai CC, Lee MR, et al. Clinical characteristics of infections caused by *Tsukamurella* spp. and antimicrobial susceptibilities of the isolates. *Int J Antimicrob Agents.* 2011;38:534-537.
4. Lai CC, Wang CY, Liu CY, et al. Infections caused by *Gordonia* species at a medical centre in Taiwan, 1997 to 2008. *Clin Microbiol Infect.* 2010;16:1448-1453.

Funding: None.

Conflict of Interest: None.

Authorship: All authors had access to the data and a role in writing the manuscript.