

Case Report

First Case Reports of Nontuberculous Mycobacterial (NTM) Lung Disease in Ecuador: Important Lessons to Learn

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Abstract: Nontuberculous mycobacteria (NTM) lung infections are often misdiagnosed as tuberculosis, which can lead to ineffective antibiotic treatments. In this report, we present three cases of NTM lung infections in Ecuador that were initially diagnosed and treated as tuberculosis based on the results of sputum smear microscopy. The patients, all male, included two immunocompetent individuals and one HIV-positive subject. Unfortunately, sputum culture was not initiated until late in the course of the disease and the cause of the lung infection, *Mycobacterium avium* complex (MAC), was only identified after the patients had either passed away or were lost to follow-up. These cases are the first documented cases of NTM lung infections in the English medical literature from Ecuador. We emphasize the importance of accurate diagnosis of NTM infections by culture and identification to species level. Sputum smear staining alone cannot differentiate between mycobacterial species, which can lead to misidentification and ineffective treatments. Additionally, reporting NTM pulmonary disease as a notifiable disease to national TB control programs is recommended to obtain accurate prevalence data. These data are critical in determining the importance of this public health problem and the necessary actions needed to address it.

Keywords: nontuberculous mycobacteria (NTM); pulmonary infection; tuberculosis; MAC infection; Ecuador



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1. Introduction

The genus *Mycobacterium* includes more than 200 species including the main human pathogens of the *Mycobacterium tuberculosis* complex and *M. leprae*, as well as numerous other environmental species, nontuberculous mycobacteria (NTM), that can be found in water and soil. These NTM are occasionally responsible for opportunistic infections in humans and animals [1,2]. Although pulmonary infections caused by mycobacteria are most commonly caused by one of the members of the *M. tuberculosis* complex, over the last decades, NTM has become increasingly prevalent as the causative agent of pulmonary infections [3], and in some countries, NTM pulmonary infection has become more important than infection by a member of the *M. tuberculosis* complex. An example is Canada where during a study period of 6 years, the isolation prevalence of NTM was approximately twice as great as the rates of pulmonary tuberculosis cases [4]. Another example of a region with a high registered prevalence of NTM isolation is Shanghai, China, where in the year 2008,