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Chronic Obstructive Pulmonary Disease Exacerbation by *Corynebacterium propinquum*☆

Exacerbación de la enfermedad pulmonar obstructiva crónica por Corynebacterium propinquum

To the Editor:

Corynebacterium propinquum (*C. propinquum*) is a bacterium found in the normal flora of the skin and mucous membranes that mainly colonizes the oropharyngeal region of the upper respiratory tract.[1] Some rare cases of opportunistic respiratory infection by *C. propinquum*, often associated with immunosuppression or underlying lung disease, have been reported.[2,3]

We report a case of respiratory infection in a 75-year-old man, former smoker of 60 pack-years, diagnosed with chronic obstructive pulmonary disease (COPD) GOLD IV, treated with bronchodilators and high-dose inhaled corticosteroids, with a history of frequent exacerbations requiring antibiotics and systemic corticosteroids. The patient was hospitalized with a 1-week history of fever, increased dyspnea, and cough with purulent expectoration. Empirical treatment with levofloxacin began in the emergency room and samples were collected for microbiological analysis, including sputum for standard culture and urine for pneumococcal and *Legionella* spp. antigen testing, in view of initially suspected pneumonia. Rhonchi and wheezing were heard in both lung fields on physical examination. Clinical laboratory testing showed 17,040 leukocytes/mm^3 (92% neutrophils) and blood biochemistry results were normal. Lung function tests revealed FVC: 1.61 (52%), FEV_1: 0.631 (27%) and FEV_1/FVC 39%. No infiltrates were seen on chest X-ray.

The sputum Gram stain showed fewer than 10 epithelial cells and more than 25 polymorphonuclear leukocytes/100× field, and Gram positive bacilli with morphology suggestive of *Corynebacterium* spp. (10/1000× field). Culture was negative at 24 h, so it was reincubated. At 48 h, there was abundant growth of creamy, round, whitish, catalase-positive colonies. *C. propinquum* was identified using the API® Coryne system (bioMérieux), and subsequently confirmed by mass spectrometry (MALDI-TOF) and 16S rRNA gene sequencing. The disk diffusion method was used for antibiotic sensitivity testing, showing the isolate to be sensitive to penicillin, ampicillin, ciprofloxacin, tetracycline, cefotaxime, vancomycin and rifampicin, and resistant to erythromycin and clindamycin.

One of the main problems in establishing the etiological diagnosis of respiratory infections is the fact that the microorganisms that cause most respiratory infections often occur in the upper airways as part of the normal flora or as colonizers. Thus, to determine the clinical significance of these microorganisms, the quality of the respiratory specimen must first be evaluated by Gram stain. In this evaluation, generally performed in sputum, epithelial cells, suggestive of oropharyngeal contamination, and polymorphonuclear leukocytes, indicative of a pulmonary focus, are quantified. In our case, the Gram stain report suggested that the specimen was representative of a lower respiratory tract sample, so the cause of the exacerbation, in the absence of other causes, could be attributed to *C. propinquum* infection. The patient progressed well with clinical respiratory improvement, confirmed with a subsequent negative culture.

Since *C. propinquum* was first described in 1993, very few clinically significant cases have been published. Most authors report it as an opportunistic pathogen and an emerging infection in both the respiratory tract and other sites.[4] As mentioned, *C. propinquum* respiratory infection is rare, and has been documented mainly in hospitalized, immunosuppressed patients, and in patients with underlying respiratory disease, such as COPD or bronchiectasis, receiving wide-spectrum antibiotics.[5]

The few cases reported in the literature agree on the importance of the Gram stain for establishing the pathogenic role of *C. propinquum*, particularly in immunosuppressed or hospitalized patients who have received previous antibiotic treatment.[2,3,5]

Although *C. propinquum* is generally sensitive to vancomycin, multiresistant strains do exist,[6] so antibiotic sensitivity testing is recommended for prescribing the appropriate treatment.

In our opinion, although few cases have been published, *C. propinquum* can behave as an emerging pathogen. It can be responsible for COPD exacerbations, particularly if the patient presents predisposing factors, and the strain is isolated from a lower respiratory tract sputum sample.

Conflict of Interest

The authors declare that they do not have any conflict of interest.

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Mycobacterium interjectum Lung Infection: A Case Report☆

Enfermedad pulmonar por Mycobacterium interjectum*: a propósito de un caso*

Mycobacterium interjectum (M. interjectum) is a rare, non-tuberculous mycobacterium, known to cause lymphadenitis cervicalis in young patients.[1] We report a case of pulmonary disease.

A 52-year-old man, active smoker, presented with a 15-day history of fever, general malaise and bloody expectoration. Isolated crepitating rales were heard on lung auscultation. Chest X-ray showed right upper lobe condensation and enlarged right hilum. Treatment with levofloxacin was prescribed, but improvement was limited, so a chest computed tomography (CT) was performed, revealing condensation with air bronchogram in the posterior segment of the right upper lobe (Fig. 1), and enlarged right hilar, retrocava-pretracheal and prevascular lymph nodes. Bronchoscopy was performed: gross results were normal, and cytology and bacilloscopic results from bronchial aspirate were also normal. CT-guided core biopsy of the lung was conducted, and histologic analysis of the specimen showed granulomas with multinucleated giant cells and epithelioid cell histiocytes, some of which had central necrosis. Treatment began with isoniazid, rifampicin, pyrazinamide and ethambutol. Mycobacteria were subsequently isolated from the culture of the bronchial aspirate; these were identified as *M. interjectum* using DNA technology based on inverse hybridization of PCR products targeting the 23S rRNA gene (GenoType® *Mycobacterium* CM). The patient's progress was satisfactory and, 2 months later, cultures were negative for mycobacteria. Pyrazinamide and ethambutol were withdrawn, while isoniazid and rifampicin administration continued for 1 year. At that time, the patient remained asymptomatic, with fibrous scarring and infiltration in the right upper lobe on chest X-ray. Currently, 20 months later, he is stable with no signs of disease reactivation.

Only three cases of lung involvement with *M. interjectum* have been reported in the literature.[2–4] All three were cases of cavitary disease in which *M. interjectum* was later isolated. The strains were resistant to isoniazid, rifampicin, pyrazinamide[3] and ethambutol,[3,4] although one patient[3] initially responded well to standard antituberculosis treatment. Nevertheless, 18 months later, symptoms and radiological progression recurred, and a non-tuberculous mycobacteria with the same resistance profile as before was isolated.

In contrast to the above-mentioned cases, our patient did not have cavitary disease, and response to first-line antituberculosis drugs was good, despite rifampicin and ethambutol resistance found on antimicrobial sensitivity testing. In view of the good clinical progress after identification of the mycobacteria, an antibiogram was felt to be unnecessary, and this may be considered as a limitation of our report. However, discrepancies between *in vitro* and *in vivo* resistance data raise questions regarding the real significance of *in vitro* resistance in certain situations. This issue and the long follow-up period add to the value of the experience reported.

To conclude, *M. interjectum* is a very unusual cause of lung disease. Once diagnosed, treatment with a standard antituberculosis regimen may be attempted.

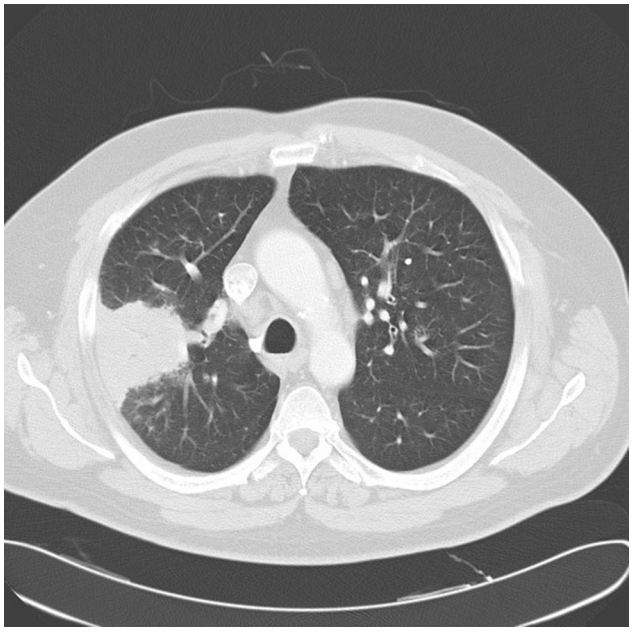

Fig. 1. Chest CT image of right upper lobe.

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