Correspondence

Propionibacterium propionicus Infection in Chronic Granulomatous Disease

Sir—Bourdeaut et al. [1] recently described 2 pediatric patients with chronic granulomatous disease (CGD) who developed chest infections caused by Propionibacterium acnes. We describe a 7-year-old boy with CGD who developed a Propionibacterium propionicus infection.

CGD is an inherited disease caused by defects in superoxide-generating nicotinamide adenine dinucleotide phosphate oxidase of phagocytes [2]. Impairment of oxygen-dependent intracellular killing mechanisms results in severe infections with catalase-producing Staphylococcus aureus, Burkholderia cepacia, or Aspergillus species [3].

In our patient, CGD was diagnosed at 3 months of age after an episode of suppurative cervical lymphadenitis. X-linked inheritance of CGD was supported by the finding of intermediate values with the nitroblue-tetrazolium (NBT) test (47% of neutrophils were NBT positive) of a blood sample from the patient’s mother. He was given prophylactic cotrimoxazole; he was free of major infections. At 7 years of age, he was admitted to our institute because of chest-wall contusion. At admission he was febrile (temperature, 39°C) and tachydyspneic (respiration rate, 50 breaths/min). Laboratory values were as follows: erythrocyte sedimentation rate, 84 mm/h; hemoglobin, 147 g/L; WBC count, 52.0 × 10⁹ cells/L, with 45.2 × 10⁹ neutrophils/L; C-reactive protein, 237 mg/L (normal range, <10 mg/L). Chest radiography revealed a left-side pleural effusion. A thoracic CT scan showed microabscesses of the left lower lobe. Chest drainage yielded 300 mL of fibrinous exudate. Empirical antibiotic treatment with tobramycin and ceftazidime was started. The patient became afebrile 48 h later but pleural effusion persisted, and a thoracotomy was performed 2 weeks later. Pathological examination of the lung tissue specimen revealed microabscesses and granulomatous inflammation. Results of staining for mycobacteria and fungi were negative. Direct Gram staining of pleural fluid and lung biopsy specimens revealed non–acid-fast, gram-positive filamentous rods identified as P. propionicus. Isolates were sensitive to penicillin, cephalosporins, and vancomycin. We continued treatment with penicillin, and complete clinical remission was achieved 1 month later.

The most common causes of pneumonia in patients with CGD are Aspergillus and Nocardia species and Burkholderia cepacia [3]. However, various opportunistic, catalase-producing microbes may infect patients with CGD [2, 3]. P. propionicus is a less common causative agent of a disease similar to actinomycosis [4]. Thoracic actinomycosis results from aspiration of pieces of infectious material from the teeth and may involve the chest wall, the lungs, or both. Intact mucosa are the first line of defense, because P. propionicus, like other anaerobes in the normal flora, must gain access to tissue with an impaired blood supply to establish an infection. Thus, it is possible that multiple episodes of chest trauma in our patient allowed development of this infection. In our patient, the clinical course and the response to antimicrobial treatment were similar to those in patients with CGD and P. acnes chest infection [1]. Bourdeaut et al. [1] emphasized the importance of the lung biopsy that led to correct diagnosis of this rare infection. Infections with Propionibacterium species have been reported in patients with trauma, in patients who had undergone surgery, and in patients with immunodeficiency [4]. Propionibacterium species are rarely associated with human disease but may cause serious, deep-seated infections in patients with CGD.

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References

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How Much Evidence Do We Have to Recommend Oral Doxycycline for Empirical Treatment of Community-Acquired Pneumonia?

Sir—I read the interesting letter by Cunha [1] that emphasized the suitability of doxycycline as a cost-effective alternative for treating patients with community-acquired pneumonia (CAP). I agree that the efficacy of doxycycline against Streptococcus pneumoniae should not be compared with that of tetracycline. However,