

July 2018 post: Tuberculosis (by Dr. Kristina Bryant)

A 15-year-old girl presents with a week-long history of fever and cough. Azithromycin is prescribed for suspected *Mycoplasma pneumoniae* infection but four days later, she is no better. A chest radiograph reveals a dense right upper infiltrate, prompting treatment with amoxicillin-clavulanate for what is mostly likely pneumococcal pneumonia. Three weeks later, the child is back in the office. Her fever is gone, coincident with a course of steroids prescribed after an interval emergency department visit, but she is still coughing and has lost four pounds. The pediatrician contemplates potential next steps. Follow up chest x-ray? Pulmonology evaluation? Test for tuberculosis?

While case rates of tuberculosis are on the decline in the United States, infections continue to occur. In 2017, there were 9039 cases of tuberculosis confirmed in the United States and 65 of these were in Kentucky. Pediatricians should keep this diagnosis in mind when seeing children and adolescents with prolonged cough or pneumonia that fails to improve with typical therapy. Signs and symptoms of tuberculosis in young children are subtle and could include fever, failure to thrive and swollen lymph nodes. Signs and symptoms in adolescents mirror those in adults and include cough that lasts three weeks or longer, chest pain, hemoptysis, fever, night sweats, decreased appetite, weight loss and fatigue.

For the teenager in the vignette, the pediatrician performed a careful physical exam which revealed decreased breath sounds and dullness to percussion in the right upper fields. A repeat chest radiograph demonstrated no change in the right upper lobe infiltrate. When asked “Do you or your child have any risk factors for TB,” the mother immediately denied any. Recognizing that tuberculosis may be associated with social stigma, the pediatrician took a step back and asked more general questions. Where was your child born? Where has your child traveled outside the United States and how long did she stay? Has she spent time with anyone with a history of a positive tuberculosis test? What about someone with a chronic, unexplained cough?

The mother reported that her daughter had lived her entire life in Louisville but typically spent a few weeks every summer with family members in Mexico. Her maternal grandfather made frequent trips to visit the family until his death from “pneumonia” 8 months earlier.

An interferon-gamma release assay—a blood test for tuberculosis that can be used in individuals at least five years of age—was positive, confirming the pediatrician’s suspicions. She referred her patient to the local health department so that three sputum samples could be obtained for testing and empiric treatment initiated. “It’s the first case of tuberculosis I’ve seen since residency,” the pediatrician admitted. “I had to refresh my knowledge of diagnosis and treatment.”

Fortunately, excellent resources exist. If you want to learn more about TB, check out the 2017 clinical practice guidelines developed by the American Thoracic Society, the Centers for Disease Control and Prevention, and the Infectious Diseases Society of America with input from the American Academy of Pediatrics: Lewinohn et al., Official American Thoracic Society/Infectious Diseases Society of America/Centers for Disease Control and Prevention Clinical Practice Guidelines: Diagnosis of Tuberculosis in Adults and Children. *Clin Infect Dis* 2017; 64:e1-e33. Additional online resources are available from the Southeastern National Tuberculosis Center <https://sntc.medicine.ufl.edu/home/index#/news/466>