

10-12-2020

An Unlikely Combination of Neutrophilic Predominant Pleural Effusion with Acid-Fast Bacilli Positivity

Vincent Chan
Abington Jefferson Health

Qian Zhang
Abington Jefferson Health

Ahmad Raza
Abington Jefferson Health

Artem Minalyan
Abington Jefferson Health

William Ward
Abington Jefferson Health
Follow this and additional works at: <https://jdc.jefferson.edu/abingtonfp>

 Part of the [Internal Medicine Commons](#)

[Let us know how access to this document benefits you](#)

Recommended Citation

Chan, Vincent; Zhang, Qian; Raza, Ahmad; Minalyan, Artem; and Ward, William, "An Unlikely Combination of Neutrophilic Predominant Pleural Effusion with Acid-Fast Bacilli Positivity" (2020). *Abington Jefferson Health Papers*. Paper 47.
<https://jdc.jefferson.edu/abingtonfp/47>

This Article is brought to you for free and open access by the Jefferson Digital Commons. The Jefferson Digital Commons is a service of Thomas Jefferson University's [Center for Teaching and Learning \(CTL\)](#). The Commons is a showcase for Jefferson books and journals, peer-reviewed scholarly publications, unique historical collections from the University archives, and teaching tools. The Jefferson Digital Commons allows researchers and interested readers anywhere in the world to learn about and keep up to date with Jefferson scholarship. This article has been accepted for inclusion in Abington Jefferson Health Papers by an authorized administrator of the Jefferson Digital Commons. For more information, please contact: JeffersonDigitalCommons@jefferson.edu.

SESSION TITLE: Medical Student/Resident Chest Infections Posters

SESSION TYPE: Med Student/Res Case Rep Postr

PRESENTED ON: October 18-21, 2020

INTRODUCTION: Mycobacterium TB is a predominant infection in South-East Asia and Africa which results in significant morbidity and mortality. It has a significantly lower incidence in the United States. TB pleurisy is most often a lymphocytic effusion that is culture negative requiring a pleural biopsy for diagnosis. Here we present a case of a patient who presented with cough and was found to have a neutrophilic tuberculous pleural fluid with acid-fast bacilli (AFB) positivity on smear.

CASE PRESENTATION: A 51yo M presented for complaints of cough for 6 months with mucoid sputum and dyspnea on exertion. He endorsed a 20lb weight loss in 6 months. He denied hemoptysis, fever, travel and history of mycobacterial disease. He is a never smoker. Vitals revealed a temperature 98.5 F, heart rate 96 bpm, respiratory rate 20 per minute, blood pressure 111/71 and an oxygen saturation on 97% on room air. Physical exam was pertinent for absent sounds at the R lung base and scattered crackles through his R lung. Laboratory analysis revealed a sodium of 128mEq/L, hemoglobin of 8.8g/dL, white blood cell count 8.1K/uL with 4% bandemia and an absolute lymphocyte count of 1.1K/uL. Ferritin was 622ng/mL. CTA chest revealed a loculated L pleural effusion with pleural thickening, mediastinal shift, lung nodules with confluent airspace opacities and diffuse adenopathy (image 1-2). Pleural fluid analysis demonstrated an LDH 6182U/L, total protein 6.1, glucose <5, WBC 2650 with 98% neutrophils. Pleural fluid acid fast bacilli (AFB) stain was immediately positive for abundant AFB. Sputum AFB was also positive. PCR was positive for mycobacterium tuberculosis. A small bore chest tube was placed for drainage and the patient started on quadruple therapy for TB. Repeat CT post chest tube placement demonstrated improvement in the effusion with residual hydropneumothorax. HIV was positive. CD4 count was 30, viral load was 237 000 copies/mL. The department of health interviewed the patient and the patient was discharged home on direct observation therapy (DOT) with plans to start outpatient HAART with infectious diseases specialist.

DISCUSSION: In the US, about 5% of patients with TB have pleural disease(1). TB pleurisy is most often lymphocytic predominant but neutrophilic predominant effusions have been reported in less than 5% of cases(2) and generally point towards an acute reactivation of disease. Pleural fluid AFB smear has been reported to be positive in less than 10% of cases of TB pleurisy(3). In the setting of clinical suspicion, pleural biopsy should be done to look for the organism or non caseating granulomas, and treatment should be initiated for tuberculosis even provided negative sampling.

CONCLUSIONS: TB pleurisy is rarely neutrophilic predominant and the diagnosis is rarely made by pleural fluid positivity. Clinicians should be aware that neutrophilic predominant pleural fluids do not exclude the diagnosis of TB pleurisy.

Reference #1: Baumann M., Nolan R., Petrini M. et al. Pleural Tuberculosis in the United States. *Chest*. 2007. 131(4); 1125-1132

Reference #2: Lee J., Lee S., Lim J. et al. Radiologic and laboratory differences in patients with tuberculous and parapneumonic pleural effusions showing non-lymphocytic predominance and high adenosine deaminase levels. *Infection*. 2015. 43(1); 65-71

Reference #3: Vorster M., Allwood B., Diacon A. et al. Tuberculous Pleural Effusions: Advances and Controversies. *J Thorac Dis*. 2015. 7(6); 981-991