

Introduction

Pulmonary tuberculosis (PTB) is a condition wherein the lungs are infected with Mycobacterium Tuberculosis bacteria. It can be classified as primary or secondary and it is endemic in 3rd world countries. Primary PTB occurs when an individual gets exposed to the Mycobacterium Tuberculosis for the first time through infected air droplets. It usually causes middle and lower lung field opacities with mediastinal adenopathy. Secondary PTB occurs from reactivation of a previous TB infection (Latent TB). It usually causes upper lung lobe opacities or cavities. Here we have a case where a patient had a right upper lobe lung cavity along with right middle and lower lobe consolidation. Patient not only had AFB culture positive but also had secondary Bacterial Pneumonia with Methicillin sensitive Staph aureus.

Discussion

This case of PTB was unique since it was complicated with secondary bacterial pneumonia and also the patient had positive AFB culture but negative Quantiferon TB Gold which leans more towards primary PTB. Despite the typical upper lung lobe cavity, there was lesser chance of secondary PTB reactivation from latent TB because of high sensitivity of the Quantiferon TB Gold . This test has greater than 80% sensitivity for secondary PTB.

Conclusions

Primary PTB can be considered even if there is a cavitory lesion in upper lung lobe if Quantiferon TB Gold is negative considering its high sensitivity. Also with PTB infection there is always a chance of superimposed infection from other bacteria. As in our case, while waiting for the final culture report, adding broad spectrum antibiotics instead of going towards MDR therapy, resolved the fever spikes.

Case Presentation

We have a unique case of a 31-year-old male, who immigrated from Honduras recently, presented with 2-weeks of productive cough, fever and weight loss. He denied any night sweats or hemoptysis. Upon presentation he was placed on high flow oxygen as he was hypoxic. Chest imaging showed right upper lobe lung cavitory lesion and dense consolidation in the middle and lower right lung lobes. He was noted to have poor oral hygiene and initial diagnosis was leaning towards Necrotizing pneumonia from anaerobic infection. Still PTB and community acquired pneumonia were in the differential as well and he was kept in Airborne isolation. Patient was started on Piperacillin/Tazobactam however he continued to spike fevers. Initial Sputum c/s showed few MSSA. Subsequently bronchoscopy was performed with lavage being positive for AFB stain and cultures consistent with PTB. He was transitioned to anti-tuberculosis therapy (ATT). He continued to have fever spikes but improved when broad spectrum antibiotics were re-initiated along with ATT. Quantiferon TB Gold unexpectedly came back negative but we continued with the ongoing treatment. Multidrug resistant mycobacterium was being considered but final AFB culture showed Mycobacterium TB without resistance. During the hospital course he developed recurrent pneumothorax due to broncho-pleural fistula in the right upper lobe requiring chest tube placement twice. Eventually the chest tube was removed successfully once no more air leak was noted. No other interventions were needed. Subsequently, the patient was discharged home on ATT.

References

1. Time interval to conversion of interferon-g release assay after exposure to tuberculosis .S.W. Lee, D.K. Oh, S.H. Lee, H.Y. Kang, C-T. Lee, J-J. Yim .European Respiratory Journal 2011 37: 1447-1452
2. Agwu E, Ohihion A, Agba M, et al. Incidence of Streptococcus pneumoniae infections among patients attending tuberculosis clinics in Ekpoma, Nigeria; 2006.
3. Clinical and Radiographic Correlates of Primary and Reactivation Tuberculosis.A Molecular Epidemiology Study .Elvin Geng, MD, MPH; Barry Kreiswirth, PhD; Joe Burzynski, MD, MPH; et al Neil W. Schluger, MD. JAMA. 2005;293(22):2740-2745. doi:10.1001/jama.293.22.2740

