

A Case Report on Pleural Effusion Induced by Pulmonary Tuberculosis Reactivation

G. Lakshmi Narasimha¹, Giri Raja Sekhar Dornadula²

¹Pharm D Student, Department of Pharmacy Practice, Annamacharya College of Pharmacy, Rajampet, India

²Associate Professor, Department of Pharmacy Practice, Annamacharya College of Pharmacy, Rajampet, India

Abstract: Tuberculosis is the major health problem in the developing countries and is caused by *Mycobacterium Tuberculosis*. Pleural Effusions are accumulation of fluid in the pleural space and is one of the manifestations of extra-pulmonary tuberculosis. Pulmonary tuberculosis induced pleural effusions are one of the forms of reactivated disease by the T-helper type 1 (Th1) cells. Sometimes pleural effusions are also reported in patients who are taking drugs like Bromocriptine, Ergotamine and also exposure to Asbestos. Case Presentation: In this case report we present a case of 78 years old man who admitted in the hospital with complaints of left sided chest pain, shortness of breath and cough associated sputum with fever and had a past medical history of known case of pulmonary tuberculosis and used the anti-tubercular therapy five months back and discontinued the therapy by last one month. Patient had a history of use of Ergotamine tablets for his recurrent headaches as OTC medication. After clear examination this was confirmed as reactivated pulmonary tuberculosis with pleural effusion. Conclusion: The patient condition was improved after usage of medications for symptomatic use and continued with anti-tubercular therapy.

Keywords: Reactivation, Delayed hypersensitivity reaction, Ergotamine, T-helper cells

1. Introduction

Pleural Effusion is an accumulation of fluid in the pleural space of lungs. Mostly these pleural effusions are caused by Neoplasms, Heart failure, Infections and sometimes drug induced. Among the infections the common type of infections that is associated with pleural effusions is Tuberculosis. ^[1]Pleural effusion is an extra-pulmonary type of tuberculosis. Pathogenesis of initial event starts with the rupture of subpleural caseous focus in the lung in to pleural space and results in the recognition of mycobacterial antigens by the CD4+ T-lymphocytes (T-helper type 1 cells) and results in the delayed type of hypersensitivity reaction. These tuberculosis associated pleural effusions are unilateral and small to moderate in size. ^[2]Pleural fluid is associated with the protein level of >5gm/dl, reduced glucose concentration, scattered mesothelial cells with small lymphocytes. However effusion and symptoms are resolved within month's patients again tends to develop active form of tuberculosis. ^[3]In this case report we describe a patient of reactivated pulmonary tuberculosis with pleural effusion.

2. Case Report

A 78 years old male patient was admitted in General Medicine Department of Government General Hospital in Kadapa with the chief complaints of left sided chest Pain, shortness of breath and productive cough associated with fever since 3 days. Patient past medical history reveals he is a known case of tuberculosis 5 months back and took the anti-tubercular therapy for 5 months and discontinued the therapy by last one month. His ANTI-TB drug regimen category includes Rifampicin (150mg), Isoniazid (75mg) and Ethambutol Hydrochloride tablets (275mg) taking TID.

As part of regular clinical pharmacy services during pharmacist rounds the patient was interviewed for medication history, patient revealed the usage of Ergotamine

tartrate and caffeine tablet since 10years for his recurrent headaches as a symptomatic relief which is remained unidentified by the physician during the treatment. On general examination the patient was conscious and coherent and his vitals were as follows BP-124/72, Pulse-117/min, Respiration-18/min, CVS-S1S2+, CNS- no abnormality.

Investigations

His laboratory investigations were RBS-99mg/dl, Urea-55mg/dl, creatinine-1.2mg/dl, serum bilirubin-2.1mg/dl, HIV&HBS Ag- negative & non-reactive. Sputum culturing shows the presence of *Candida Spp*.

Ultrasonography of Abdomen.

Free fluid collection in the left lobe of lung lower pole mainly 5×3cms inside in 6thICS in mid axillary line. No pleural thickening in left sided. Clinical evaluation was done and condition was diagnosed as reactivated pulmonary tuberculosis with left sided pleural effusion. The patient was treated symptomatically with nebuliser Budesonide, inj. Theophylline- 2cc IM O.D, inj. Pantoprazole-40mg IV OD, Syrup Ambroxol-5ml TID, Tab. B Complex-OD, inj. Tramadol- IM BD and tab. Paracetamol 500mg BD.



Figure 1: Patient Chest x-ray revealing pleural effusion

3. Discussion

Pleural effusion in this case report is primarily due to the reactivation of the pulmonary tuberculosis and is disease induced. This is caused by the breakdown of sub pleural focus into the pleural space followed by the activation of inflammatory responses.^[4] This is characterised by the chest pain, shortness of breath and cough without or with sputum and fever. The other cause we can get evidence for pleural effusion in this case is usage of OTC medication Ergotamine tartrate & Caffeine tablets for past 30 years. In some case reports it was mentioned that chronic usage of ergotamine leads to pleural effusions.^[5] The patient also had the presence of *Candida* spp in sputum which is an another indication that the pulmonary tuberculosis patients had a *Candida* co-infection.^[6] In this case report patient developed the pleural effusion after the discontinuation of anti-tubercular therapy which is majorly disease induced and also on the chronic term use of ergotamine and caffeine tablet which on other side less likely to be drug induced. The patient condition was improved after symptomatic treatment and withdrawal of ergotamine tablet. Patient symptoms like cough, chest pain and shortness of breath are resolved.

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4. Conclusion

Discontinuation of anti-tubercular therapy leads to reactivated pulmonary tuberculosis with pleural effusion in this patient. Hence awareness should be created among public about the regular intake of medicines throughout the course duration.

All the patients should be advised to reveal their use of any OTC medications to the physician or pharmacist to avoid adverse effects or drug interactions or to minimise chronic OTC medication use may lead to further complications like pleural effusion with long term use of ergotamine in this case.

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