DIAGNOSTIC DILEMMA IN AN ATYPICAL PRESENTATION OF TUBERCULOUS PLEURAL EFFUSION

[1]GIRI S, [2]CHAUDHURI S

[1,2]Associate Professor, Department of General Practice and Emergency Medicine, BPKIHS, Dharan, Nepal.
E-mail: [1]dr.sarojgiri@gmail.com

Abstract - Tuberculosis (TB) is one of the most prevalent infectious diseases infecting almost half of Nepalese population and a significant public health problem in Nepal. Its burden is increasing due to co-infection in HIV infected patients. Extra pulmonary TB accounts about 25-30% of all TB cases in Nepal. Gold standard for diagnosis of TB is by bacteriological confirmation in specimen; however it is not always possible in resource limited settings like ours. Atypical presentation makes the diagnosis more challenging. Judicious use of investigations and clinical judgment are mandatory in diagnostic dilemmas. In the parts of the world with high prevalence of TB, increased ADA level of pleural fluid >50U/L and response of symptoms to anti-tubercular therapy helps in diagnosing tuberculous pleural effusion in view of minimal clinical suspicion of other causes of exudative pleural effusion. We report a case of a 42 years lady with an atypical presentation of tuberculous pleural effusion, who went through a tough and distressing time for her diagnosis and treatment.

Keywords - Atypical presentation, Tuberculous pleural effusion, Diagnostic dilemma, ADA

I. INTRODUCTION

'Tuberculosis (TB) is one of the most prevalent infectious diseases and significant public health problem in Nepal. It is the sixth leading cause of death in the country. Almost half of the Nepalese population is infected with TB. It is considered to be Nepal's top health challenge as decline rate in incidence per annum is unacceptably low.'[1] TB is a chronic granulomatous disease caused by Mycobacterium tuberculosis, an acid fast bacilli (AFB). 'Although > 70 % of the TB cases are pulmonary bacteriologically confirmed or clinically diagnosed, around 29% cases are extra-pulmonary tuberculosis (EPTB) which are difficult to diagnose at times. Gold standard for diagnosis of TB is by bacteriological confirmation in specimen, however it is often more difficult in case of EPTB especially in pleural TB as examination of pleural fluid detects AFB in only about 5-10% of cases.'[1] Pleural TB is second most common form of EPTB. 'It typically manifests with abrupt onset of fever, pleuritic chest pain and cough. Sometimes it may present insidiously with fever, weight loss and malaise. In chest radiograph there may be unilateral pleural effusion mostly in right hemithorax. Bilateral disease can occur but only in 10% of cases.'[2] It makes diagnosis more challenging when patient presents with an atypical presentation. Here we present a case of 42 years lady presenting with atypical presentation of tuberculous pleural effusion (TPE) who went through tough and distressing time for her diagnosis and treatment.

II. CASE

A 42 years lady presented in general OPD of B.P. Koirala Institute of Health Sciences, Nepal with only a complaint of dry cough of 5 months duration. No abnormality was detected regarding her vitals, general physical and systemic examinations. There was no history of PTB, Bronchial Asthma or any other systemic illness. The current symptom was developed 5 months back for which she consulted a physician. Her examinations and investigations were normal except ESR which was 50 mm/hr. She was prescribed antibiotics and bronchodilator. Symptom was not relieved so she was referred to higher centre with an impression of anxiety disorder. She went to many centers where she was investigated thoroughly. HRCT chest showed bilateral minimal pleural effusion with basal atelectasis while pulmonary function test showed small airway obstruction. She was prescribed Inhaled corticosteroid, anticholinergic and cough suppressant. Meanwhile cardiac and psychiatric consultations were also done. Though cardiac cause was ruled out, a diagnosis of conversion disorder was made and anxiolytic and anti-depressant were added in her prescription. There was no improvement with the above management even after one and half months, so she again sought help from another medical college. Unfortunately, the management remained similar with addition of diuretic and leukotriene inhibitor. Not getting relieved, she presented herself in our hospital. Patient was counseled for the need of pleural biopsy but she refused. Hence, USG guided thoracocentesis was performed which yield straw coloured pleural fluid from right hemi thorax. Analysis showed an exudative effusion with normal glucose level but strikingly no lymphocytic predominance. Gram's stain and staining for AFB were negative. ADA of the fluid was 120U/L. On the basis of previous CT scan finding and pleural fluid analysis, anti-tubercular therapy (ATT) was initiated. Patient showed drastic reduction in her symptoms within 2 weeks of ATT and was completely symptom free by the end of 1 month. She has completed 6 months ATT course by the time of case reporting.



Fig. 1: Chest radiograph



TOWARDS LIFE

PRIVATE LIMITED

An ISO 9001:2008 Certified Hospital

Department of Radiology & Imaging

NEPALI DATE: 2074-02-25

AGE/SEX: 42Y/F

NAME: Mrs.

ADDRESS:

CLINICAL DIAGNOSIS:

EXAMINATION REQUESTED: HRCT CHEST

REFERRED BY: Dr.

CT-SCAN REPORT

HRCT of chest :

Bilateral minimum pleural effusion seen. Bilateral basal atelectasis seen. Rest of both lungs appear normal in attenuation and parenchymal architecture. No intra lobular or interlobular septal thickening seen. No bronchiectatic changes seen on either side. No mass lesion seen on either side. Trachea and major bronchi are normal.

No enlarged hilar or mediastinal lymph nodes seen.

No chest wall lesion seen.

IMPRESSION:

Bilateral minimum pleural effusion with bilateral basal atelectasis

MBBS, MD (Radiodiagnosis)

Fig.2: HRCT chest report

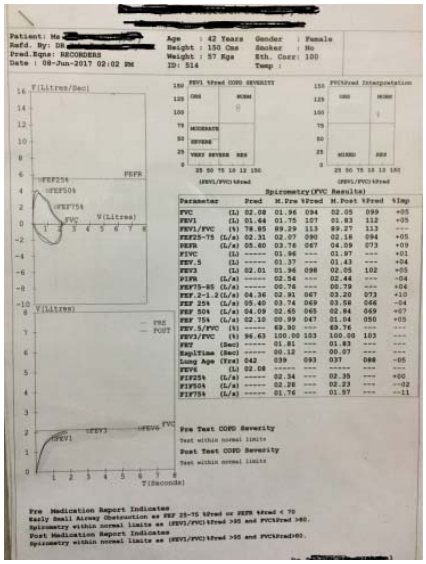


Fig. 3: Spirometry report

III. DISCUSSION

'Typical presentation of pleural TB is abrupt onset of fever, pleuritic chest pain and cough. There may be unilateral pleural effusion mostly in right hemithorax. Bilateral disease is rare.'[2]A study done by Bansal P et al in 250 patients of TPE in Jaipur showed the similar findings and need of demonstration of M tuberculosis in either pleural fluid or pleural biopsy specimens for definitive diagnosis.[3] In contrast, our patient had only dry cough with bilateral minimal pleural effusion. Pleural biopsy is not easily available in our part of the world. In addition to the suggestive clinical history and examination, 'pleural fluid analysis and elevated adenosine deaminase (ADA) can be implemented in the diagnosis of TPE.'[3,4] Vald'es et al have stated that 'in young patients from population of high prevalence of TB, plural fluid ADA >35U/L alone has 99% accuracy in diagnosing TPE'[5]. It supports the diagnostic scenario of our patient. A systematic review and meta-analysis performed to determine accuracy and usefulness of ADA in diagnosing tuberculosis pleurisy demonstrated that the sensitivity and specificity of ADA are high especially when ADA ≥50 (U/L).[6] Another meta-analysis conducted in China also has a similar conclusion.[7] Zhai K et al suggests to 'initiate anti-tuberculosis chemotherapy even in a presumptive diagnosis of TPE in a country with a moderate or high incidence of tuberculosis.'[8] In our case, spirometry report suggesting small airway obstruction might have mislead the diagnosis resulting in the use of ICS and bronchodilators in multiple centres. Importantly, minimal pleural effusion was under looked. If timely analysis was done, diagnosis and management would have been prompt and effective causing less distress to the patient. Despite atypical presentation, unusual pleural fluid analysis and inability to perform biopsy, we were able to diagnose TPE in our case on the basis of pleural fluid ADA >50U/L which is sufficient in patient from high TB prevalence areas.[5-8]

IV. CONCLUSION

In our part of the world with high prevalence of TB, respiratory symptoms which do not resolve by general management warrant a high index of suspicion for detailed investigations. In absence of advanced diagnostic tests like PCR, thoracoscopy and pleural biopsy, pleural fluid analysis and ADA serve as good diagnostic tools and should be capitalized for the diagnosis of TPE.

REFERENCE

[1] National Tuberculosis Program Nepal. Annual report 2073/74. Ministry of Health and population; 2018.

[2] Goldman L, Schafer AI. Goldman-cecil Medicine. 25th ed. Elsevier: Rajkamal electric press, 2016: 2034.

[3] Bansal P, Kansal HM, Goyal S, Bansal P.Tuberculous Pleural Effusion: A study on 250 patients. J Med Sci Research. 2010;1(2):46-49.

[4] Mishra DR, Bhatta N, Koirala P, Ghimire RH, Bista B, Shah N. Study of the clinical characteristics and outcomes of exudative pleural effusion: improving clinical decision making in resource limited setting. SAARC J TUBER LUNG DIS HIV/AIDS, 2017; XIV(1): 33-39.

[5] Valde's L, Jose MES, Pose A, Gude F, Gonza´lez-Barcala FJ, A´lvarez-Doban'o JM, Sahn SA. Diagnosing tuberculous pleural effusion using clinical data and pleural fluid analysis A study of patients less than 40 years-old in an area with a high incidence of tuberculosis. Respiratory Medicine 2010; 104: 1211-1217.

[6] Gui X, Xiao H. Diagnosis of tuberculosis pleurisy with adenosine deaminase (ADA): a systematic review and meta-analysis. Int J ClinExp Med 2014;7(10):3126-3135.

[7] Liang QL, Shi HZ, Wang K, Qin SM, Qin XJ. Diagnostic accuracy of adenosine deaminase in tuberculous pleurisy: A meta-analysis. Respiratory Medicine 2008; 102: 744–754.

[8] Zhai K, Lu Y, Shi HZ. Tuberculous pleural effusion. J Thorac Dis. 2016 Jul; 8(7): E486–E494.

★★★