

Delayed diagnosis of Tuberculosis Patient in high burden settings: A Case Report

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Abstract

Background: Despite the era of science and technology diagnosis of TB has been remained major concern in developing countries. Appearance of manifestations makes the diagnosis much simple however few symptoms overlap. A well trained physician with sufficient experience in pulmonology can trigger in early diagnosis of asymptomatic smear negative TB cases. Aim of this report was to present a TB patient misdiagnosed and wrongly treated for certain time period which increased the complications on proper medication when reached tertiary care settings. This report is about a male patient of age 76 years, seeking treatment from a tertiary care hospital. Temporary treatment continued till October 2017 when there was severe weight loss and patient started to expectorate. Bronchial washing then helped to reveal diagnosis of TB. In conclusion the system gaps still persist even in the presence of well-equipped diagnostic facilities for TB. Systematic gaps like smear negativity due to certain factors are also beyond the control. Misdiagnosis of even single patient may lead to serious complications lately as is apparent in current report.

Key Words: Diagnosis; Tuberculosis; X-ray; GeneXpert

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Introduction

Tuberculosis (TB) is a chronic granulomatous infection and has been remained as a notorious disease since ancient times. This contagious infection is caused by Mycobacterium tuberculosis complex (MTBC) which presently infects two billion people globally and survived from 70,000 years.¹ It was only in 1882 when Robert Koch discovered the causative agent however its control is still a dilemma. According to current report of World Health Organization (WHO) Pakistan is amongst the top 20 highest TB burden countries which bear 87% of global TB load. Further 525 thousand new TB cases with an incidence rate of 267 and mortality rate of 28.1/100000 were reported in 2017 by WHO.²

Despite the era of science and technology diagnosis of TB has been remained major concern in developing countries. ZiehlNeelsen (ZN) staining is the basic diagnostic test used for screening of TB in these countries which has a limited sensitivity of 55-70% in different studies.^{3,4} Fluorescent microscopy (FM) on the other hand uses auramine stain replacing the ZN

method with and additional sensitivity of around 5-6% still missing the target cases.³ Introduction of GeneXpert assay further upgraded the detection of MTBC and rifampicin resistance within two hours however sensitivity for smear negative patients is still compromised in smear negative TB cases.⁵ Culture of MTBC is still a gold standard but takes long in diagnosis due to slow growing organism.

Typical sign and symptoms of pulmonary TB patients include low grade fever, fatigue, cough, expectoration, anorexia, weight loss, chest pain, breathlessness and hemoptysis respectively and danced according to progression of disease.⁶ Thus the appearance of manifestations makes the diagnosis much simple however few symptoms overlap and mimic the other deadly diseases like lung cancer. On the other hand patients may have active TB however fail to present the common signs and symptoms for number of weeks and sustain infection due to use of broad spectrum antibiotics result in delaying the definite diagnosis and proper treatment.⁷

A well trained physician with sufficient experience in

pulmonology can trigger in early diagnosis of asymptomatic smear negative TB cases. Although TB has been considered as the disease of poverty but now it has emerged in white collar and immuno-comprised classes also. Most of the Pakistani people initially attend formal medical practitioner in case of illness therefore Government initiated the public private mix model long ago in 2003 to enhance the case detection rate and early treatment.⁸

Despite high TB burden, increased awareness, elevated diagnostic facilities and special trainings of healthcare staff, TB cases may escape and misdiagnosed for a certain period is a big dilemma. Present case report is aimed to present a TB patient misdiagnosed and wrongly treated for certain time period which increased the complications on proper medication when reached tertiary care settings.

Case Presentation

This report is about a male patient of age 76 years, seeking treatment from a tertiary care hospital. It was in June 2016 when the households of case observed slight gradual weight loss with epigastric pain like symptoms with complication of heated hand and feet. As the patient was already suffering from chronic asthma therefore light cough without expectoration remained unnoticed. After that in November 2016 the patient was undergone a surgery of inguinal hernia. Before surgery various diagnosis were acquired including Chest X-ray with presentations of bilateral hilar vascular prominence and no active lung lesions though clinical correlation was suggested in report. Most of the other reports like, colonoscopy test, liver function tests, lipid profile, kidney function tests and complete blood counts were normal with hemoglobin level of 12.9 g/dl. Patient was prescribed routine antibiotics and successfully discharged from a well-known private hospital.

After discharge from hospital a marked weight loss was observed with on and off cold sweats and fever. Clinicians used to relate the situation with aging factor and used to prescribe analgesics and different antibiotics for timely relief. Hence temporary treatment continued till October 2017 when there was severe weight loss and patient started to expectorate blood streaked sputum hence smear remained negative while patient was admitted in a tertiary care hospital. Fresh X-ray shown mild infiltration in middle lobe of left lung, hemoglobin dropped to 10 g/dl thus referred for bronchoscopy.

Bronchial washing was processed and positive for ZiehlNeelsen (ZN) smear for acid fast bacilli (AFB), culture for MTB and GeneXpert for MTBC. Thus anti tubercle treatment (ATT) was started. Ultimately patient achieved final diagnosis but problems persist

in the form of side effects and patient complained irritation, gastric problems and restlessness. In December 2017 condition became more miserable when patient started to pass black stools, and hemoglobin level dropped to 4g/dl. Patient was re-admitted in same tertiary care hospital and bronchoscopy revealed duodenal ulcer and blood tests showed elevated levels total and conjugated bilirubin so ATT was stopped for time being, blood was transfused and patient was sent to home.

After a gap of around two weeks patient was restarted with low doses of ATT and monitored for liver function tests continuously which became normal in June 2018. In September 2018 patient was assessed by pulmonologist, fresh X-ray, ZN smear and culture reports were observed and declared as cured from TB now.

Patient's Perspective: Although patient has cured now but became handicap and dependent on family members for movement away from bed. According to patient when he was suffering from disease and not recovered even after use of broad spectrum antibiotics and supportive medicine remained nervous and unhappy. That unsatisfactory condition lied until definite diagnosis and improvement starts. On inquiring the case from households of patients they responded about delayed diagnosis may occur due to impatience and curiosity of attendants for the patients to cure as early as possible may pressurize clinicians to decide earlier without proper investigation for the sake of their virtual strength.

Discussion

Timely diagnosis and early treatment of TB patients are the main pillars to prevent further transmission of MTBC. Clues that need opinion regarding diagnosis of TB must be addressed promptly by physicians where the country is among one of the highest TB burden region. Lack of accurate and rapid diagnostic facilities at each point has been blamed in timely decision making as it increases costs and visits and eventually results in loss to follow up.⁹

Symptomatology is an important factor to provide line of diagnosis as is shown in present report. An estimated 2 billion people have latent TB, who do not develop symptoms but can turn into active TB.² Diagnostic facilities on the other hand are loaded with modest GeneXpert MTB Rif Assay along smear and culture with raised number of diagnostic facilities in the country.¹⁰ A study has claimed individuals having at least one TB symptom and able to diagnose 36% patients using GeneXpert.⁹ Similarly a study based on active case detection among contacts of drug resistant TB patients reported 2.5% contacts also suffering from TB.¹¹

Approach of general medical practitioner to probe in TB diagnosis is merely based on experience and exposure to more patients. Presently the patient was visiting family physicians regularly but remained undiagnosed for a long time is evident to agree with a fifteen years old study that reported many misunderstandings about transmission and diagnosis of TB among family physicians.¹² Tuberculosis lacks its importance in curriculum of medical professionals in the country however National TB Control Program has design a training module for clinicians, furthermore the institution offer many trainings mandatory for healthcare professionals working in public sector.¹³

Impatience and curiosity to cure at it earliest among attendants of aged patients sometimes may be the reason of missing long term investigations as was case in current report. Medical practitioners mostly observe the curiosity of attendants instead the clinical picture and try to cope with the situation without referring the patient to diagnostic facility. Private Doctors are more responsible in this regard as they try to maintain their virtual strength as is shown by a study that reported great TB knowledge gap among private and public sector healthcare providers.⁸

Detection of active TB among pulmonary patients is a key component of NTP. At times however even in the presence of clinical profile, AFB smears remain negative. In such conditions induced sputum or bronchial washings are preferred for diagnosis and later is found to be able to diagnose 78.3% cases of AFB smear negative TB.¹⁴ Inability of patients to expectorate, induction of sputum from effected areas of lungs and requirement of as high number of bacilli as 5000/ml; are the factors related to smear negativity of each specimen,⁷ however chest radiograph and clinical picture of patient provide important clue for each case to proceed further.¹⁵ Present case report is also in concordant with above studies.

Present report has shown the importance and strength of training of family physicians and general medical practitioners for diagnosis and management of tuberculosis. Although NTP has launched different training programs at times for doctors along with provision of different manuals regarding management of TB cases,¹³ but effort seems minor with respect to the problem and disease burden. Moreover medical professionals must also remain vigilant considering tricky issue of TB in the country.

Conclusively the system gaps still persist even in the presence of well-equipped diagnostic facilities for TB. Systematic gaps like smear negativity due to certain factors are also beyond the control. Misdiagnosis of even single patient may lead to serious complications lately as is apparent in current report.

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