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Rare Case Scenarios in DR TB

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Abstract: *Worldwide Drug Resistant Tuberculosis is on the rise due to increase in detection and noncompliance of Anti tuberculosis treatment. The following abstract describes rare sites of presentation of Drug Resistant (DR) tuberculosis (TB). One case presented with Sternal abscess which on FNAC (Fine Needle Aspiration Cytology) for CBNAAT (Catridge Based Nucleic Acid Amplification Test) showed MTB (mycobacterium tuberculosis detected) which was Rifampicin Resistant. One case presented with right hand abscess with loss of appetite and loss of weight. FNAC of contents of the abscess showed MTB resistant to Rifampicin, Isoniazid, pyrazinamide, ethionamide, ofloxacin and patient was treated as XDR TB. Similarly 6 cases with rare presentation of DR TB were identified and are briefed in this case series.*

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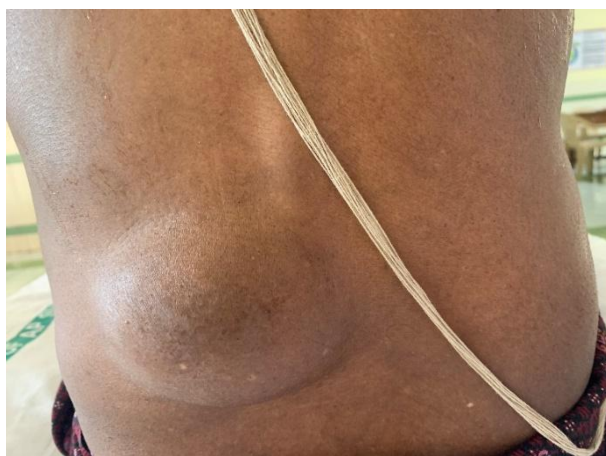
I. Introduction

Worldwide, TB is one of the top 10 causes of death and the leading cause from a single infectious agent (3). As per the estimates approximately one-third of the world's population is infected with Mycobacterium tuberculosis, the microbe that causes TB, and ~10% of infected individuals will develop active TB at some point in their lives. For individuals also infected with HIV, the likelihood of developing active TB is much higher.

II. Case Reports:

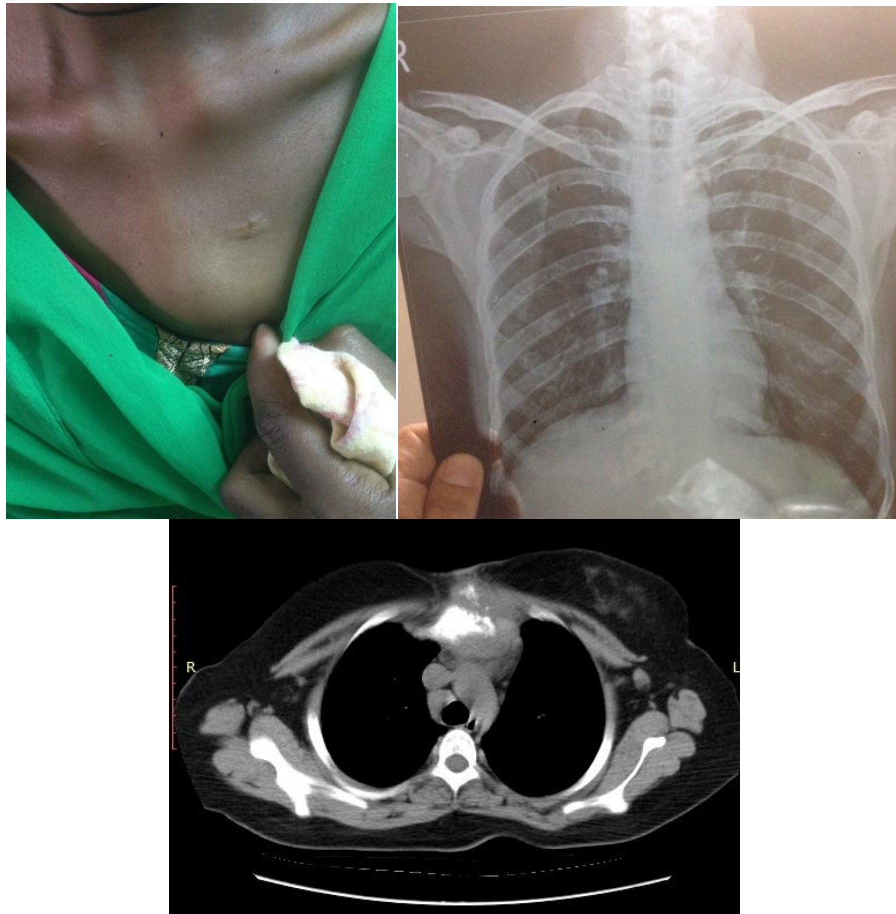
Case 1 - LUMBAR ABSCESS WITH MDR TB

A 37 year old male Patient came with complaints of swelling on left side of the back for 2 months. Swelling was gradually progressive in nature and painless. 3 years ago he had laparoscopic surgery for gastrointestinal tuberculosis and used ATT for 8 months. He smoked about 3-5 cigarettes/day and occasionally consumed alcohol. Examination revealed a fluctuant swelling of 10cmx5cm size present in left lumbar region suggestive of an abscess. FNAC of the abscess was done and first line LPA showed MTB resistant to Isoniazid, Rifampicin and Streptomycin. Audiogram of the patient showed mild bilateral sensorineural hearing loss and patient was treated with conventional regimen with advice to follow up for every 2 months in view of SNHL (Sensorineural Hearing Loss).



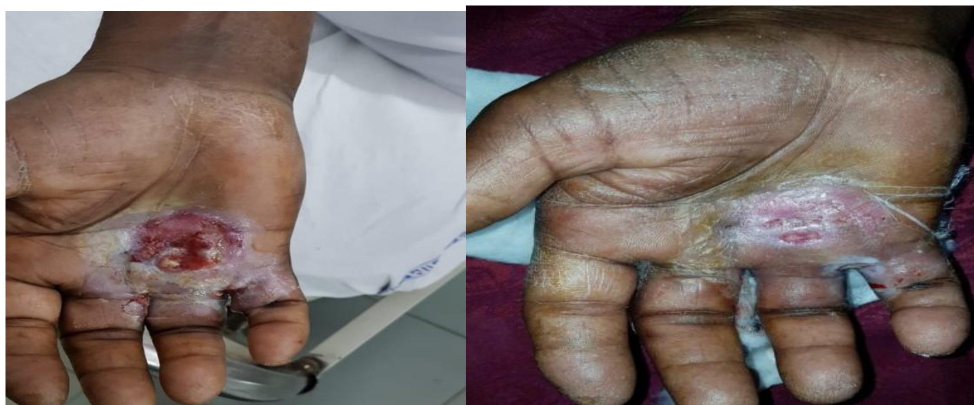
Case 2 -STERNAL ABSCESS WITH MDR TB

A 16 year old female patient came with complaints of cough and hemoptysis for 2 weeks and swelling in mid-sternum. She had loss of appetite, loss of weight and no past history of pulmonary tuberculosis. Ultrasound scan was suggestive of a cold abscess. CECT of chest showed chronic osteomyelitis of the manubrium sternum with sinus and abscess formation. FNAC of the swelling showed rifampicin resistant MTB on CB-NAAT. Patient was started on Conventional MDR regimen.



Case 3 - HAND ABSCESS WITH XDR TB

A 33 year old male patient came with chief complaint of painless swelling over right hand. Examination showed left supraclavicular lymph node. One week later swelling ulcerated. His chest x ray was completely normal. FNAC of left supraclavicular lymph node revealed features suggestive of Koch's etiology. Pus was aspirated from Right hand abscess and sent for CBNAAT which showed Rifampicin Resistant MTB. MGIT panel showed resistance to Isoniazid, streptomycin, rifampicin, pyrazinamide, Ethionamide, ofloxacin, ciprofloxacin and levofloxacin. Patient was diagnosed as XDR EPTB.



Case 4 - MDR TB WITH CML

A 31 year old male patient came with chief complaints of cough with expectoration, fever, shortness of breath since 3 months. He was diagnosed with chronic myeloid leukaemia and has been on chemotherapy with hydroxy urea for the past 10 years. There was no past history of PTB. Patient was diagnosed as MDR TB with Rifampicin resistance and he was treated with conventional MDR regimen. His blood picture showed Hb of 8.2 g/dl with a total count of 320,000/mm3 and presence of abnormal cells. LFTs were normal. After 6 months of treatment the patient started complaining of diminished vision probably due to Ethambutol induced and patient was taken off from ethambutol and he improved later on.

Case 5 - PLHA WITH PRIMARY XDR TB

A 43-year-old male Patient came with chief complaints of cough with expectoration, shortness of breath and fever for 7 months. The patient was diagnosed with HIV and has been on ART for the past 4 months. Patient had no past history or contact history of TB. Sputum for CBNAAT showed rifampicin resistance. Second line LPA was done which showed resistance to flouroquinolones and kanamycin. The patient was diagnosed as XDR TB and treated with Bedaquiline containing XDR TB regimen.

Case 6- XDR TB WITH TYPE 1 DIABETES MELLITUS

A 22-year-old male patient came with chief complaints of cough with expectoration and fever for 1 year. He also complained of loss of appetite and loss of weight. He was diagnosed with Type 1 DM and has been on insulin for the past 11 years. He had past history of PTB. On Auscultation he had crepitations in Right Supra scapular and upper interscapular areas. Sputum for CBNAAT showed Rifampicin resistance and second line LPA showed resistance to fluoroquinolones and second line injectables. Patient was diagnosed as XDR TB. He was started on XDR TB regimen and he complained of ATT intolerance (Neuropathy). Isoniazid was stopped and other drugs were continued. Patient's condition improved and he was discharged with advice to continue the rest of the regimen.

III. Discussion

With the increase in incidence of DR TB as a result of increase in detection rate and high burden of the disease among the developing countries like India, there should be a high index of suspicion in diagnosing DR TB.

In the first case the patient developed a lumbar abscess. On high index of suspicion and irrespective of usage of ATT, FNAC from abscess was done which on culture showed MTB resistant to Isoniazid, Rifampicin and streptomycin. He was started on conventional MDR regimen and was asked to follow up for every 2 months in view of SNHL. Patient is currently continuing the regimen with improvement in his constitutional symptoms and decrease in size of the abscess.

In the second case a 16 year old female came with a swelling over the sternum and left supra clavicular lymph node. FNAC from sternal abscess for CBNAAT showed Rifampicin resistant MTB and patient was started on conventional MDR Regimen. Tuberculous sternal involvement is seen in approximately 1% of all skeletal tuberculosis cases and approximately 0.3% of all types of tuberculosis cases. This case shows that primary sternal tuberculosis can present as a vague anterior chest wall swelling of a very long duration and can remain unnoticed due to the lack of any signs and symptoms(1). CECT showed osteomyelitis of the sternum and primary tuberculous osteomyelitis of the sternum is a rare form of extrapulmonary tuberculosis.

In the third case a 33 year old male patient came with hand abscess due to TB. His drug resistance profile showed XDR TB and patient was started on XDR TB regimen. Skin tuberculosis, a form of the extrapulmonary tuberculosis, occurs in 1% of all tuberculosis cases(2). The possibility of tuberculosis must always be kept in mind in subcutaneous abscess and nodule cases which are non-responsive to non specific therapy and drainage.

In the 4th case a 31 year old male with Chronic Myeloid Leukaemia on chemotherapy with hydroxy urea since 10 years. His sputum sample for CBNAAT showed Rifampicin resistance, suggestive of MDR TB. He was subsequently started on conventional MDR regimen. It is estimated that the Relative Risk of TB disease in patients with hematologic malignancies is 2–40 times than that of the general population(5). Patients with Hematological Malignancies have an underlying immunological deficiency that facilitates the emergence of infections. In this case, the development of PTB in this patient can be attributed to the prolonged use of Hydroxyurea as well as the hematologic malignancy induced impaired Th1 immunological response. Association of CML with TB is not uncommon, however, the prevalence is understandably higher than the general population. Timely institution of ATT while continuing CML therapy is the mode of treatment.

The Fifth case shows a 43 year old male HIV patient on ART for the past 4 months developing XDR TB. The case shows a disturbing and alarming trend in rise of XDR TB especially in PLHA. As per NDRS 2014-16, only 2 primary XDR cases recorded all over India(4). The present case is also a case of Primary XDR

TB with the patient having neither a past history or contact history of TB. This case further reinforces the notion of improved surveillance and better drug delivery efforts in diagnosing and treating TB among PLHA.

In the 6th case, the patient is a 22 year old Type 1 DM who was on insulin for the past 11 years and was diagnosed with XDR-TB. Increased incidence of TB among diabetics has been already reported in a number of studies. DM, being a state of immunosuppression, can significantly increase the odds of developing TB. Thus, young patients diagnosed with Type I DM should be monitored closely to detect and treat TB as early as possible. In addition to early diagnosis, treatment follow ups should also be closely monitored in view of the high risk of developing neuropathy in these patients. DM in itself is a risk factor for developing neuropathy and Isoniazid as part of ATT regimen can add insult to the injury in diabetics as seen in this patient. Subsequently, INH was removed from this patient's regimen and his neuropathic complaints improved.

IV. Conclusion

Drug resistant TB is on the rise and the presentations can be varied from Pulmonary to Extrapulmonary Tuberculosis. XDR TB, especially Primary XDR TB, is an alarming condition which should be promptly diagnosed, treated and followed up to nip the problem in the bud. Patients at risk of immunosuppression either due to DM, HIV or hematologic malignancy must be thoroughly investigated for TB as these patients form a high risk population for contracting Drug resistant TB. In addition to PTB, clinicians should also be watchful of EPTB and be aware of their varied presentations, especially in high endemicity countries. This would help in tackling the problem of DRTB with early diagnosis and timely treatment.

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