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MELIOIDOSIS AND DISSEMINATED TUBERCULOSIS COINFECTION

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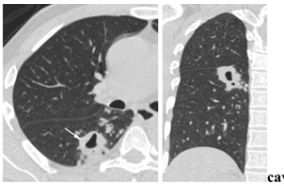
ABSTRACT

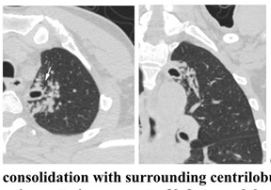
Introduction: Burkholderia pseudomallei is the causative agent Melioidosis. It is Endemic In South East Asian Countries. It is considered as Mimicker Of tuberculosis. Tuberculosis is one of major chronic infectious disease of Southern Asia. The coinfection of both organism is rare and requires prolonged course of treatment. **Case Report-** 49 years old male, Known case of Type 2 Diabetes Mellitus , Periampullary Carcinoma Status post Whipple Procedure came with complaints of fever for 1 month duration. Diagnosed To Have Pulmonary cavitatory Tuberculosis with Melioidosis , later during the course in the hospital had altered sensorium and Neuroimaging revealed CNS Tuberculosis. Patient was Started on ATT and Carbapenam

CASE REPORT

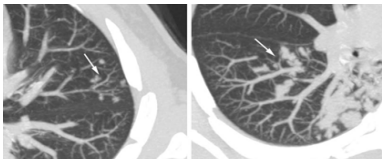
49 years old male came to OPD with complaints of fever for 1month, fever was high grade, associated with chills, intermittent, more in the evening. History of cough without expectoration – 4 days. History of loss of appetite. No history of loss of weight. Patient was febrile on admission, vitals stable and systemic examination unremarkable on admission. Lab investigations showed Total WBC count –12820, ESR -40, CRP – 0.5. LFT, RFT- Normal. Blood and Urine culture-negative. Viral markers – negative. Chest Xray – normal lung fields. Patient had continuous fever spikes, empirically was started on Inj Ceftrioxone and Azithromycin. As the patient had continuous fever spikes, from the history was suspected to have Pulmonary Tuberculosis. HRCT Thorax was done, which showed focal areas of cavitating consolidation with surrounding centrilobular nodules arranged in tree in bud pattern and mild fibrosis seen in the posterior segment of left upper lobe and superior posterobasal segments of right lower lobe.



cavitating consolidation with surrounding centrilobular nodules in superior segment of right lower lobe.

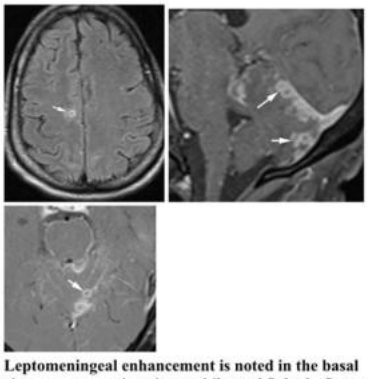


cavitating consolidation with surrounding centrilobular nodules in apicoposterior segment of left upper lobe.



Pulmonology opinion was obtained and Bronchoscopy was done. Bronchoalveolar lavage showed AFB positive, GeneXpert for Mycobacterium tuberculosis positive, BAL (Bronchoalveolar lavage) Line Probe Assay showed Rifampicin and Isoniazid Sensitivity. Patient was started on ATT under DOTS on 10/01/2025. BAL nested PCR showed positive for Burkholderia pseudomallei. BAL Direct Smear for Nocardia, Actinomycosis- negative. BAL fungal culture – negative. Patient started on INJ. MEROPENAM 2gm IV TDS. On day 4 of ATT, Patient became delirious and altered behavior associated with fever, on examination neck stiffness was present. The patient was shifted to MICU. MRI Brain (Plain+Contrast) showed Multiple discrete subcentrimetric ring enhancing leisions of various sizes in infratentorial region and left cerebellar folia, left hippocampus with mild vasogenic edema, Leptomeningeal enhancement in basal cisterns, prepontine cisters, bilateral sylvian fissures (R>L) - suggestive of Intracranial Miliary TB with TB Meningitis.

MRI BRAIN:
Multiple discrete and clustered subcentimetric ring enhancing lesions of varying sizes are noted in the right centrum semi-ovale, along the left cerebellar folia , infra-tentorially along the left tentorium, left hippocampus with adjacent mild surrounding vaso-genic edema.
No e/o blooming noted.



Leptomeningeal enhancement is noted in the basal cisterns, prepontine cistern, bilateral Sylvain fissures (R > L) and insular cisterns (R > L), along the cerebellar folia

CSF analysis showed sugar - 58, protein 145, ADA 23.4. Counts 341. monomorphic predominant - 189. CSF AFB Negative. CSF

GeneXpert positive-Rifampicin sensitive. CSF culture–negative

Patient was continued on ATT, Streptomycin and steroids. Patient did not have any episodes of seizure in hospital stay. No further episodes of altered sensorium noted. Patient was hemodynamically stable hence shifted to ward. During the course in the hospital, Patient developed ATT induced hepatitis, Patient was only continued Tab. Ethambutol, And Tab Levofloxacin was started. Serial LFT monitored, showed resolving trend, Tab Isoniazid was restarted. Patient was treated for Melioidosis in the hospital for 14 days with INJ Meropenam and advised to continue Intensive phase for another 1week followed by continuation phase.

DISCUSSION

Melioidosis is a disease caused by Gram negative, oxidase positive, bipolar stained organism, safety pin appearance – Burkholderia Pseudomallei. It is Diagnosed by standard blood culture, Mac Conkey agar, Selective medium like Ashdown Agar. MALDI TOF also help in accurate diagnosis of the same(1) Mainly reported during wet monsoon seasons. Modes of Transmission include inhalation, excreta, inoculation from contaminated soil through abrasions. Risk factors include Diabetes mellitus, malignancy, steroid therapy, chronic lung disease(2)

It has wide spread manifestation from cutaneous localised abscess, visceral abscess, brain abscess, osteomyelitis, septic arthritis, pulmonary infiltrates, cavities. Its symptoms usually mimics tuberculosis. More than 50 % have pulmonary involvement(3)

In this patient, CT Thorax showed B/L cavitatory lesions. Bronchoscopic aspirate done showed BAL for AFB positive, Genexpert Positive and Burkholderia for nested PCR – positive. Nested PCR is modification of PCR designed to improve to sensitivity and specificity, particularly valuable when bacterial load is low, samples are difficult to culture, rapid diagnosis is crucial. It has a specificity of 98%.

Since the Patient did not have past history TB, Melioidosis as such would have caused cavity or colonised in existing tuberculosis cavity. In this patient main risk factor for the Coinfection are uncontrolled diabetes, Previous periampullary carcinoma. Patient requires prolonged course of Antibiotics in view of coinfection of Melioidosis and Disseminated TB. In This patient, For Melioidosis -Treatment of intensive phase of Carbapenam for 3 weeks, followed by continuation phase with Doxycycline for 3 month, Nearly 1 year ATT for Disseminated TB (CNS TB and pulmonary TB).

CONCLUSION

Patients having risk factors for Melioidosis, presenting with clinical features of tuberculosis, must be thoroughly investigated to rule out Melioidosis and other co – infections with Tuberculosis. Melioidosis and Disseminated TB requires prolonged Antibiotics. The main challenges include compliance to the drugs, drug resistance, relapse, frequent monitoring of blood parameters. Early diagnosis, appropriate antimicrobial therapy and compliance are essential for favourable outcome.

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