



'Tuberculosis in disguise'

Dr Anusha CM ¹, Dr V. Kesavan Nair ²

Corresponding Author: Dr V. Kesavan Nair, Professor, Department of Pulmonary Medicine, Shree Uthradom Thirunal Academy of Medical Sciences, Thiruvananthapuram, Kerala, India.

Copy Right: © 2021 Dr V. Kesavan Nair, this is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Received Date: October 01, 2021

Published date: November 01, 2021

Abstract

We are presenting a case, suggestive of silicosis due to the occupational history, who came in respiratory failure. Radiology was suggestive of metastatic malignancy. Investigations including tumor markers, CT thorax and oncologist's opinion favoured malignancy. However, after repeated sputum examinations being negative, a gastric aspirate yielded AFB. With the radiological picture of multiple nodules, a differential diagnosis of silico tuberculosis was made. Then, a modified anti TB regimen was started in view of deranged liver enzymes. A leucoerythroblastic blood picture was also present. As the general condition was very poor, corticosteroids were added. He developed pneumothorax which was managed with intercostal drainage successfully. He also developed features of honeycombing radiologically. As he tolerated the anti TB drugs, with decrease in his liver enzymes, steroids were tapered, the ATT were continued up to 6 months. At 1 year follow up, he had gained 8 kg weight and was working at his native place. His PFT showed moderate restriction.

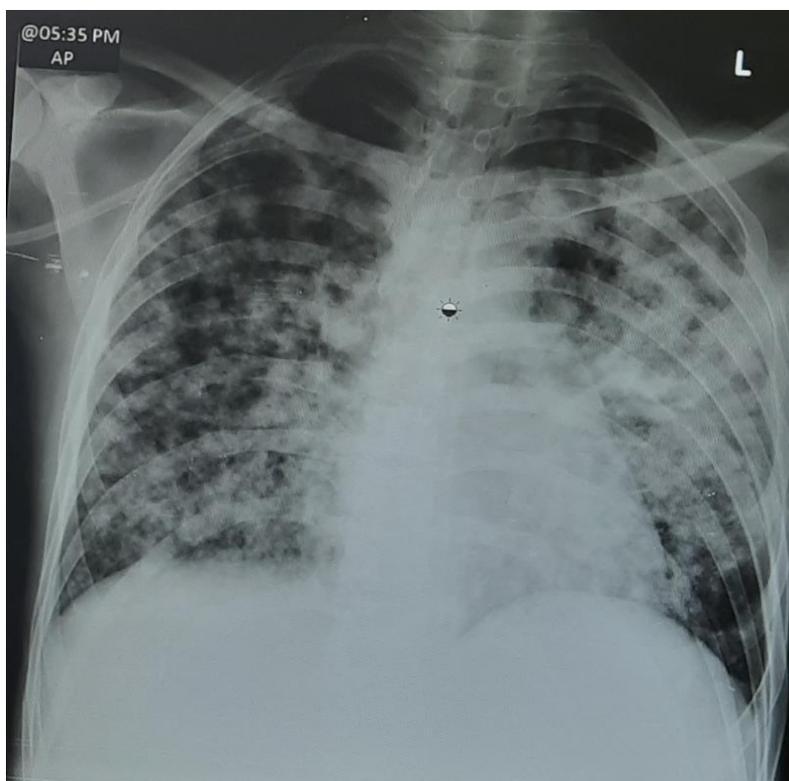
Key Words : Tuberculosis, Malignancy , corticosteroids, honey-comb appearance

Introduction

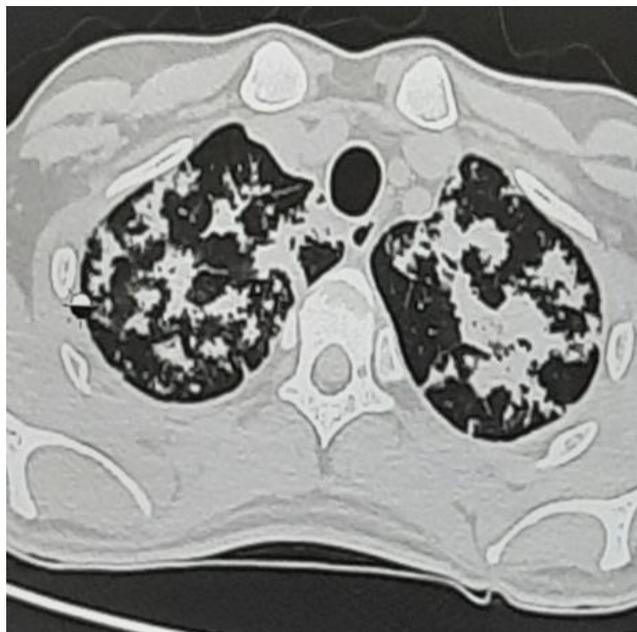
Tuberculosis has varied manifestations like miliary mottling, cavitations, cotton wool opacities, reticulo-nodular opacities, consolidation. Tuberculosis can resemble malignancy in many ways. (1) Here we present a case whose radiological diagnosis was consistent with malignancy / silicosis which however turned out to be positive for tubercle bacilli and on anti-tubercular medications, patient showed excellent response.

Results

A 35-year-old Keralite male working in a sand -blasting and ceramics unit in Gujarat for 7 years came to the casualty 10 days after treatment in a hospital near his workplace. He was febrile, thin-built and was in respiratory distress. Routine blood examination showed Leukoerythroblastic blood picture and raised ESR of 90 mm/hr. Liver function tests revealed elevated liver enzymes and low albumin(Reports needed). Chest X-ray showed soft cotton wool exudates suggestive of metastases in both lungs. (Fig.1).



ABG showed moderate hypoxemia and he was admitted in intensive care unit and started on antibiotics, nebulization, oxygen and intermittent non -invasive ventilation which relieved his distress. Our differential diagnoses were bronchogenic carcinoma, metastases, tuberculosis and silicosis. CT chest was done (Fig 2)



showing cotton wool shadows bilaterally. Oncologist opined in favour of malignancy based on the radiology and the borderline tumour markers. Sputum examination for acid fast bacilli was repeatedly negative, as also CBNAAT. Sputum cytology for malignant cells and fungus were also negative. USG abdomen did not reveal any significant abnormality. As he was not coughing much, gastric aspiration was done and one of the samples came positive for acid fast bacilli. The diagnosis became limited to silicosis/ silico-tuberculosis. However, antitubercular treatment was started with a modified regimen including Levofloxacin, INH, Ethambutol and avoiding Rifampicin and Pyrazinamide. Steroids were added as the general condition of the patient was deteriorating.



Later patient developed right sided pneumothorax, intercostal tube was inserted and the lung expanded slowly and the tube was removed. His CT thorax repeated at this time showed small cystic lesions suggestive of honey combing in middle and lower lobes with interstitial thickening (Fig 3).

The patient tolerated the drugs, his general condition steadily improved, the liver function tests returned to normal slowly but Rifampicin and Pyrazinamide were not added. He was discharged after 3 weeks on Anti-tuberculous drugs and Deflazacort.

Clinical and radiological assessment at 6 weeks showed improvement. Pulmonary function test revealed severe restrictive lung defect (Fig.4).



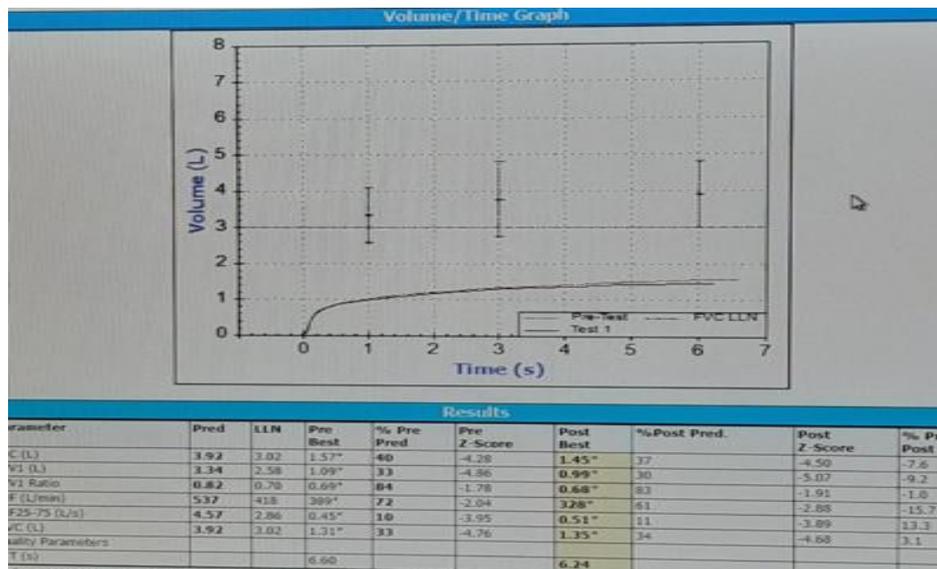
Patient improved and the steroid was tapered and stopped after 3 months and the anti-tuberculous drugs were stopped at 6 months. At 1 year of follow up he had gained 8 kg weight, was working in his native place in a different job. His PFT showed moderate restriction though his work was not hampered. His later X-rays were not suggestive of either malignancy or silicosis.

Discussion

Tuberculosis and malignancy have been misdiagnosed for centuries.(2) In most of the cases of the latter, the radiological features have been parenchymal mass with spiculated margins, nodular lesions, and chest wall invasion.(3)

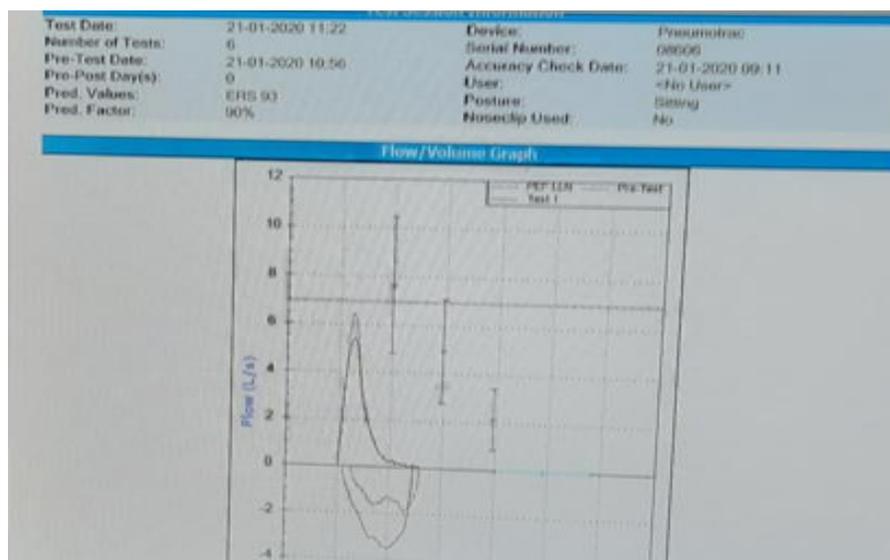


Pitlik et al. in 1984, reported about 26 cases out of more than 70,000 patients ,suspected to be malignancy disproved to be tuberculosis by bacteriological confirmation.(4) In his case series common presentations were multilobar infiltration, upper lobar infiltrates and pleural effusion. They reported a spectrum of disease in those patients who had active tuberculosis masquerading as cancer which were missed even in countries with advanced medical technologies. (10,11,1)



Rodriguez et.al (5) conducted a retrospective analysis in 2908 patients who were presumed to have lung cancer but turned out to have pulmonary infection.(7) Prytz et al. reported about 91 patients with presumptive diagnosis of lung cancer, who underwent thoracotomy, but later proved to have pulmonary

TB.2 In a study done in Taiwan (6), 53 patients in a TB endemic area, with a presumptive diagnosis of pulmonary tuberculosis were included. They had clinical features like nodules, masses, cavities, consolidation. They were subjected to early intervention and pulmonary tuberculosis was ruled out.(8) Thus the converse is also true. A good and adequate evaluation is needed to rule in/out pulmonary tuberculosis.(9) A delay in the correct diagnosis of tuberculosis or malignancy may prove detrimental for the patient sometimes ending up in a fatal outcome.



In our case, the initial suspicion was of malignancy with metastases. Microbiological confirmation of tuberculosis was made by gastric aspirate as repeated sputum samples were negative, which included microscopy and TruNAAT. Anti-tubercular medications were started using a modified regimen owing to deranged liver enzymes and hematological abnormalities. The radiological picture was not typical of miliary tuberculosis. The presence of multiple nodules suggestive of metastases, and the occupational history of working in ceramic and sand blasting unit in a patient who was in respiratory failure confused the diagnosis. Steroids were added to anti tubercular regimen as the general condition was poor. Pneumothorax could have resulted from the multiple small cysts in both the lungs mimicking honey-combing. Steroids could also have contributed to it. Honey comb like cysts is unusual in pulmonary tuberculosis. The anti-tuberculosis drugs used were Levofloxacin, INH, Ethambutol- 2 bactericidal drugs (Levofloxacin and INH) and Ethambutol, a bacteriostatic drug which helps in preventing the emergence of drug resistant mutants. Hence, the good clinical and radiological response. On searching the literature, it was found that the common presentations of malignancy mimicking tuberculosis were cavitation, consolidation, parenchymal mass, but in our case x-ray was showing multiple nodules suggestive of metastases mimicking tuberculosis which is very rare.



Take home points :

1. Pulmonary tuberculosis is almost never an emergency!
 2. Because of his occupation, Silicosis was thought of but it presents with smaller nodules and will not show regression as in this case.
 3. Adult Pulmonary tuberculosis diagnosed by gastric aspirate is very rare.? Atypical tuberculosis.
 4. Only INH, Ethambutol and Levofloxacin were used as ATT.
 5. Chest X ray is more suggestive of metastases lung and not typical of Miliary or nodular tuberculosis.
 6. Sudden development of 'honey combing' is unusual in malignancy or even in IPF.
 7. Completed 6 months of ATT using a modified regimen without Rifampicin or Pyrazinamide which are the prime drugs in an anti-tuberculous regimen though the lesions were extensive.
- Now the patient is ambulant, with mild exertional dyspnea only.

Reference

1. Shaw RH, Stuart A, Greenland M, et al. Heterologous prime-boost COVID-19 vaccination: initial reactogenicity data. *Lancet* 2021; 397: 2043-2046.
2. GroB R, Zaroni M, Sei A. Heterologous ChAdOx1 nCoV-19 and BNT162b2 prime-boost vaccination elicit potent neutralizing antibody responses and T cell reactivity. *medRxiv* 2021.
3. Kunal S, Sakthivel P, Gupta N, et al. Mix and match COVID-19 vaccines: potential benefit and perspective from India. *Postgrad Med J* 2021. DOI: 10.1136/postgradmedj-2021-140648
4. Jimenez D. Pharmaceutical Technology Newsletter. August 2, 2021. COVID-19 vaccine mixing: has AZ/Pfizer emerged as a winning combo? Available at: [http://www.pharmaceutical-technology.com/features; pharmaceutical-technology.com/features/covid-19-vaccine-mixing-astrazeneca-pfizer](http://www.pharmaceutical-technology.com/features/pharmaceutical-technology.com/features/covid-19-vaccine-mixing-astrazeneca-pfizer) (accessed on August 31, 2021).
5. Grant K. MEDPAGETODAY. July 22, 2021. Countries move ahead with mix-and-match COVID vaccines: Germany, Canada, and others promote heterologous approach in the face of supply challenges. Available at: <https://www.medpagetoday.com/.../Exclusives> (accessed on August 31, 2021).
6. Reuters. Healthcare and Pharmaceuticals. July 14, 2021. WHO warns individuals against mixing and matching COVID vaccines? Available at: <https://www.reuters.com/healthcare-pharmaceuticals/w...> (accessed on July 31, 2021).
7. FRANCE 24. July 13, 2021. Thailand defends COVID vaccine “mix-and-match” after WHO warning. Available at: <https://www.france24.com/France24/Live> (accessed on July 31, 2021).
8. Hwang JK, Zhang T, Wang AZ, Li Z. COVID-19 vaccines for patients with cancer: benefit likely outweigh risks. *Journal of Hematology and Oncology* 2021; 14: 38. 11 pages. DOI: <https://doi.org/10.1186/s13045-021-01046-w>