Foe incognito

Dr. Tanmay Biswas;
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- A 47 years male Bank clerk resident of Howrah admitted with

- **c/o cough** with **scanty expectoration** for one and half months
- **Low grade intermittent evening rise of temparature .**

- **Shortness of breath** for 6 days.
- **weight loss >10% (3kgs)**

- No history of high risk behaviour
- No h/o rash, joint pain, diarrhea, or burning micturation.
- No travel history in recent days.
- No past history or family history of TB
- Non diabetic, non-hypertensive.

- Known case of Hypothyroidism.
  (on levothyroxine 75mcg/day)

- He was admitted at private Hospital for 3 days and received Piperacillin+ tazobactum (4.5grm) and Azithromycin.

On Examination....

- Blood pressure 118/70mmHg
- Pulse 98bpm; regular
- Mild pallor
- Clubbing absent
- Icterus absent
- Lymph nodes are not palpable.
- Neck veins : not engroged.

Respiratory system....

- No abnormalities detected on inspection and palpation.
- Bilateral wheeze (+) , more in right side of chest.

Abdomen ....

- Liver enlarged in 3 cms below the right costal margin.
- Spleen just palpable
- No superficial veins
- No ascites

- **CVS**: NAD
- **CNS**: no signs of focal neurological deficit,
  Neck rigidity absent

Complete hemogram

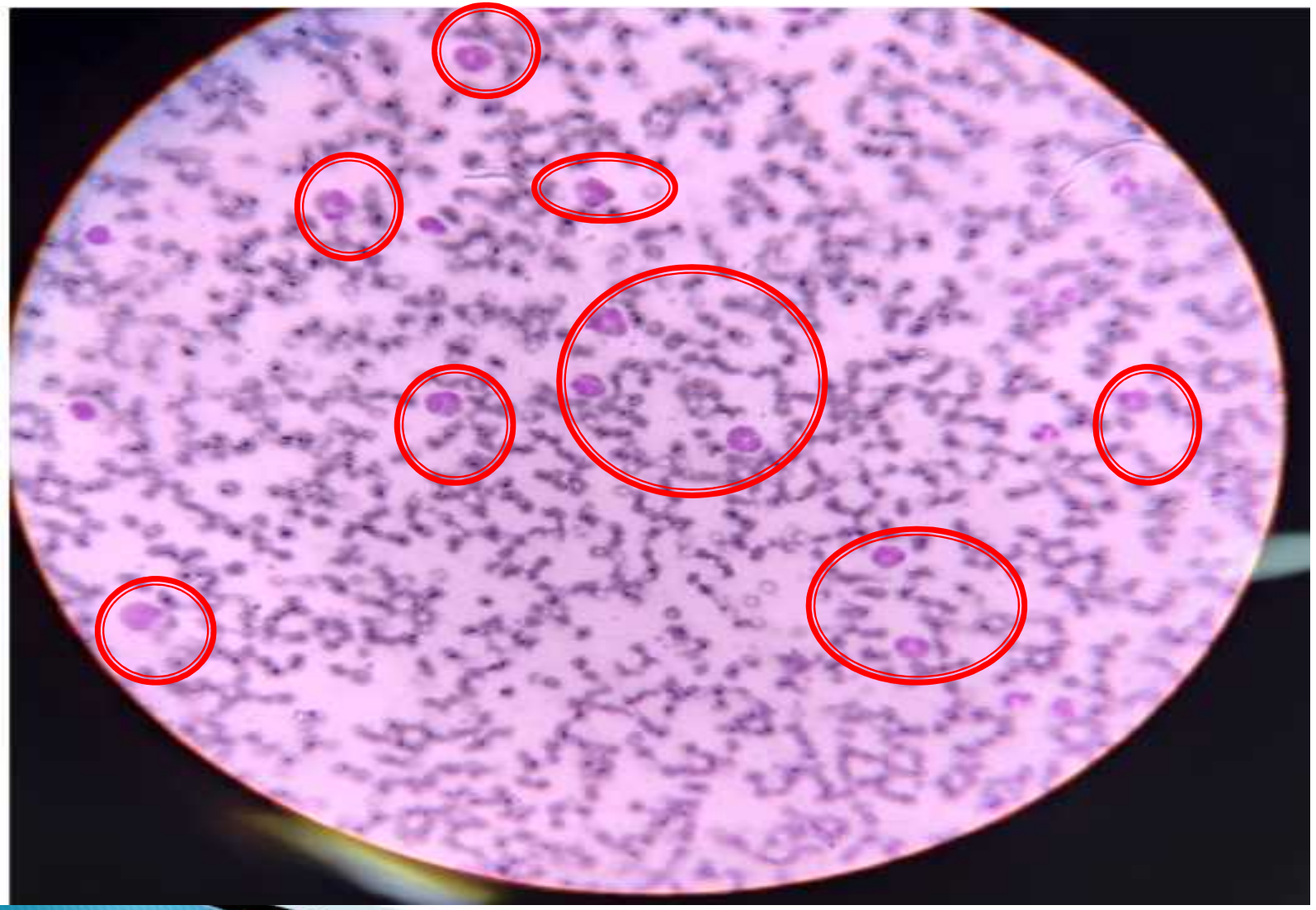
- WBC : 23900/ µL
- Diff. count:

  N-23% L-10% E-65% B-0%

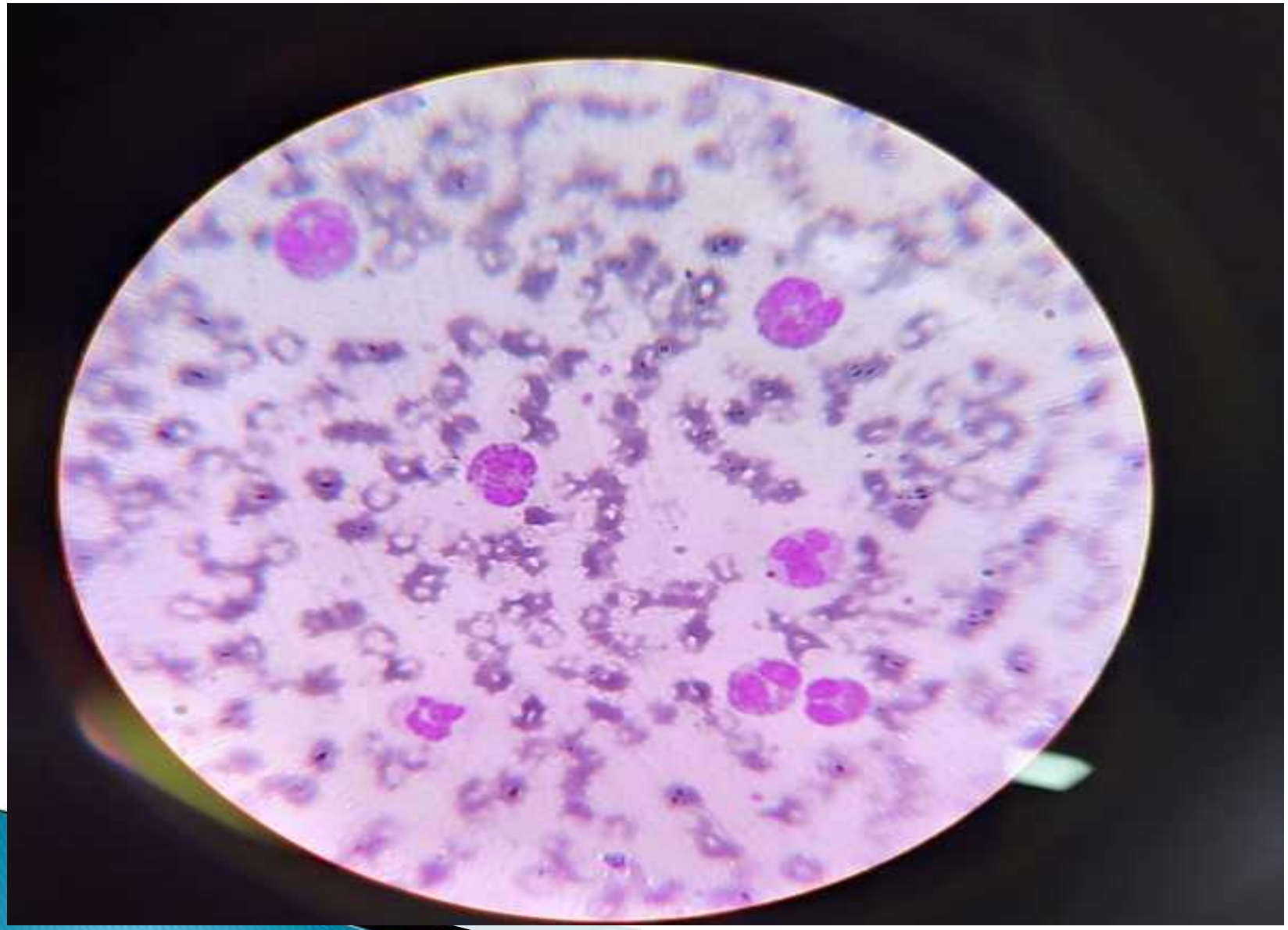
  M-02%
- AEC : 15535/µL (50-500)

- RBC: 4.9 million cells / µL
- Hb : 13 gm/dl
- Platelets :2.1 lakh /µL
- Normocytic normochromic

40X



100X



- **Liver function test :**
- Total serum bilirubin : 0.4 mg/dl.
- Albumin : 3.1gm/dl ; Globulin :3.9gm/dl
- SGOT , SGPT,ALP all are in WNL

- **RFT :** Normal
- **Lipid profile :** WNL
- **Fasting blood sugar :** 102mg/dl
- LDH: 690 U/L
- ESR: 79 mm in 1st hr
- CRP : 75 mg/L

- Sputum for gram stain : **Gram positive cocci** in chains
- Sputum culture : **No growth**

- Sputum for ZN stain : **AFB absent**
- Sputum CBNAAT : **MTB not detected**

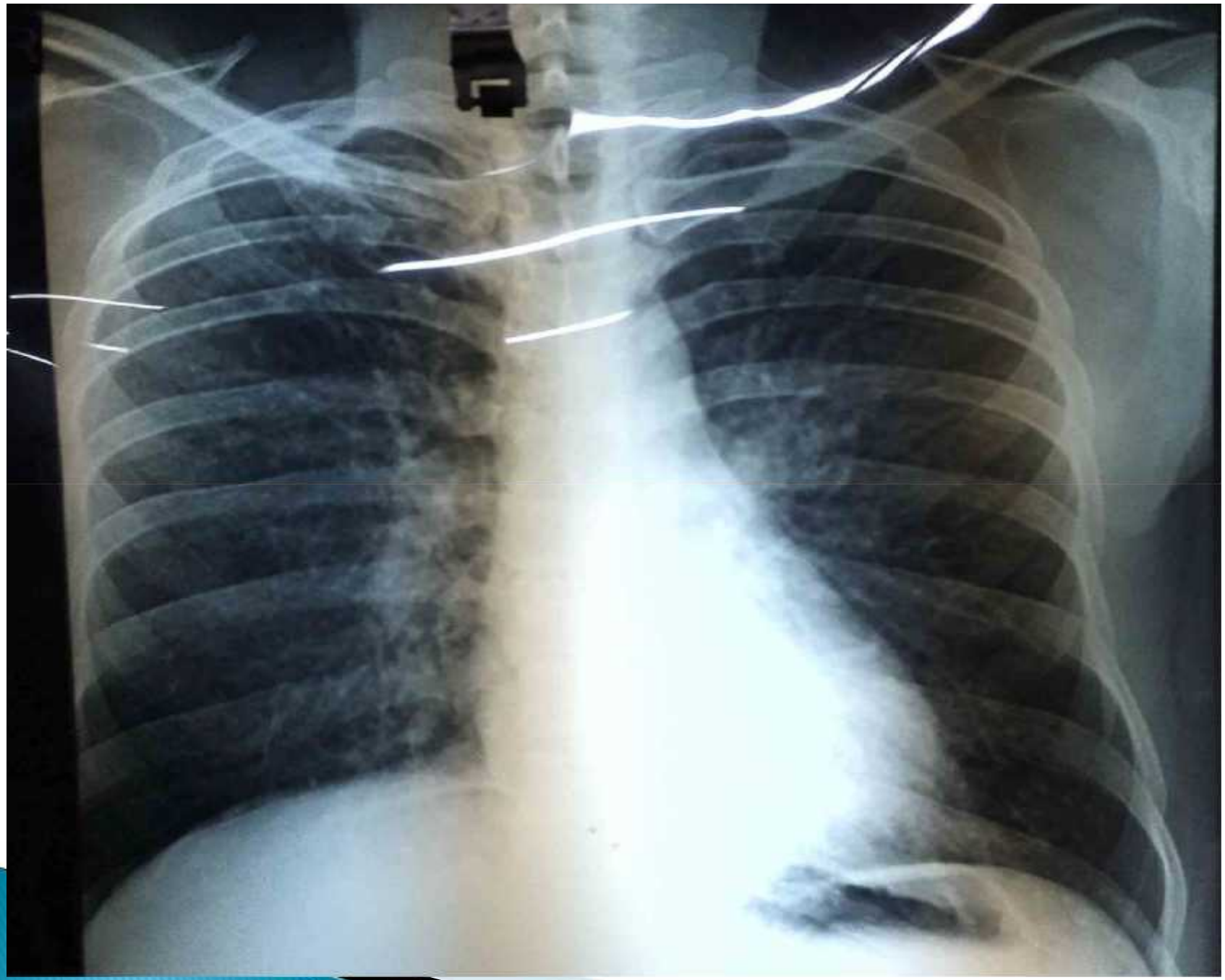
- Sputum for fungal stain : no fungal elements seen

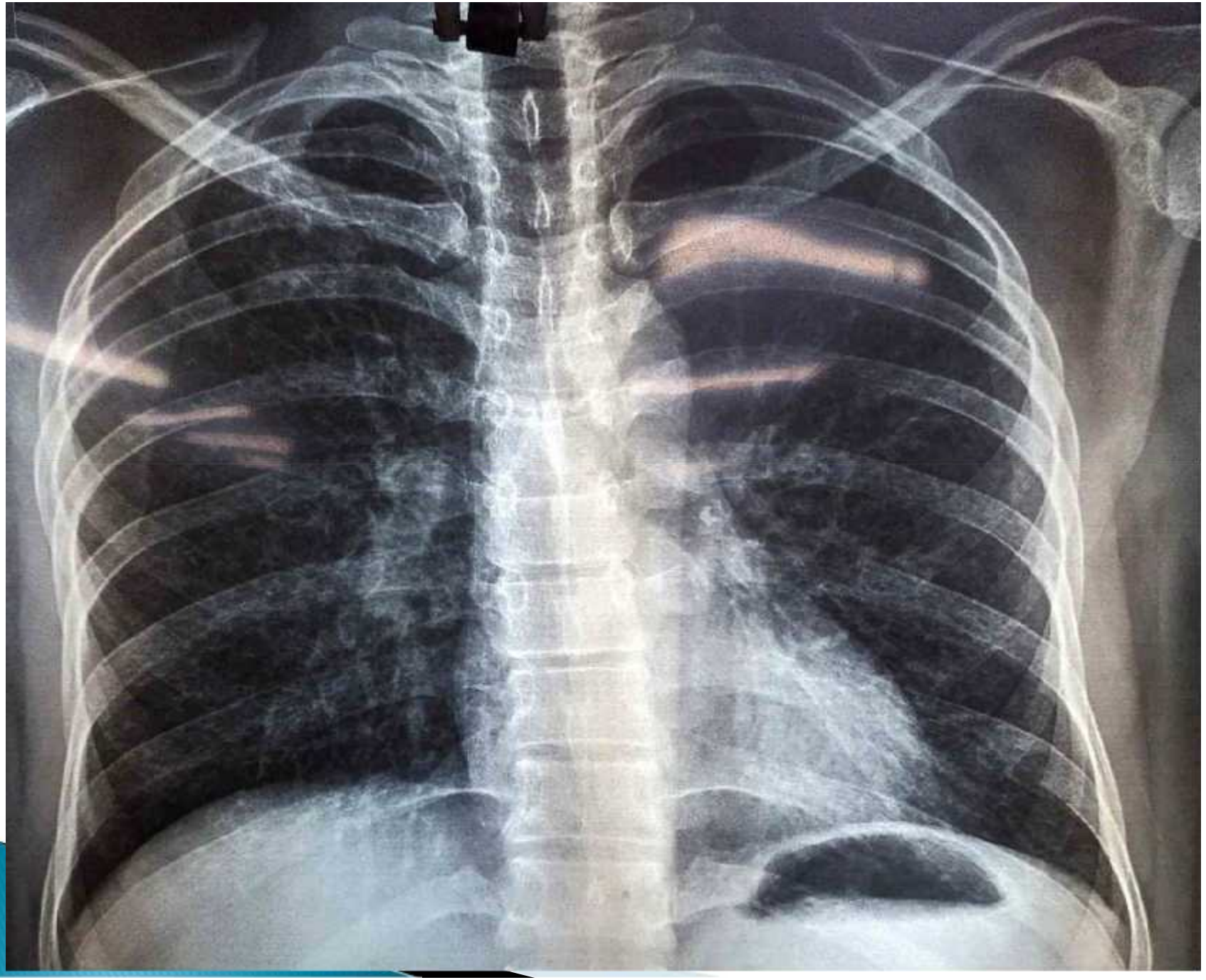
  Fungal culture : no growth

- Urine RE / ME : NAD
  CULTURE : No growth

- Stool RE/ME : NAD
- Stool for OPC : Not found

- HIV (1&2) : NR
- HBs Ag and Anti HCV Ab : both NR
- Covid19 RT-PCR : NEGATIVE
- Influenza panel : NEGATIVE
- MP/MPDA : NEGATIVE





Chest x-ray :

Increased bronchovascular markings with few reticulonodular infiltrates

Ultrasound of abdomen :

- Hepatosplenomegaly
- portal vein 10 mm
- No retroperitoneal lymph nodes
- No ascites

Echo 2D :

Good bi-ventricular function,

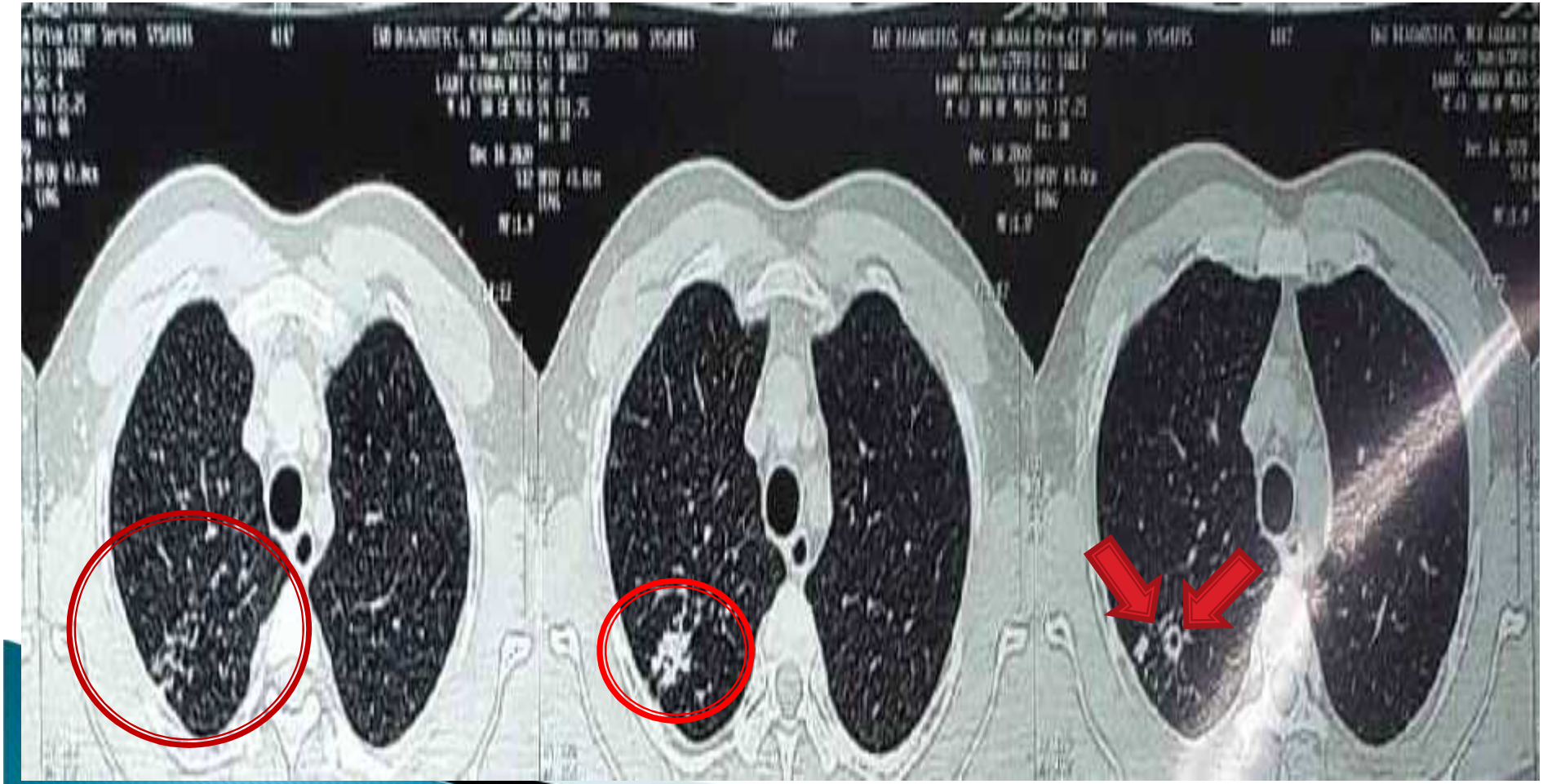
LVEF 70%

What are the possibilities……

- **Allergic bronchopulmonary aspergillosis**
- **Tropical pulmonary Eosinophila**
- Helminths & Protozoas infestations
- **Acute or chronic eosinophilic leukemia**
- Idiopathic hypereosinophilic syndrome
- **Eosinophilic granulomatosis with polyangiitis**
- Asthma
- Drug hypersensitivity
- Lymphoid malignancies
- Autoimmune disorders

HRCT thorax

- Scarry shadowing at RUZ



- Citrate concentration method for microfilaria (12 AM blood) :MF not found.

- ANA (Hep2) : negative
- Rheumatoid factor : 1.16 mg/L (0-20mg/L)
- Anti CCP Ab : negative
- ANCA (P+C) : negative

Total Ig E :

- >15000 IU/ml…. HIGH

Serum galactomannan assay :

- Negative

Filaria Ig G :
(Method-immunochromatography)

- DETECTED

- Tablet Diethylcarbamazine (DEC):
  100mg thrice daily 14 days.

- Shortness of breath subsided on 3rd –5th day of DEC

Discharged

- Patient still c/o **mild cough and low grade fever after 14 days of DEC.**

- WBC : 9900/ µL
- Diff. count:

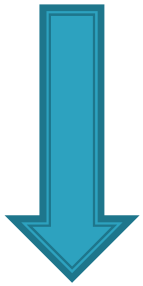
  N-49% L-10% E-47% B-0%

  M-05%

  AEC : 4653/µL (50-500)

- RBC: 4.4 million cells / µL
- Hb : 13.4 gm/dl
- Platelets :2.7 lakh /µL
- Normocytic normochromic

- Sputum CBNAAT : (Repeat sample)



- **MTB detected** (Rif –Sensitive)

- Treatment started with **ATD (4FDC)** as per BW

On day 30th of ATD

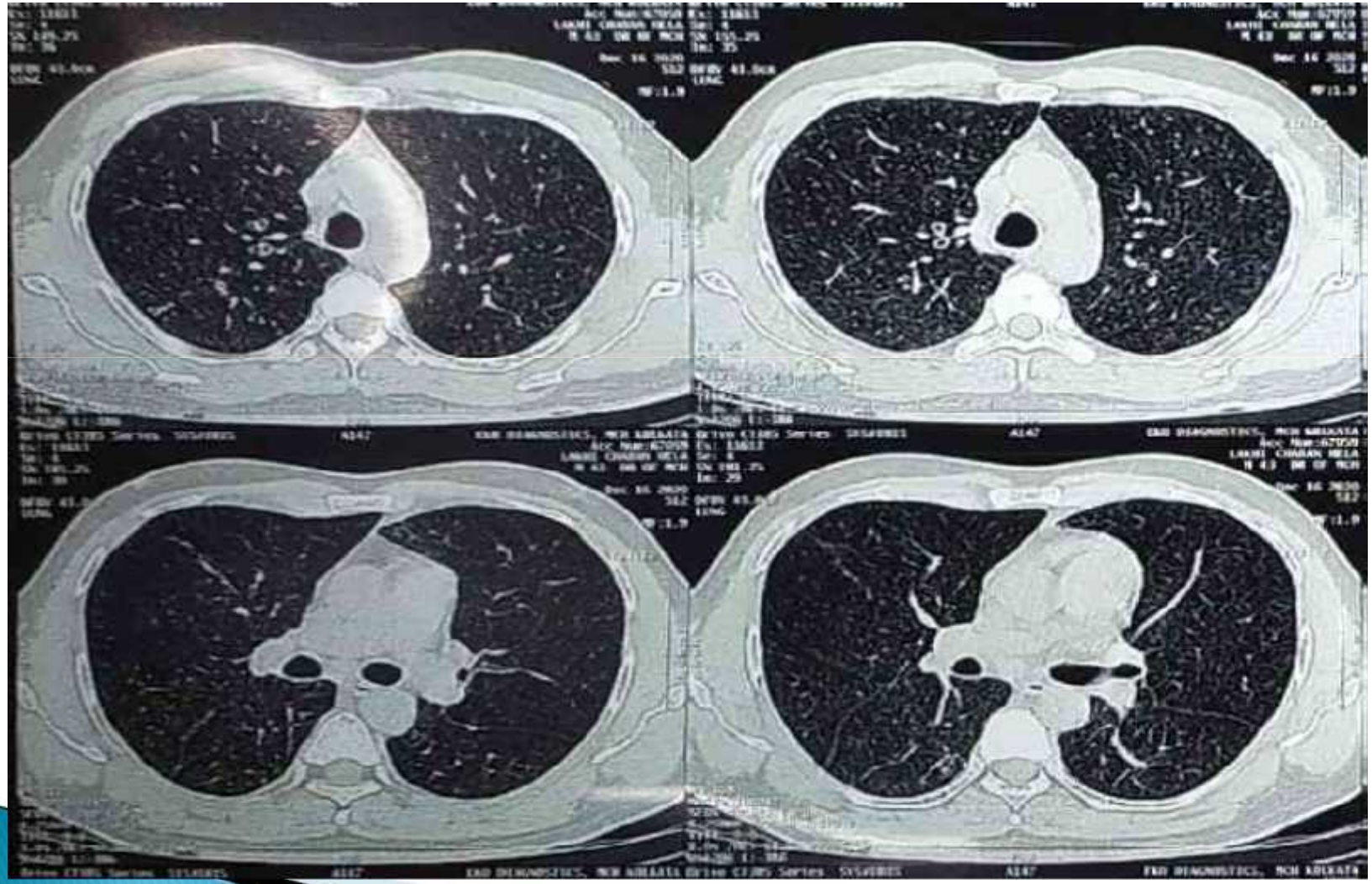
- WBC : 7600/ µL
- Diff. count:

  N 59% L 20% E 11% B-0%

  M-05%

  AEC : 836/µL (50-500)
- RBC: 4.4 million cells / µL
- Hb : 13.4 gm/dl
- Platelets :2.7 lakh /µL
- Normocytic normochromic
- LFT : WNL

At the end of intensive phase of ATD



- Weight gained by 4-5 kgs
- Fever and cough subsided.

Case Reports > Iran J Med Sci. 2017 Jan;42(1):102-105.

Persistent Marked Peripheral Eosinophilia due to Tuberculosis: A Case Report

Gunjan Garg [1], Atul Gogia [1], Atul Kakar [1], Pratyush Miglani [1]

Affiliations + expand

PMID: 28293059 PMCID: PMC5337757

- 68-year old female who was a known case of **diabetes mellitus and chronic liver disease** and presented with complaints of **dry cough** and other constitutional symptoms since **one month**.
- During initial investigations, the patient was found to have **peripheral blood eosinophilia**.
- The patient was found to have **mediastinal lymphadenopathy** and fine-needle aspiration of mediastinal lymph nodes showed features of tuberculosis.
- The patient was started on **anti-tubercular treatment and her eosinophil counts returned to normal levels**.

Case Reports > Pediatric Health Med Ther. 2020 Feb 20;11:59-63. doi: 10.2147/PHMT.S244155. eCollection 2020.

How Common is Eosinophilia in Tuberculosis? Case Report

Hansa Haftu [1], Kibeten Tadese [2], Teklu Gebrehiwot [3], Hagos Gebregziabher [4]

Affiliations + expand

PMID: 32110139 PMCID: PMC7039246 DOI: 10.2147/PHMT.S244155

- 9-year-old female present with abdominal pain in the right upper quadrant which is non-radiating associated with decreased appetite, weight loss, malaise and **low-grade fever** and vomiting of ingested of two weeks.
- On examination, she had severe wasting and **hepatomegaly**.
- On investigations, she had leukocytosis with **50% of eosinophilia**, high ESR, **multiple liver cysts** (abdominal ultrasound and CT) and **biopsy suggestive of TB**.
- Finally, they started on **anti-TB** and responed well eosinophil count became normal.

› Indian J Med Res. 1994 Nov;100:219-22.

Hypereosinophilia in association with pulmonary tuberculosis in a rural population in south India

D Ray [1], R Abel

Affiliations + expand

PMID: 7829154

Abstract

In a prospective study conducted in four villages of North Arcot Ambedkar district of Tamil Nadu in south India over a 5 yr period from 1981-86, 279 patients were detected to have pulmonary tuberculosis (PTB). Thirty one of them were found to have associated hypereosinophilia (HE) with total blood eosinophil level of > or = 2000 per cumm; besides cough with expectoration they also complained of dyspnoea and wheeze. Twelve of the 18 patients with intestinal parasites had remission with deworming agents alone. The other 6 non responsive patients like the 13 who did not have parasitic infestation, needed treatment with diethylcarbamazine for eosinopenic remission and thus could be classified as patients of tropical pulmonary eosinophilia (TPE). The association of

frontiers in Immunology

MINI REVIEW
published: 14 November 2019
doi: 10.3389/fimmu.2019.02639

Eosinophil Polymorphonuclear Leukocytes in TB: What We Know so Far

Senbagavalli Prakash Babu[1], *Prakash B. Narasimhan*[2] *and Subash Babu*[3,4*]

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Human Studies

Patients with non-tuberculous mycobacterial (NTM) infection had significant levels of eosinophils in peripheral blood than those infected with *M. tuberculosis*. Furthermore, patients with *M. avium*-intracellulare complex (MAI) compared to those culturing NTM other that MAI had higher eosinophil counts. Moreover, eosinophilia has been linked to prevalence of active TB in HIV-1-infected patients, suggesting a role in pathogenesis and disease susceptibility (32). On the other hand, eosinophils exhibit bactericidal potential mediated through phagocytosis, respiratory burst, and mobilization on cytotoxic proteins in the presence of bacterial infection (33, 34), which suggest a protective role of these cells in bacterial infection.

Case Reports

The drug reaction with eosinophilia and systemic symptom (DRESS) is a drug-induced life-threatening syndrome including severe eruption, fever, hypereosinophilia, and internal organ involvement (35). DRESS caused by anti-TB drugs is rarely reported and is mostly due to rifampicin (36). A 39-year-old Cambodian woman with TB presented with DRESS syndrome with hypereosinophilia at 1,400 cells/mm^3, which was diagnosed to be induced by ethambutol (37). Peripheral blood and pulmonary eosinophilia was evident in three pulmonary TB patients with elimination of eosinophilic inflammatory process in two of the patients with successful anti-TB treatment, and tissue pathology was mainly associated with the discharge of toxic eosinophil proteins (38, 39).

Pulmonary Eosinophilia in Pulmonary Tuberculosis*

Vannan-Kandi Vijayan, M.B., M.D., Ph.D., F.C.C.P.;
Akkam-Madathil Reetha, M.B., D.Ch.;
Mohideen Shaheed Jawahar, M.B., M.D.;
Kameswaran Sankaran, B.Sc.; and
Ramachandra Prabhakar, M.B., M.D., F.C.C.P.

Three radiologically and bacteriologically confirmed pulmonary tuberculosis patients had eosinophilic pneumonia, as demonstrated by BAL. In two patients, pulmonary eosinophilia was present only at the site of the lesion and the third had eosinophilia in both peripheral blood and lung. There was complete elimination of the eosinophilic inflammatory process in two patients who had successfully completed antituberculosis treatment.

(Chest 1992; 101:1708-09)

Review > Parasitol Int. 2012 Jun;61(2):381-4. doi: 10.1016/j.parint.2011.11.006. Epub 2011 Dec 8.

Tropical pulmonary eosinophilia misdiagnosed as miliary tuberculosis: a case report and literature review

Sayantan Ray [1], Supratip Kundu, Manas Goswami, Subhasis Maitra

Affiliations + expand

PMID: 22172479 DOI: 10.1016/j.parint.2011.11.006

- Tuberculosis is prevalent in our country and may mimic almost any pulmonary disease on chest skiagram.
- patient with acute chest symptoms and micro-nodular opacity over chest roentogenogram, diagnosed as miliary tuberculosis and treated accordingly. Actually he was suffering from tropical pulmonary eosinophilia and showed response to combined diethylcarbamazine.
- This case serves as a reminder that tropical pulmonary eosinophilia may be wrongly diagnosed as miliary tuberculosis if one rely solely on a chest X-ray with micronodular opacities.

Take home message

- Dual pathology with common symptoms is possible.
- Tuberculosis is prevalent in our country and may mimic almost any pulmonary diseases.
- Common diseases in tropics to be ruled out initially

- Thank you