A Rare Pulmonary Presentation of Chronic Lymphocytic Leukemia

DPU
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DEPARTMENT OF RESPIRATORY MEDICINE
DPU
WE HELP YOU BREATH FREE

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Chief Complaints

50 year old female, housewife, with history of hypothyroidism

Dry Cough x 2 months

- Repeated bouts of dry cough
- Increasing in supine position

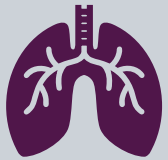
Dyspnea x 2 months

- MMRC Gd-1
- Wheeze present
- Increasing in supine position suggestive of PND
- No history of hemoptysis, chest pain, fever.

Admitted to outside hospital with same complaints multiple times.

Was given antibiotics, steroid, bronchodilators.

No significant response.



Patient came to our Respiratory Medicine OPD for further management.

Clinical Examination

Vitals

- Temp. : 98.1^0 F
- PR : 86 bpm
- RR : **28 breaths/min**
- BP : 130/80 mm Hg
- SpO2 : **92% on room air**
- BMI - 41.6 kg/m^2

General examination - NAD

Respiratory System

- Bilateral coarse crepts in infra-scapular area and infra-axillary area
- Bilateral diffuse polyphonic rhonchi

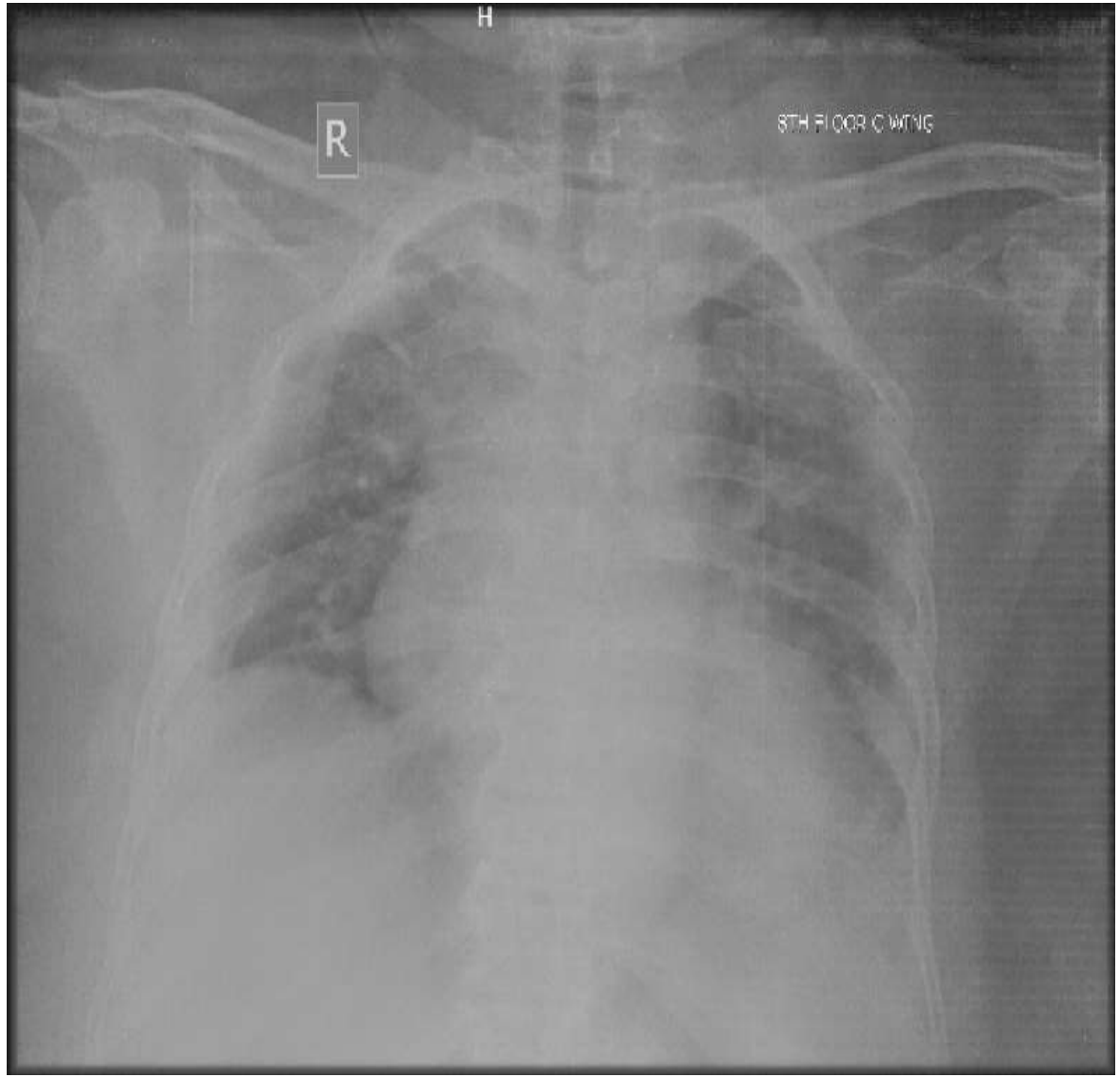
Other systemic examination - NAD

Investigations/ Workup

Date	28/12/24	15/1/25	20/1/25	26/1/25	15/1/24	16/1/24	
Hb	**10.1**	**10.1**	**10.6**	**10.9**	Na 140 K 3.36 Cl 103	**TSH - 0.24** Free T3- 1.83 Free T4 - 0.94	RA – Neg Anti CCP - Neg
TLC	**16390**	**20300**	**28900**	**30800**	Urea 46 Creat 0.59	HbA1c - 6.8	Blood C/s No Growth
Differential Count	Lymphocyte 65 %	Lymphocyte 63% Eosinophils 0%	Lymphocyte 72% Eosinophils 0%	Lymphocyte 60%	T.Bil - 0.21 ALT- 30 AST - 26	**T.Chol- 259** HDL 59 **LDL - 178**	Procal 0.15
Platelet	230000	228000	25500	273000	T.Pro - 6.3 Alb - 3.8	ANA Blot Negative	

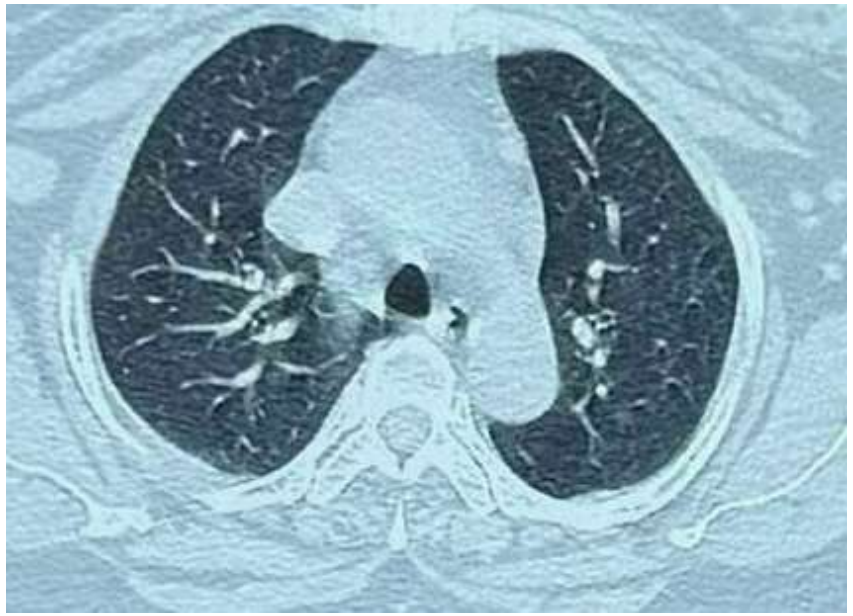
Radiology

No Pleuroparenchymal abnormality seen on X-ray Chest on Admission



Radiology

December 2024



Outside HRCT Thorax showing no obvious pleuro-parenchymal abnormality.

Spirometry was planned – But patient could not perform it.

Initial Diagnosis

- Late/Adult Onset Asthma with Hypothyroidism
- Gastroesophageal Reflux Disease
- Coronary Artery Disease

Initial Management

INJ METHYLPREDNISOLONE 20 MG BD

INJ PIPERACILLIN + TAZOBACTUM 4.5 GM IV TDS

INJ LINEZOLID 600 MG BD

TAB ITOPRIDE 50 MG OD

SYP GAVISCON 1 TSP TDS

NEBULIZATION LEVOSALBUTAMOL + IPRATROPIUM

QID

TAB SPIRONOLACTONE + TORASEMIDE 10/50 OD

TAB THYROXINE 25MCG OD

Course in Hospital

Cardiology Consult

2-D ECHO
Ejection Fraction - 60%,
Mild PAH,
RA/ RV mildly dilated

CAG
Non obstructive coronary artery disease.

RHS
Normal Cardiac output,
Mild pulmonary artery hypertension

The patient was started on
TAB SACUBITRIL + VALSARTAN 50 MG BD,
TAB DAPAGLIFLOZIN 10MG OD,
TAB SPIRONOLACTONE + TORASEMIDE 10/50 MG OD was continued

Course in Hospital

Medical Gastroenterology Consult

→

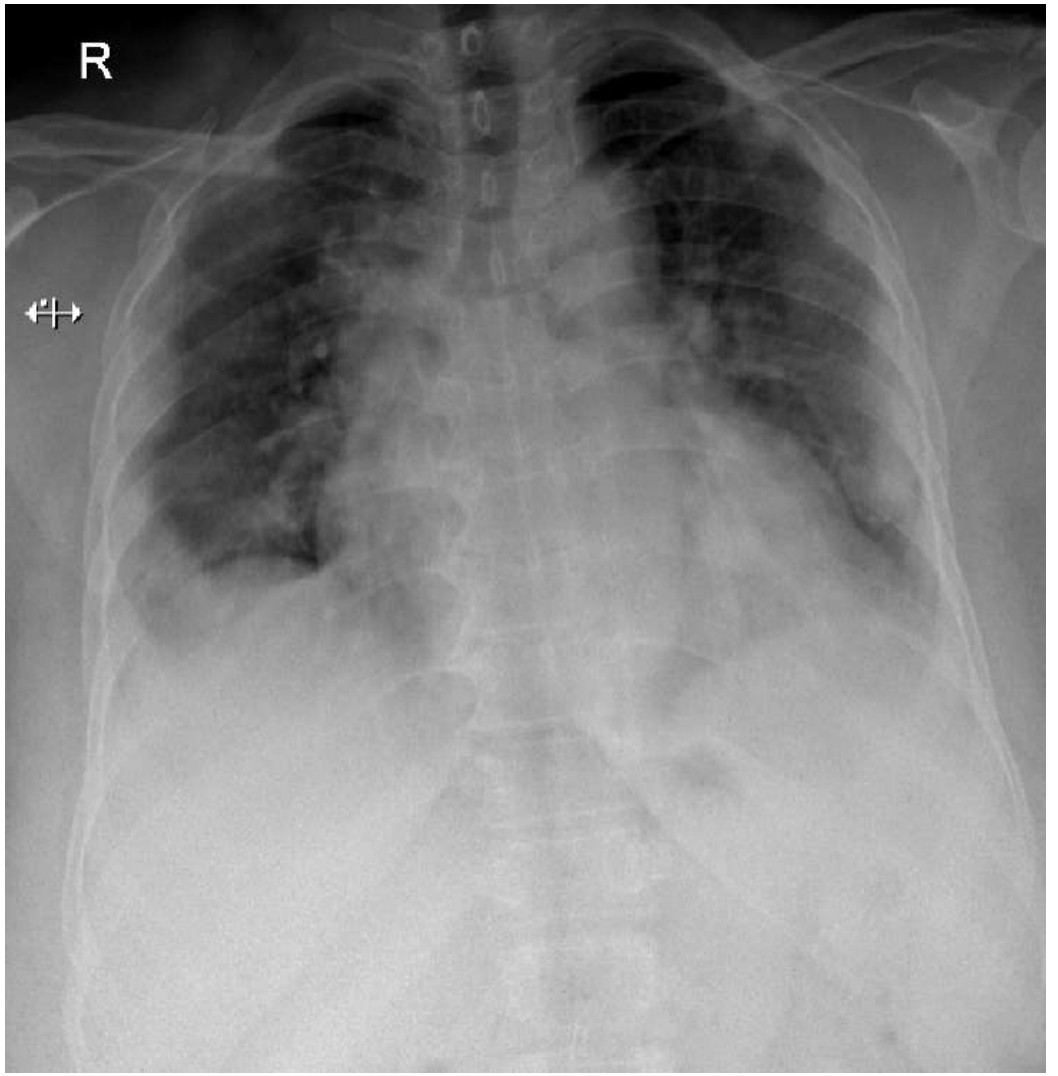
In view of Gastroesophageal Reflux Disease.
TAB DOMPERIDONE 10 MG TDS was added.

Patient showed partial response to initial medical management.

Course in Hospital

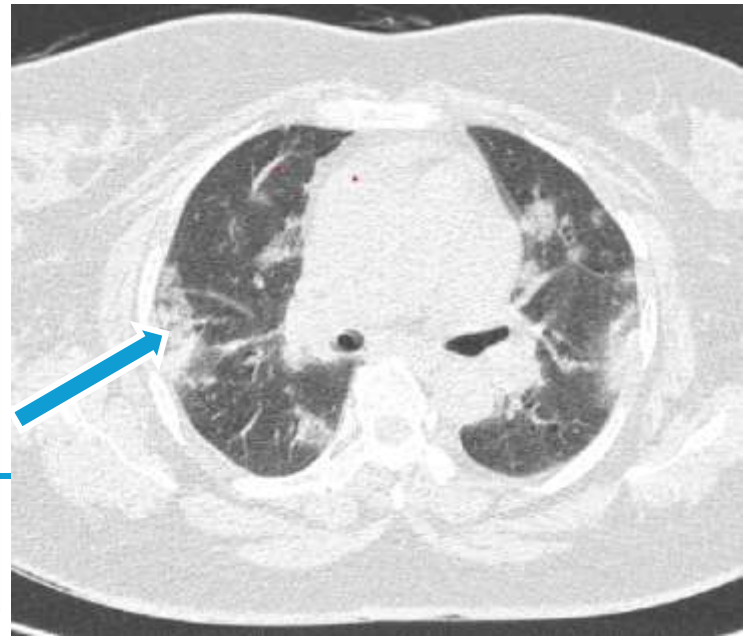
X-ray Chest PA

Patchy areas of peripheral consolidation in all zones

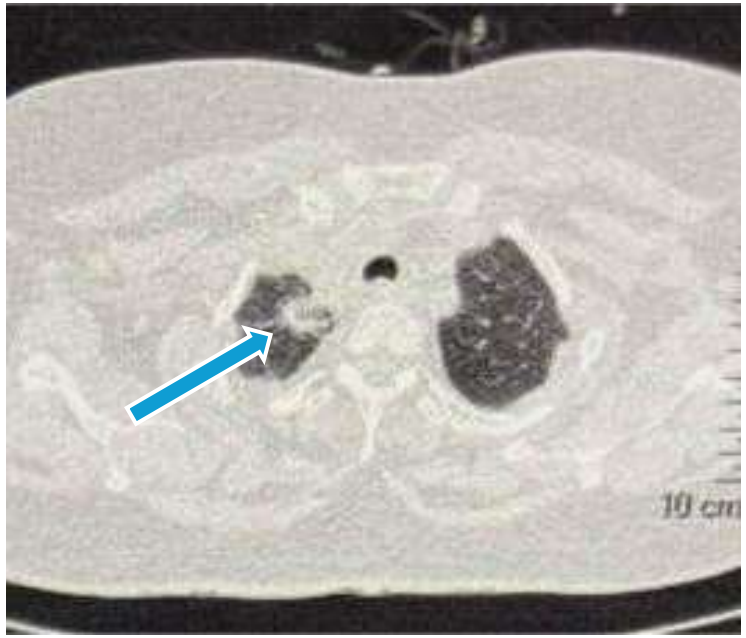


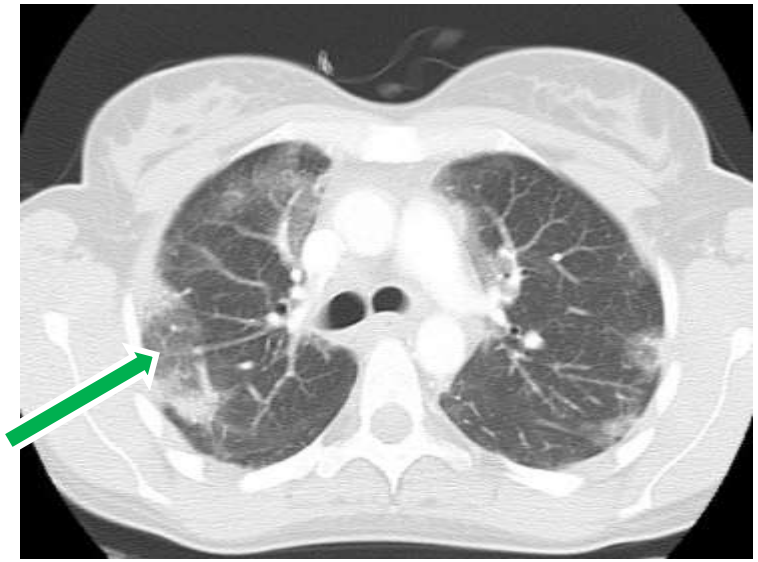
Course in Hospital

Patchy areas of peripheral consolidation seen in all lobes



Blue Arrows show a not so classical Reverse Halo Sign





Classical Reverse Halo sign also known as Atoll sign is highly specific for OP

Course in Hospital

In view of persistent **lymphocytosis** and **leucocytosis.**

Hematolgy Consult

Peripheral blood smear was advised.

Following which a **Flow cytometry** was done.

Patient was advised to start **Rituximab** and **Bendamustine**.

As the patient showed significant response to steroids.

This treatment was deferred.

Course in Hospital

To confirm the pulmonary involvement of chronic lymphocytic leukemia.

Interventional Radiology Consultation for CT guided lung biopsy or CT guided FNAC.

Procedure could not be done due to patients increased cough on lying down. Patient could not lie down more than 5 mins.

Course in Hospital

After 10 days of iv Medrol therapy, patient showed significant improvement.

Patient was discharged on

TAB METHYLPREDNISOLONE 16MG-0-8MG FOR 7 DAYS

↓

TAB METHYLPREDNISOLONE 8MG BD FOR 7 DAYS

TAB SACUBITRIL + VALSARTAN 50 MG BD

TAB DAPAGLIFLOZIN 10 MG OD

TAB THYROXINE 25MCG OD

SYP GAVISCON 1 TBSP TDS

TAB SPIRONOLACTONE + TORASEMIDE 10/50 OD

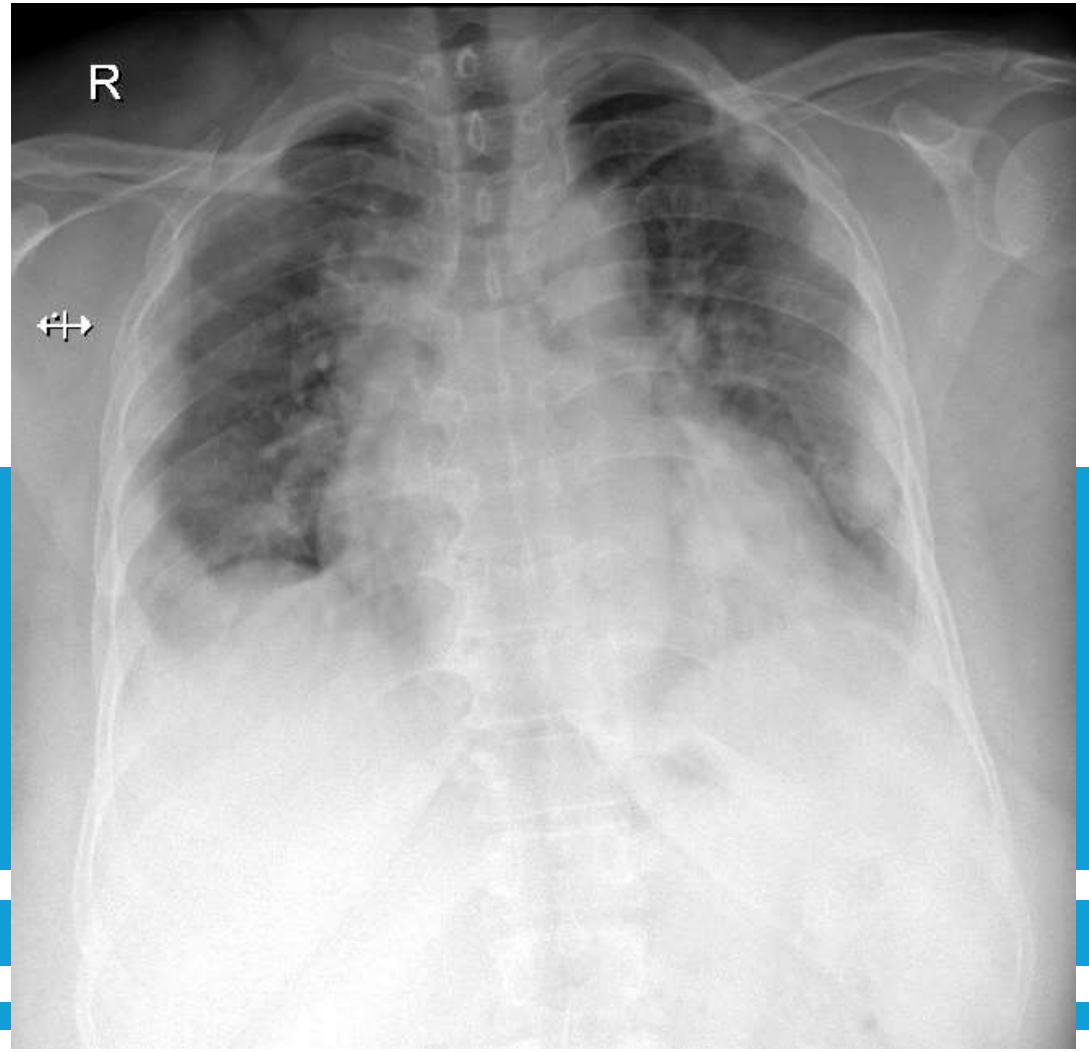
TAB ITOPRIDE 50 BEFORE FOOD OD

On follow up after 2 weeks

Patient was asymptomatic with occasional cough.

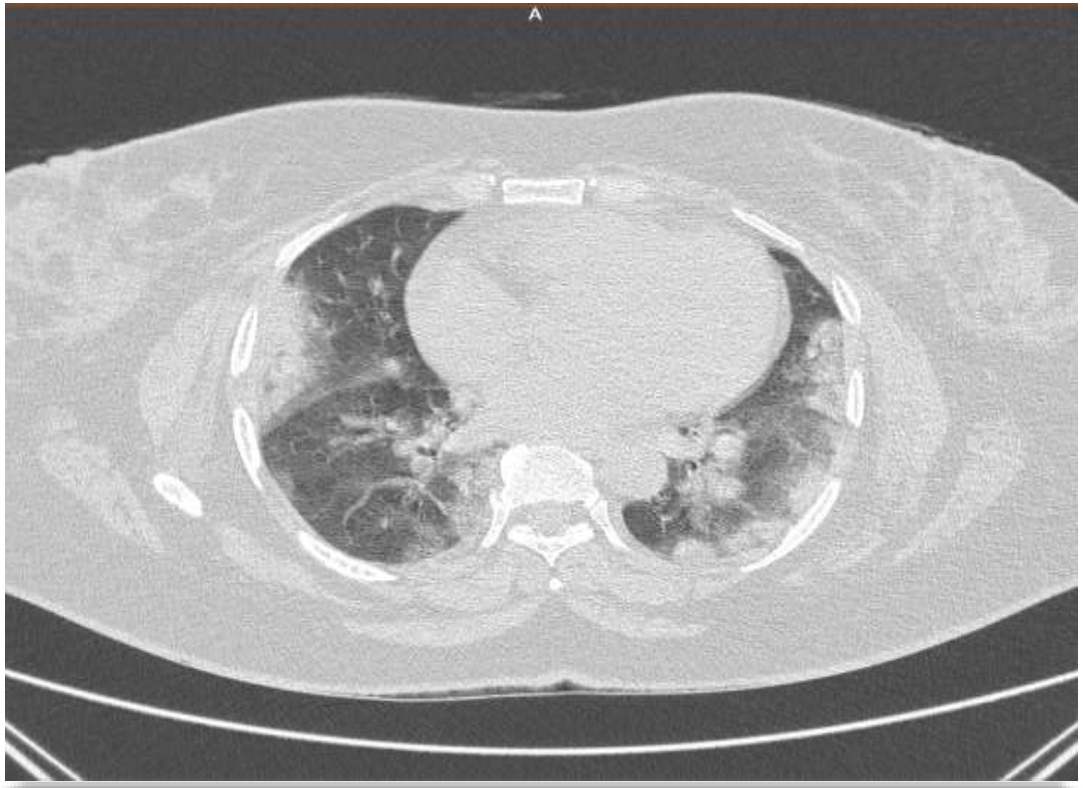
X-ray Chest PA

On two week follow-Up



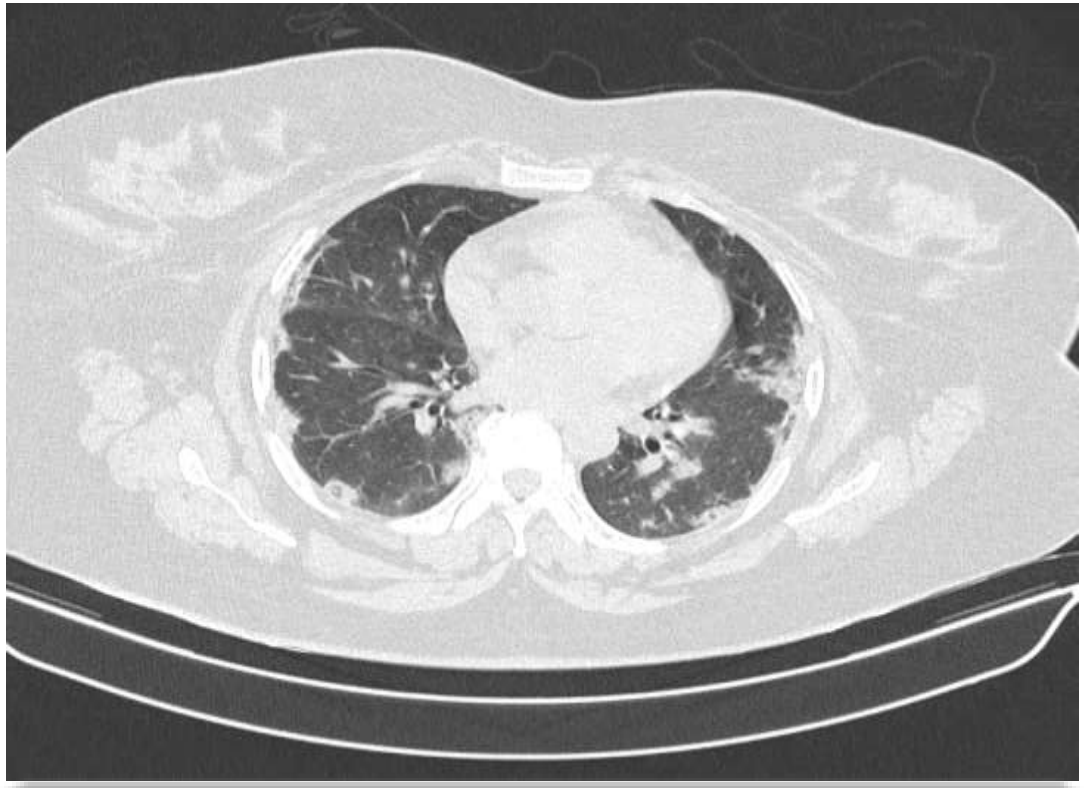
On follow up after 2 weeks

Before



Subpleural GGO's with consolidation with reverse halo sign.

After



Repeated CT after 2 weeks of oral steroid therapy showed significant resolution of lesions.

Discussion

Chronic lymphocytic leukemia (CLL) is a monoclonal proliferation of mature B lymphocytes defined by an absolute number of malignant cells in the blood (> 5000 per micro litre).

The mediastinum is the most commonly affected intrathoracic site. This often manifests as a focal mass with nodular involvement.

Pleural effusion, usually unilateral, can present in up to 25% of cases and is seen more frequently in myeloid leukemias.

Discussion

Usual radiographic pattern of involvement

- Interlobular smooth or nodular septal thickening (most common).
- Thickening of bronchovascular bundles.
- Bilateral reticular pattern resembling interstitial edema.
- Lymphangitic carcinomatosis (rarely).

Discussion

- Asthma like picture was possibly due to the involvement of broncho-vascular lymphatics.
- Although not evident on CT Scan.

Discussion

Organizing Pneumonia is a specific clinicopathologic syndrome characterized by a pneumonia-like illness, with excessive proliferation of granulation tissue inside the alveolar spaces associated with chronic inflammation in the surrounding alveoli.

Chronic Lymphocytic Leukemia presenting as Bronchial Asthma and Organizing Pneumonia is a very rare presentation.

Discussion

The review of the literature revealed only 2 Case reports from abroad.

PULMONARY MANIFESTATIONS OF SYSTEMIC DISEASE · Volume 152, Issue 4, Supplement , A955, October 2017

Unrecognized Pneumonia: A Rare Case of Chronic Lymphocytic Leukemia-Associated Organizing Pneumonia

Nicholas Keaton · Nikhil Huprikar · Matthew Peterson · Steven Deos

DISCUSSION: Tree-in-bud opacities in the setting of productive cough are most commonly associated with infection, even in patients with CLL. This patient had multiple rounds of appropriate antibiotic therapy with no significant improvement in his symptoms and multiple negative cultures. Connective tissue diseases such as SLE were considered, but serological evaluation was unremarkable and he had no other findings consistent with an active CTD. Though rare, CLL has been implicated as a causative etiology for organizing pneumonia. With an increasing absolute lymphocyte count, it is believed that the most likely etiology for his organizing pneumonia is lung involvement of CLL.

CONCLUSIONS: This case describes a rare presentation of organizing pneumonia likely due to pulmonary involvement of relapsed chronic lymphocytic leukemia.

LUNG PATHOLOGY · Volume 162, Issue 4, Supplement , A1858, October 2022

AN UNUSUAL PRESENTATION OF CHRONIC LYMPHOCYTIC LEUKEMIA AS ORGANIZING PNEUMONIA

ANITA GOPALAKRISHNAN · RAMEEZ RAO · MOHAMMAD SALIMIAN · GUILLERMO GARRIDO

DISCUSSION: OP occurring in patients with hematologic malignancies has multiple etiologies. Most case reports describe patients with previous exposure to chemotherapy, radiotherapy, or bone marrow transplant. However, our patient had no such exposure history and no prior diagnosis of a hematologic malignancy. Infectious and autoimmune etiology were considered, but serologic evaluation was unremarkable. Flow cytometric analysis of lymph node tissue along with lymphocytic bronchoalveolar lavage was consistent with initial diagnosis of CLL.

CONCLUSIONS: Despite the low incidence, hematologic malignancy should be considered as a differential diagnosis in all patients who present with organizing pneumonia. Prednisone therapy for 6-12 month duration has been shown to reduce respiratory symptoms and may improve survival.

This is the first case report from India.

Clinical Pearls

All wheezes are not asthma.

Specially when asthma like picture occurs at later age group like in our case.

One must make an attempt to find out other causes of wheezes.

A simple investigation like peripheral blood smear analysed by an expert can clinch the diagnosis.

THANK YOU

Course in Hospital

Laboratory investigations On Peripheral Blood Smear

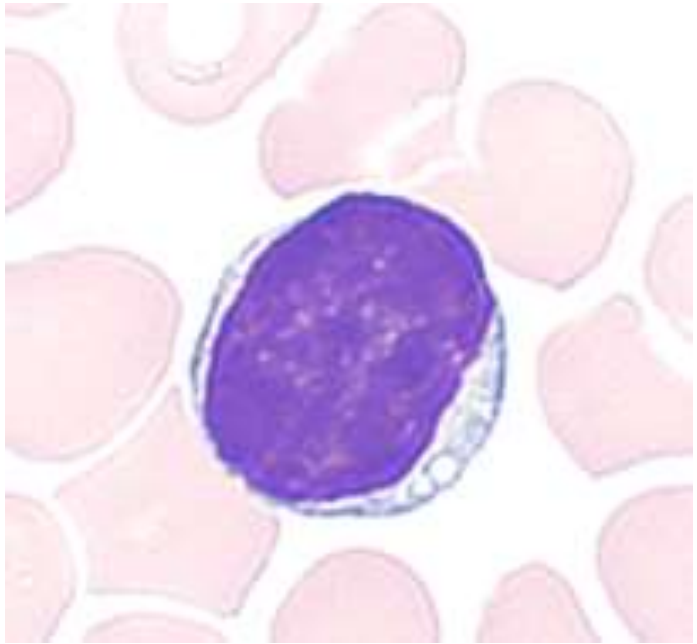
WBC Morphology

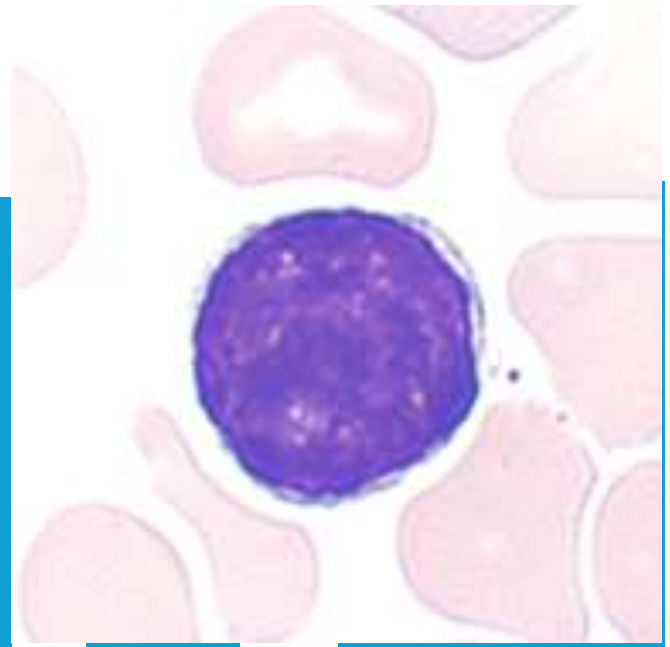
Few atypical lymphocytes large in size, with open chromatin, having irregular nuclear border, scant to moderate cytoplasm, few smudge cells noted

Suggestive of

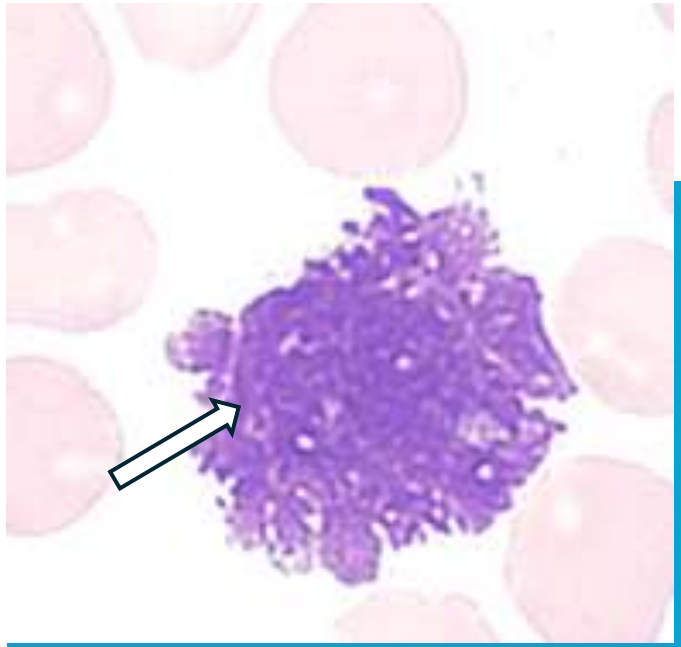
Chronic Lymphocytic Leukemia

Flow Cytometry - Confirmed the diagnosis of **Chronic Lymphocytic Leukemia**





Small size lymphocyte with condensed chromatin with scant basophilic cytoplasm



Smudge Cell