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Original Research Paper

Radiodiagnosis

AN UNUSAL CASE OF MIXED CONNECTIVE TISSUE DISORDER INVESTIGATED BY DIFFERENT IMAGING AND PATHOLOGICAL TECHNIQUES.

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ABSTRACT The etiology of connective tissue diseases remains unknown, the classification of individual cases will continue to depend on identifying certain patterns of clinical and laboratory features. As many as 25% of connective tissue disease patients present with an overlap syndrome with features of systemic lupus erythematosus, systemic sclerosis, polymyositis, or dermatomyositis, with rheumatoid arthritis and Sjögren's syndrome evolving concurrently or consecutively during the course of the disease. We report here a case of mixed connective tissue disorder investigated by multiple imaging modalities (X-Ray, C.T., M.R.I., P.E.T. Scan), different bio-chemical & pathological tests and there after confirmed by histopathology in a 52 years old female.

KEYWORDS : Scleroderma, Multi-systemic, Mixed connective tissue disorder

INTRODUCTION

We review a case of mix connective tissue disorder involving skin, lungs, nerves including systemic manifestations like hepato-spleenomegaly as detected by MRI, Sonography, Chest X-ray, PET scan and proved by histopathological test. Imaging appearance of **Mixed connective tissue disease (M.C.T.D.)** can have significant overlap with other connective tissue diseases such as systemic lupus erythematosus and scleroderma . It is therefore classified as a type of overlap syndrome. There are some thoughts that M.C.T.D. should exist as a separate entity. It occurs from an autoimmune abnormality and often is defined by the presence of a ribonuclease-sensitive extractable nuclear antigen. For the diagnosis of mixed connective tissue disease, presence of high titers of antibodies against uridine-rich RNA-small nuclear ribonucleoprotein (snRNP) - anti-U1-RNP antibodies in the serum are mandatory. The presence of anti-U1-70 kd is considered a characteristic feature. The correlation of the imaging findings with demographic data and clinical findings are important for the diagnosis of connective tissue disorders.

CASE REPORT

A 52 yrs old female came to O.P.D. with c/o persistent high grade fever, weight loss, progressive exertional breathlessness (grade II) , skin rashes with scaling over hand, hyper-pigmented areas on foot, body ach, since 06 months, with provisional diagnosis of pyrexia of unknown origin for following investigations.

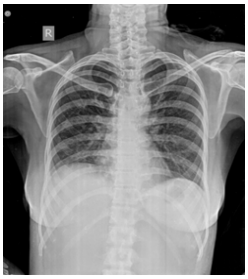
OBSERVATIONS

Biochemical Investigations:

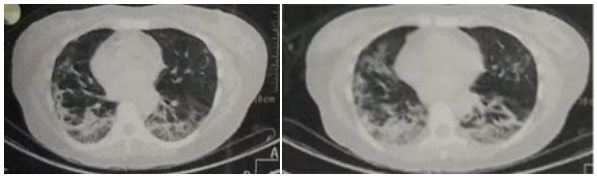
Hematology: NEUTROPHILS=88% (N{40-80}%), Xpert MTB-RIF ASSAY G4:MTB not detected, TRI-DOT for HIV:NEGATIVE, Hematologic findings suggestive of neutrophilia

Radiological Investigations:

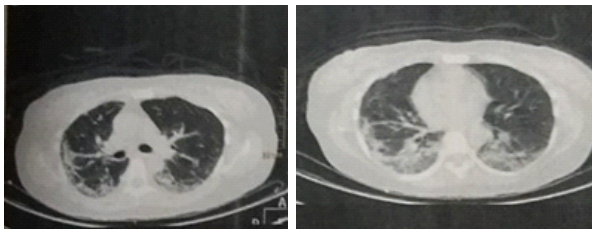
CHEST X-RAY revealed prominent Broncho-vascular markings with normal heart, C. P. angles etc.



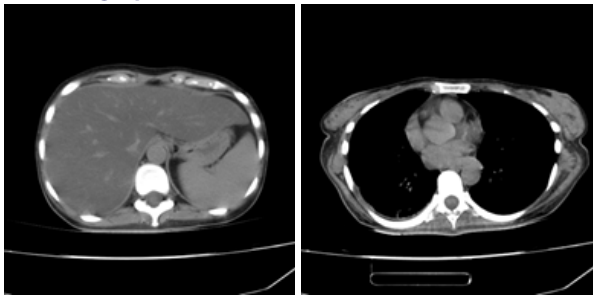
HRCT:



E/O bilateral lower lobe posterior segment prominent interstitial as well as acinar shadow s/o an air space consolidation with evidence of fibrosis indicating chronicity.

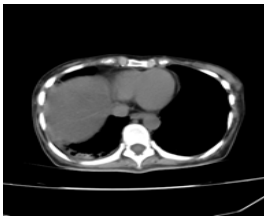


Minimal right pleural effusion.

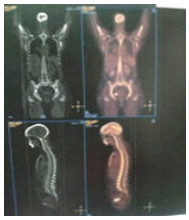


Hepatosplenomegaly with fatty infiltration

Mediastinal fatty infiltration



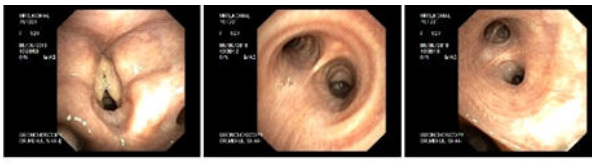
Note Rt. sided – lung showing consolidation posteriorly & pleural effusion.



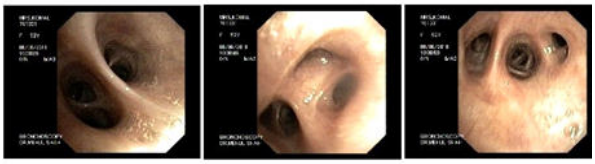
PET scan showing altered bone marrow signals.

Other Investigations:
Bone Marrow Cytology was done Showing neutrophilia with altered findings suspicion for leukemia excluding malignancy.

Broncoscopy Findings were within normal limits



Vocal cords normal | Carina sharp | LUL and Lingular segments normal

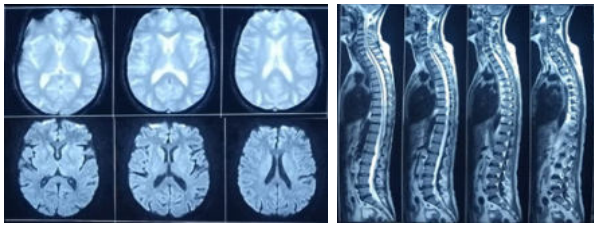


LLL segments normal | RUL segments normal | RML and RLL segments normal

Lung Biopsy: revealed I.L.D. (diffuse fibrosis).

Nerve Conduction Test was done as patient had persistent complaint of loss of muscle power - it revealed demyelinating neuropathy - motor more than sensory considering findings of ILD, neuropathy, HS with neutrophilia, skin complaints, possibility of multisystem involvement - mainly connective tissue was considered, these findings were supported by strongly positive Auto antibody assay (RO-52) suggesting high possibility of Scleroderma excluding Rheumatic disease & Myositis.

MRI: of spine & brain was done which revealed
Disc desiccation at C 3-4,C 6-7 level, mild posterior disc bulges causing indentation over ventral subarachnoid space, mild diffuse Cerebral and cerebellar Atrophy.



DISCUSSION:
This 52 yr, female patient came with

Complaints like - 1) Fever 2) Weight loss 3) Breathlessness, 4) Skin changes 5) Body ache

Clinical Findings like - 1) Edema of the hands 2) Synovitis 3) Myositis 4) Raynaud's phenomenon 5) Atherosclerosis.

Biochemical investigation revealing: negative **-** Test for Tuberculosis, negative for H.I.V. Hematologically – Neutrophilia. Hematological indices favouring diagnosis,

Imaging findings on Chest X-ray revealing prominent Broncho vascular.

H.R.C.T. – Further confirmed by lung biopsy as interstitial lung disease.

Nerve conduction study revealing demyelinating neuropathy - motor more than sensory.

Sstrongly positive auto antibody assay (ro-52)

All these findings confirmed diagnosis of mixed connective tissue disorder.
In these patients confirmatory diagnostic criteria include serologic criterion like anti-rnp (u1-rnp) at a hemagglutination titre of 1:1600 or greater.

The Diagnosis Of Connective Tissue Disorder Was Considered As Per The Table Given By Sharp Et Al.

Major Criteria	Minor Criteria	Diagnosis
1. Pulmonary involvement A. Less than 70% normal values of diffuse capacity B. Lung biopsy with proliferative vascular lesion C. Pulmonary hypertension	1. Alopecia 2. Anemia 3. Pericarditis 4. Pleuritis 5. Leukopenia 6. Mild myositis 7. Malar Rash 8. Thrombocytopenia 9. History of swollen hands 10. Trigeminal Neuropathy 11. Arthritis	Anti-U1-RNP Ab titer test (at least 1:4000) and 4 or more major criteria. Or At least 2 major criteria (only of the listed 1, 2 or 3) with minor criteria and anti-U1-RNP titer test (at lease 1:1000) Exclusion criteria : anti-Sm Ab positive test.
2. Esophageal Hypomotility or Raynaud's phenomenon		
3. Myositis		
4. Swollen Hands		
5. Anti-Sm negative and Anti U1 RNP Ab positive and Anti-ENA Ab greater than 1:10,000		

Considering all above clinical, pathological, imaging findings –
It fits in overlap syndrome. In recent years attempts are made to identify antibody markers within this population. Thus, anti-u1-ribonucleoprotein is associated with overlap syndromes in which features of systemic lupus erythematosus are accompanied by features of systemic sclerosis or myositis; antibodies to polymyositis-scleroderma, ku, and u2-ribonucleoprotein are associated with overlaps of systemic sclerosis and polymyositis, and anti-jo-1 is associated with polymyositis and pulmonary fibrosis.

CONCLUSION:
In conclusion ppatients clinical presentation, Hematological and Radiological Investigations followed by histopathological diagnosis has confirmed this as case of mixed connective tissue disorder (Scleroderma).

Early & precise diagnosis of these patients are essential since they may develop Pulmonary disease with pulmonary hypertension, pulmonary fibrosis. Raynaud's disease, Digital puffiness, Arthritis, Esophageal disease, Myositis etc. as serious complications.

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