Original Research Paper

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Radio-Diagnosis

A DESCRIPTIVE CROSS SECTIONAL STUDY FOR EVALUATION OF INTERSTITIAL LUNG DISEASES IN SEROLOGICALLY POSITIVE COLLAGEN VASCULAR DISORDER PATIENTS USING HIGH RESOLUTION COMPUTED TOMOGRAPHY

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ABSTRACT Interstitial lung diseases is a term given to a heterogeneous group of clinical entities that share the following features: dyspnea, hypoxemia, restrictive ventilatory defect and the presence of bilateral diffuse pulmonary infiltrates on the chest roentgenograms1. It is now recently called by the term Diffuse Parenchymal lung diseases (DPLD) which is now on an increase. The disease is characterized by deteriorating parenchymal fibrosis and gas exchange. High Resolution computed Tomography (HRCT) is more sensitive method and is considered central in the diagnosis of ILDs. Abnormalities observed on HRCT can help to identify specific ILDs. HRCT also can be used to evaluate the patient's prognosis, while disease progression can be assessed through serial imaging. This study throws light on importance of High Resolution Computed Tomography in diagnosing interstitial lung diseases in serologically positive collagen vascular disorder patients. To enhance the knowledge in this area, statistical analysis is performed. This highlights the agreement as well as discordance between the variables.

KEYWORDS : ILDs, HRCT, collagen vascular disorders, Rheumatoid Arthritis.

INTRODUCTION

Approximately 15% of the patients who present with ILD have an underlying Connective Tissue Disorders (CTDs).[1] The lung diseases associated with collagen vascular disorder may precede the clinical presentation of collagen vascular disease by 5 years or more.[1] In diffuse lung disease, it is generally accepted that the advent of high-resolution computed tomography (HRCT) has been the major diagnostic advance of the last 2 decades. High resolution computerized tomography is now an integral part of routine diagnostic evaluation, and its use has a major impact on the utility of other diagnostic tests, especially bronchoalveolar lavage and surgical biopsy procedures. However, as with all new diagnostic tests, the routine diagnostic application of High resolution computerized tomography has evolved slowly.

MATERIALS AND METHODS

25 serologically positive collagen vascular disorder patients are studied for interstitial lung disease with the help of High Resolution Computed Tomography. Patient associated with co-morbid illness like congestive cardiac failure, tuberculosis and malignancy are excluded from study. Also, smokers are virtually eliminated from the study since it is a confounding factor for example, the respiratory bronchiolitis of smoking can be falsely attributed to collagen vascular disorders.

RESULTS

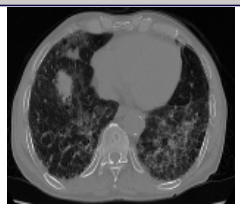
Age distribution shows maximum number of patients presented between the age of 25 to 44 years. Mean age distribution found in our study is 37. The calculated standard deviation is 7.98. Hence 95% of confidence interval lies in the age range of (37±15.96), indicating that the most of them falls in the late fourth decade. Out of 25 cases, 14 cases (56%) are female and 11 cases (44%) are male. Table-1 shows sex incidence of ILDs in CTDs. Table-2 shows reticular pattern in different patient with most of the patients are showing interlobular and intralobular septal thickening.

CONCLUSION

Female predominance is noted in the incidence of Interstitial lung Diseases among collagen vascular disorder patients. Majority of the cases were presented as interlobular and intralobular septal thickening with interspersed diffuse areas of ground glass opacities (NSIP pattern). Lower zone lesions are observed in majority of the cases compared to the mid and upper zones. Septal thickening is more frequently seen than honeycombing. Predominant High Resolution Computed Tomography pattern identified from our study is reticular rather than ground glass opacity.

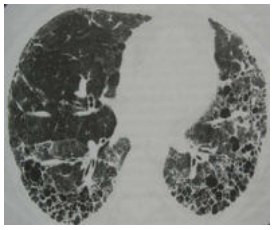
The pulmonary symptoms most commonly presented were non-productive cough, breathlessness, chest pain and haemoptysis. Of this nonproductive cough was present in 22 patients (88%) followed by breathlessness in 19 patients (76%), chest pain in 7 patients (28%) and 2 patients (8%) with haemoptysis.

Figure1: Axial HRCT shows fine intralobular and interlobular septal thickening and ground-glass opacification in NSIP pattern.



(**Source:** From available cases in study)

Figure 2: Honey combing – indicates the advanced stage of Interstitial lung diseases



(**Source:** From available cases in study)

Table – 1 Sex Incidence Of Ilds In Ctds

Types	FEMALE		MALE	
	No.	%	No	Percentage
Rheumatoid Arthritis	6	42.8	3	27.2
Systemic Sclerosis	3	21.4	5	45.5
Systemic Lupus Erythematosus	2	14.2	0	-
Polymyositis/Dermatomyositis	1	7.1	1	9.1
Sjogrens syndrome	2	14..2	0	-
Overlap syndrome	0	-	2	18.2
Total	14	100	11	100

Table-2 Reticular Patterns

TYPES	No.	PERCENTAGE
Septal thickening (Inter / intra lobar)	16	64%
Sub pleural thickening	7	28%
Honey combing	6	24%
GGOs	11	44%

Of the reticular pattern, inter / intralobar septal thickening is more frequent than either honeycombing or sub pleural thickening.

So High resolution computed tomography (HRCT) is a more sensitive method and is considered central in the diagnosis of ILDs. Abnormalities observed on HRCT can help to identify specific ILDs. HRCT also can be used to evaluate the patient's prognosis, while disease progression can be assessed through serial imaging.

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