Case Report

Interstitial lung disease: A case report
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Abstract
A 65 years old farmer was admitted in Medicine ward with the complaints of progressive exertional breathlessness, non-productive cough and recurrent episodes of fever. The patient had clubbing and chest examination revealed end inspiratory crackles. Chest x-ray, CT scan of chest and spirometry revealed the features of interstitial lung disease (ILD). So we diagnosed the case as idiopathic pulmonary fibrosis variety of ILD. We reported this rare case for developing awareness among the clinicians.

Introduction
Interstitial lung disease (ILD) comprises a group of lung disorders characterized by various levels of inflammation and fibrosis due to injury to the alveolar epithelial lining. Following injury the alveolar epithelial cells (AEC) actively participate in re-epithelialization or in the development of fibrosis through the process of epithelial mesenchymal transition (EMT), endoplasmic reticulum (ER) stress pathway, apoptotic pathway and developmental pathway. EMT has an important role in the development of many tissues during embryogenesis. Similar cell changes are recapitulated during pathological process such as fibrosis.

In the epithelial mesenchymal transition (EMT) process there occurs complex changes in the alveolar epithelial cells (AEC) in their architecture and behaviour. There is loss of epithelial characteristics and gain of mesenchymal properties leading to generation of fibroblast and myofibroblast. The molecules that regulate ER stress response could be the targets for drugs in the ILD.

The injuries to the epithelial cells may be environmental, radiation, occupational agents, infections and drugs. Genetic factors may also be responsible. Familial cause of ILD transmitted as autosomal dominant trait with reduced penetrance have been reported. The majority of ILD cases are considered idiopathic without a curable treatment. There is a rising trend of ILD cases worldwide with international differences in the prevalence rates. ILD has more than double the incidence rate in UK over the recent years. Almost all of the cases are idiopathic pulmonary fibrosis (IPF) and there was significant association with ischaemic heart disease as co-morbidity. Study was conducted regarding the age, sex, smoking habits, co-morbidity of diabetes mellitus, atrial fibrillation, hyperlipidaemia and use of drugs (such as beta-blockers, statins, aspirin, non-steroidal anti-inflammatory drugs, loop diuretics and proton pump inhibitors). But no significant association was found.

Case Report
A 65 years old male farmer presented with the complaints of breathlessness and cough for one year and fever for 15 days. Breathlessness increased with physical exertion and gradually deteriorated over the last one year. For the last one month he felt respiratory distress during activities of daily living and even during self care. Cough was non-productive and progressively distressing. He noticed recurrent episodes of fever over this one year.

He was a smoker having 1 pack (10 sticks)/day for last 40 years. He was active as a farmer throughout his whole occupational life. He was non-diabetic and non-hypertensive. He had clubbing (Fig-I) and chest examination revealed end inspiratory crackles.

Fig-I: Clubbing.

Other systemic examination revealed normal findings. Complete blood count, urine routine microscopic examination, blood sugar, serum creatinine, sputum examination for acid fast bacilli, mantoux test (MT) and electrocardiogram revealed normal findings. Chest x-ray revealed diffuse reticulo-nodular opacity involving all the zones of both lung fields (Fig-II).

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During pathological process such as fibrosis during embryogenesis. Similar cell changes are recapitulated. EMT has an important role in the development of many tissues participating in re-epithelialization or in the development of fibrosis through the process of epithelial mesenchymal transition (EMT), endoplasmic reticulum (ER) stress.

ILD transmission has been reported. The majority of ILD cases are considered idiopathic without a curable treatment. There is a rising trend of ILD cases worldwide with international variations.

Various drugs are associated with ILD such as amiodarone, non-steroidal anti-inflammatory drugs, chemotherapeutic agents, colony stimulating factors, interferon, anti-thymocyte globulin, intravenous immunoglobulin and immunosuppressive agents (methotrexate and cyclophosphamide). This patient has no history of taking any of these drugs.

ILD is a major feature of connective tissue disease such as systemic lupus erythematosus, systemic sclerosis, dermatomyositis, Polymyositis and rheumatoid arthritis. This patient has no features of any connective tissue diseases. He had no family history of ILD.

This patient had clubbing which is usually present in idiopathic pulmonary fibrosis. So we decided that our patient is a case of idiopathic pulmonary fibrosis variety of interstitial lung disease.

**References**

ILD transmitted as autosomal dominant trait with reduced EMT has an important role in the development of many tissues. Epithelial mesenchymal transition (EMT), endoplasmic reticulum (ER) stress, and fibrosis through the process of epithelial mesenchymal transition (EMT) can lead to the generation of fibroblasts and myofibroblasts. The epithelial characteristics and gain of mesenchymal properties (AEC) in their architecture and behavior. There is loss of injury to the epithelial cells, which may be environmental, targets for drugs in the ILD. ILD disorders characterized by various levels of inflammation and fibrosis due to injury to the alveolar epithelial lining. The injuries to the epithelial cells may be environmental, and they are considered idiopathic without a curable treatment. There is a rising trend of ILD cases worldwide with international differences in the prevalence rates. ILD has more than double the incidence rate in UK over the recent years.

We reported this rare case for awareness among the clinicians. The patient was a farmer. But clubbing is not a usual feature in occupational life. He was non-diabetic and non-hypertensive. He had clubbing (Fig-I) and chest examination revealed end inspiratory crackles. Chest x-ray, CT scan of chest and spirometry revealed features of fibrosis with linear and nodular opacities leading to architectural disruption of all the zones of both lung fields (Fig-II).

Almost all of the cases are idiopathic pulmonary fibrosis (IPF). This patient had clubbing which is usually present in patients with IPF. Computerised tomographic (CT) scanning of the chest revealed diffuse reticulo-nodular opacity involving all the zones of both lung fields (Fig-III).


CASE REPORT

