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INTERSTITIAL LUNG DISEASE: AN UNPREDICTABLE DISEASE

Waqas Jehangir[1], Romil Sareen[2], Nneka Iroka[1] and Abdalla Yousif[1]

[1]Resident, Internal Medicine, Raritan Bay Medical Center, 530 New Brunswick Ave Perth Amboy, New Jersey, USA.
4th Year Medical Student[2], Ross University School of Medicine, Portsmouth, Dominica, West Indies.

Corresponding Author:- **Waqas Jehangir**
E-mail: wjehangir@hotmail.com

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ABSTRACT
A 58-year-old male ex-smoker with a past medical history of diabetes mellitus, hypertension, obesity, obstructive sleep apnea, nephrolithiasis, dyslipidemia arthritis and idiopathic pulmonary fibrosis on immunosuppressive treatment with Mycophenolate mofetil, prednisone and Bactrim prophylaxis presented to the emergency room with worsening shortness of breath of one week associated with productive cough but most of the time cough is dry. He developed URI symptoms a week prior to admission. He denied having chest pain, fever or chills. Family history was significant for lymphoma, scleroderma and Crohn's disease in his mother.

CASE REPORT

On physical examination, patient was in respiratory distress with Blood pressure 110/60 mmHg, respiratory rate 30/min and pulse 92/min. He was afebrile. Lungs exam showed bilateral crackles and rhonchi. In the emergency room, ABGs showed a pH of 7.37, PCO_2 37 mmHg and PO_2 less than 36 mmHg with bicarbonate of 21.9mmol/L. He had O_2 saturation on pulse oximetry in the range of 70%, was given non-rebreathing mask and it corrected to above 90-95%. Chest x-ray showed bilateral increased interstitial markings and there was questionable left-sided consolidation (Figure 1). Laboratory data showed White cell count 16 K/uL, hemoglobin 13 g/dL, and platelet count 266,000 K/uL, blood chemistry was normal. Later, patient was transferred to the intensive care unit for worsening respiratory distress. Patient was put on Bipap. Intravenous levofloxacin and methylprednisolone was also started. CT scan of the chest was performed which showed diffuse ground-glass appearance of the lungs with mosaic perfusion of air entrapment with worsening of Interstitial fibrosis (Figure 2). Patient's condition deteriorated and he was incubated. Patient was later transferred to a specialized pulmonary center for lung transplantation but he eventually died of respiratory failure.

DISCUSSION

This case illustrates the importance of suspecting a worsening interstitial lung disease with an episode of upper respiratory tract infection. Interstitial lung disease comprises of a broad spectrum of lung pathologies that are mainly idiopathic but could also be due to environmental and occupational exposure. The 2 most common known causes of interstitial lung diseases or ILD are asbestos and Rheumatoid arthritis. A patient with ILD may present with a dry cough or shortness of breath that may be worse upon exertion or even present at rest depending on the severity of ILD and how far the disease has spread [1]. The lung tissue responds to any injury by initiating a series of events that counteract the inciting event and eventually regenerating the lost or damaged tissue. When this process goes out of control, the tissue might become thickened preventing the transfer of oxygen to the lungs [2].

A good way to diagnose ILD would be to begin with really good history taking. A lot of risk factors can be determined by a patient's possible exposure to harmful chemicals at work, his/her smoking and other substance abuse history. A history of radiation and chemotherapy in the past may also make a person prone to developing ILD in the future [3]. A chest X-rays could prove to be the

single most important test to diagnose ILD and more invasive tests such as CT scans can help narrow down the diagnosis further. Some of the other more definitive tests include taking a tissue biopsy and examining them under a microscope to better appreciate the extent of the damage and initiate proper treatment accordingly. The treatment for ILD is mostly supportive since lung scarring is usually irreversible. A detailed conversation with the patient should be the first step in determining what he knows about his ailment and how invasive he is willing his treatment options to be based upon the severity of the damage. Immunosuppressants can be the first line treatment option in most cases followed by oxygen therapy and pulmonary rehabilitation. Unfortunately, the treatment doesn't just end at the above options. Constant monitoring of the patient's clinical symptoms should be done to ensure he doesn't relapse and a lot of emphasis should be placed upon modifying risk factors that can exacerbate a patient's condition. All efforts should be made to quit smoking and the patient should be appropriately vaccinated to prevent any concurrent respiratory infections that may further exacerbate the condition [1].

Figure 1. Chest x-ray showing bilateral increased interstitial markings

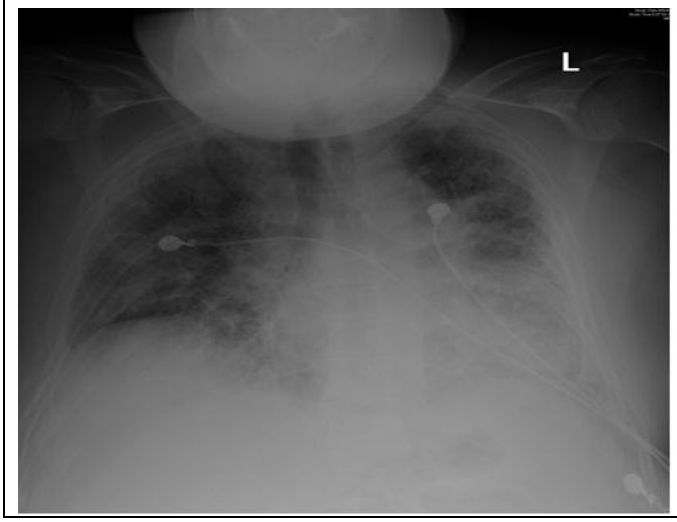
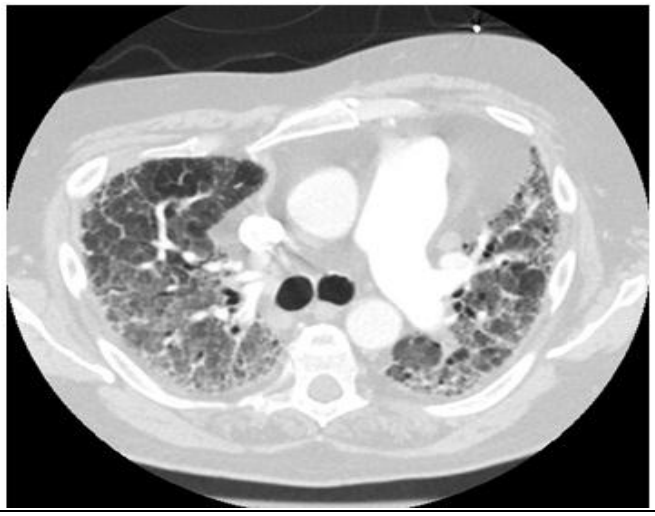


Figure 2. Chest CT Scan without contrast showing diffuse ground-glass appearance of the lungs with mosaic perfusion of air entrapment with worsening of interstitial fibrosis



CONCLUSION

From this study we can see and learn that once worsening of interstitial lung disease start it is very hard to treat and the best available treatment is transplantation.

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