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Introduction: Nonspecific interstitial
Pneumonia Development after Fire Extinguisher Dust Inhalation
Maureen McElligott and Daniel Hershberger
Mentor: Daniel Hershberger
Program: Internal Medicine
Introduction: Nonspecific interstitial pneumonia (NSIP) is a form of chronic
inflammatory idiopathic interstitial
pneumonia. It typically presents with months of dyspnea. NSIP is frequently associated with
connective tissue disease, HIV, and drug-induced lung disease.
Case Presentation: A middle-aged patient, non-smoker with hypertension and OSA on CPAP presented with six months of exertional dyspnea and right-sided chest pain. The patient developed a new exertional 10 LPM supplemental oxygen requirement after significant smoke and fire extinguisher dust inhalation. The patient denied a family history of lung disease or connective tissue disease, but had faint inspiratory crackles, and no leg edema.
ANA, RF, ANCA, IgE, CK, aldolase, anti-
CCP, HIV, and hypersensitivity pneumonitis panel were unremarkable. Chest CT revealed diffuse ground glass sparing the costophrenic angles without traction bronchiectasis and honeycombing. Pulmonary function testing revealed FEV1/FVC of 82%, TLC was 56% predicted, and DLCO was 63% predicted. EF was normal and pulmonary artery systolic pressure was 45-50mmHg. Right lower lobe wedge biopsy demonstrated alveolar wall thickening with focal lymphocytic inflammation in a fairly uniform distribution without honeycombing, consistent with NSIP. The patient underwent pulmonary rehabilitation and was started on Prednisone and transitioned to Azathioprine resulting in improvement of his dyspnea.
Discussion: Diagnosis of NSIP is dependent on multidisciplinary interactions among pulmonology, radiology, and pathology to differentiate it from other interstitial lung diseases and guide treatment. The patient developed hypoxic dyspnea within months of fire extinguisher dust exposure and lacked other risk factors for development of NSIP. Fire extinguisher exposure is typically associated with desquamative interstitial pneumonia, and per our literature review, there are no reported cases of fire extinguisher exposure related to NSIP, making this case unique.
Conclusion: It is probable that exposure to smoke and fire extinguisher dust inhalation triggered the development of NSIP.
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