

Chronic dry cough: Could it be your polymyalgia rheumatica?

Polymyalgia Rheumatica (PMR) is a frequent clinical syndrome seen mainly in elderly patients with clinical manifestations of pain and stiffness in the neck, shoulder, and hip. Erythrocyte Sedimentation Rate (ESR) and C-Reactive Protein (CRP) are the most common inflammatory markers found to be elevated in PMR. The main well-known treatment for polymyalgia rheumatica is steroids which can result in a complete resolution of the symptoms. Here, we report a case of a 75-year-old man who presented with respiratory symptoms as the initial manifestation of his polymyalgia rheumatica. Lung involvement should be assessed in patients with polymyalgia rheumatica and respiratory symptoms such as exertional dyspnea and cough in some cases may be the presenting symptoms.

Keywords: polymyalgia rheumatica • erythrocyte sedimentation rate • C-reactive protein • cough

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Introduction

Polymyalgia rheumatica is an inflammatory rheumatic condition characterized clinically by aching and morning stiffness of the shoulders, hip girdle, and neck, seen mainly in elderly patients. It is associated with elevation of erythrocyte sedimentation rate and C-reactive protein. The diagnosis of PMR is often challenging because of large differential diagnoses including late-onset rheumatoid arthritis, giant cell arteritis, polymyositis, dermatomyositis, other connective tissue diseases, and sometimes malignant neoplasms [1]. Besides the clinical findings of the disease, systemic manifestations such as weight loss, fever of unknown origin, general malaise, loss of appetite, and anemia could be present.

Lung involvement in PMR is rare and has been seen in the form of pulmonary nodules, infiltrates, or vasculitis [2]. We report a case of a 75-year-old man who presented with a dry cough as one of his PMR initial symptoms.

Case report

A 75-year-old Caucasian non-smoker male, with no significant past medical history, was referred to our rheumatology clinic with complaints of polyarthralgia. A year prior to his rheumatology visit, he had a dry cough

along with an unintentional weight loss of 15 pounds. There was no history of orthopnea, paroxysmal nocturnal dyspnea, wheezing, hemoptysis or other respiratory symptoms. Around the same time, he started to experience some stiffness and pain in his shoulders and hips and had difficulty getting on and off his bicycle.

He underwent an extensive workup, including Computed Tomography (CT) of the chest, endoscopy, and colonoscopy to evaluate for possible underlying malignancies which all were normal. Magnetic Resonance Imaging (MRI) of his shoulders showed significant synovitis in the glenohumeral joints and mild subacromial bursitis of bilateral shoulders. His laboratory studies revealed elevated ESR and CRP levels. Screening tests for autoimmune antibodies, including rheumatoid factor, anti-citrulline antibody, anti-nuclear antibody, and infection screen, including tuberculosis, were negative. He subsequently was started on prednisone 20 mg daily and this helped resolve all his symptoms including the cough, muscle stiffness, and fatigue. Based on elevated ESR, the subacute onset of the shoulder and hip girdle pain and stiffness, evidence of bursitis in shoulders, and great response to steroids, the diagnosis of polymyalgia rheumatica was made.

He continued to do well with the tapering of prednisone. On the follow-up visit, he reported that almost all of his symptoms were resolved, and his laboratory values showed normalization of the ESR and CRP level. When his prednisone was tapered to 5 mg daily, his cough and stiffness recurred and his inflammatory markers were up trending. Repeat pulmonology workup including the chest x-ray (CXR) and Pulmonary Function Test (PFT) were all normal.

He was then placed back on the higher dose of prednisone (20 mg daily) with significant improvement of his symptoms and normalization of his inflammatory markers. A second attempt to taper the prednisone below 5 mg daily caused the cough and stiffness to relapse and CRP to increase as well. A magnetic resonance angiography (MRA) of the abdomen, chest, and neck was done to rule out large vessel vasculitis as a cause of high inflammatory markers and cough, however, these studies were all found to be normal. He was then started on oral methotrexate, prednisone was successfully tapered off and his symptoms were well controlled on the new treatment regimen.

Discussion

PMR is an autoimmune disease characterized by stiffness of the neck, shoulder girdle, and pelvic girdle. The diagnosis of PMR relies mainly on clinical features, and also on the exclusion of inflammatory and non-inflammatory conditions such as Giant Cell Arteritis (GCA). GCA and PMR often coexist, however, GCA usually presents with fever, jaw pain, and temple pain. There have been rare cases of GCA, presenting with respiratory symptoms such as dry cough and shortness of breath [3]. A small number of cohorts have described a spectrum of lung involvement in patients with PMR and GCA including pulmonary nodules, pleural effusion, pulmonary artery vasculitis, alveolitis, fibrosis, Bronchiolitis Obliterans Organizing Pneumonia (BOOP), malignancy, and infection [1,4,5].

Chronic dry cough as a presentation of PMR is very uncommon. However, there have been a few case reports and studies of GCA presenting with cough. T Zenone et al. conducted a retrospective chart review of all the patients who were evaluated in their institution for GCA, and they reported a link between cough and the importance of the inflammatory reaction in those patients [3]. As per their study, GCA should be considered

in the differential diagnosis of chronic dry cough [3]. Currently, pulmonary involvement in PMR has not been adequately studied. The correlation between Interstitial Lung Disease (ILD) and bronchiolitis obliterans organizing pneumonia and PMR have been studied but not been completely explained [2,6]. Respiratory symptoms in PMR, including dyspnea, orthopnea, and dry cough, can be overlooked and attributed to the patient's muscular involvement [1]. Modalities that can help with diagnosis of underlying lung disease are; High-Resolution Chest Tomography (HRCT), pulmonary function test and, Positron Emission Tomography (PET) scan [6,7]. It is observed in our case that treatment with steroids can be helpful with the resolution of the cough and the rest of reported PMR symptoms, but as per guidelines, we are restricted to offer more than 25-30 mg of steroids [8]. Introduction of steroid-sparing drugs, such as azathioprine and methotrexate might be an option we may consider further down the road to manage polymyalgia rheumatica.

Conclusion

Cough has been reported as an unusual presentation of giant cell arteritis but not the PMR. In our patient, we believe his cough was one of the symptoms of his PMR without him having any signs or symptoms such as visual disturbance or temporal headache concerning for GCA. Given his normal PFT and CT scan of the chest, underlying lung diseases were ruled out. Also, his cough always presented with elevated inflammatory markers and stiffness in his shoulders and hips and responded dramatically to steroids.

Compliance with ethical standards

No specific funding was received from any bodies in the public, commercial or not-for-profit sectors to carry out the work described in this article.

Conflicts of interest

The authors declared no conflicts of interest.

Ethical approval

This article does not contain any studies with human participants or animals performed by any of the authors. The patient has provided permission and a written consent to publish his case, and the identity of the patient has been protected.

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