



CRYPTOGENIC ORGANIZING PNEUMONIA AS A LATE PHASE COMPLICATION OF COVID-19 DISEASE

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Background:

Cryptogenic organizing pneumonia (COP) is a form of diffuse interstitial lung disease characterized by leakage of plasma proteins, recruitment of fibroblasts, and formation of fibrin within the alveolar lumen. Radiological findings typically include peripheral consolidation, ground-glass infiltrates and/or solitary nodules. It is reported that the incidence of organizing pneumonia is 12.5% in a severe coronavirus disease 2019 (COVID-19) survivor's cohort (1). Pathogenesis of COP is still not clear, but can be connected to activation of inflammatory and fibroproliferative cells, increased production of vascular endothelial factor and many others. Therefore, patients with COP following COVID-19 infection, can benefit from corticosteroid therapy.



Conclusion:

Dyspnea following COVID-19 disease can be a leading clinical feature of postinfectious COP. Prolonged, carefully tapered corticosteroid therapy can result in full recovery.

Case:

A 42-year-old female was hospitalized in January 2022 for severe COVID-19 pneumonia. She was treated with remdesivir, corticosteroids with high flow oxygen. After hospital discharge, dyspnea progressed. A chest computerized tomography (CT) scan revealed extensive ground infiltrates of both lungs. She underwent short-term corticosteroid therapy treatment which resulted in transient clinical and radiological improvement. In April 2022, she was referred to our clinic due to progression of dyspnea. Chest CT scans showed the progression of bilateral pulmonary interstitial infiltrates, which radiomorphologically corresponded primarily to organized pneumonia. Slightly reduced values of VC and FVC were recorded by spirometry [VC 79%, FVC 75%, FEV1 77%, FEV1/FVC 0.83, PEF 121%, MFEF (FEF 25- 75) 75%]. Diffusion capacity for CO was slightly reduced (66%), transfer coefficient was 95%, alveolar volume 69%. Bronchoscopy, bronchoalveolar lavage (BAL) and transbronchial lung biopsy were performed. The cellular composition of the BAL was as follows: phagocytes 70%, neutrophil granulocytes 15%, eosinophils 14%, lymphocytes 1%. BAL immunophenotyping showed that of the total number of cells, the proportion of all T-cells was 4.5%, CD4+ T-cells 3.5%, and CD8+ T-cells < 1%. The diagnosis of COP was made. Patient was treated by the corticosteroid protocol with initial doses of prednisone of 1mg/kg per day (using ideal body weight) for 6 weeks, after which we tapered the dose in two 4 week steps to 0,25mg/kg per day. The total duration of treatment was 6 months. Symptomatic improvement occurred after two weeks of treatment. Control chest CT scans show complete resolution of bilateral interstitial infiltrates. The patient is symptom-free during the follow-up period.

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