Therapy Of Post-Covid Fibrotic Changes

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ABSTRACT

Among the extensive manifestations of post-covid syndrome, cough is often found. Most researchers interpret its nature as post-infectious. In some patients, post-infectious cough becomes productive and effective treatment requires combined mucoactive therapy. Also, since the beginning of the pandemic, enough clinical observations of spontaneous pneumothorax have accumulated in the literature. The risk of this complication is present even in patients who are not burdened with chronic lung diseases, as well as in spontaneous breathing. The study of the mechanisms of development of spontaneous pneumothorax in COVID-19 is necessary for the development of further therapeutic and preventive measures. Traction bronchiectasis occurs in 27–52.5% of cases of novel coronavirus infection (NCI).

Keywords: COVID-19, cough, post-COVID syndrome, bronchiectasis, bronchial asthma, pneumothorax, hyperventilation syndrome.

Introduction

In December 2019, the world faced a new coronavirus infection (NCI). The medical community has made unprecedented efforts aimed at intensive study of the clinical and epidemiological features of the disease and the development of new means of its prevention and treatment. As SARS-CoV-2 spreads and long-term manifestations of the disease are monitored, evidence has begun to accumulate that the vast majority of patients with acute symptoms persist for several months, but some new ones appear. So far, no consensus has been formed regarding the terminology and clinical definition of this new condition, which is more often described as post-COVID syndrome, or long-term COVID [1, 2].

Materials And Methods

Cough occupies a special place among the numerous manifestations of post-COVID syndrome. According to the frequency of occurrence, it is the 2nd symptom of the acute period of the disease after fever. Complaints of cough are presented by 59–82% of patients [3]. According to a prospective analysis performed 100 days after the acute period, symptom persistence was demonstrated in 17% of patients [4]. Most researchers interpret the nature of this cough as post-infectious, while emphasizing the need for further study of its nature.

Results And Discussion

Post-infectious cough

The "entrance gate" of HCI is the epithelium of the upper respiratory tract; therefore, cough is recognized as a characteristic sign of the disease. Its diversity is noted in terms of the timing of occurrence, duration and nature [3]. Most often, with NCI, a dry excruciating cough is provoked, but in some patients it becomes productive.

Clinical Case #1

Patient S. (born in 1954) consulted a pulmonologist on February 10, 2021 with

complaints of cough with mucus sputum, sweating, and rapid fatigue.

Smokes for 46 years 1/2 pack of cigarettes per day. Until December 2020, he had no complaints from the respiratory system.

In December 2020, he underwent a mild NCI, confirmed by a positive test for the SARS-CoV-2 virus by polymerase chain reaction (PCR), was treated on an outpatient basis. The temperature steadily returned to normal from mid-January 2021, but the cough persisted - initially dry, over the past 2 weeks. – moist, with the release of a moderate amount of mucopurulent sputum. Seen by a therapist. Computed tomography (CT) was performed, according to which focal seals in the lungs, presumably fibrous, were detected. Convincing evidence for the presence of infiltrative changes has not been received.

Acute cough as a manifestation of spontaneous pneumothorax

Since the beginning of the pandemic, clinical descriptions of spontaneous pneumothorax began to accumulate in the literature. It was emphasized that this is a rare complication of COVID-19, and in most reported cases of pneumothorax, there are no traditional risk factors described previously (age - 10-30 years, male gender, constitutional features), or underlying lung disease (chronic obstructive disease). lungs, α1-antitrypsin deficiency, trauma) [2].

It is possible that the relationship between COVID-19 and spontaneous pneumothorax is based on several mechanisms. The formation of cysts in the lung tissue in NCI was first noted in China at the beginning of the pandemic and subsequently confirmed by the results of studies, according to which a progression of changes from areas of consolidation to bullous reorganization was demonstrated. Cases of cyst formation have been described in patients who did not receive respiratory support; therefore, barotrauma as the cause of their formation was excluded [3].

Clinical observation No. 2

Patient M. (born in 1977) was hospitalized on November 27, 2020 in the department of thoracic surgery with complaints of a pronounced dry cough, pain in the right half of the chest.

There is no history of chronic respiratory diseases. I do not smoke. The last CT scan of the chest was performed on December 19, 2018, according to which focal, destructive, and infiltrative changes were not detected.

In August 2020, the patient underwent a mild NCI, confirmed by a positive PCR test for the SARS-CoV-2 virus, and was treated on an outpatient basis. The condition returned to normal by mid-September 2020, the patient began to work.

From 11/21/20 there were complaints of dry cough. By November 24, 2020, against the background of a hacking cough, pain appeared in the right half of the chest, in the subscapular region on the right, radiating to the right shoulder. When contacting a doctor, the condition was regarded as a manifestation of osteochondrosis, a consultation with a chiropractor was recommended. Against the background of the massage, there was a deterioration in well-being in the form of a sharp increase in pain, in connection with this, the patient was urgently hospitalized.

According to the CT scan of the chest on November 27, 2020, there was a large amount of gas and liquid (up to 700 ml) in the right pleural cavity. The parenchyma of the middle and partially lower lobe of the right lung was collapsed due to compression. Against this background, fresh focal and infiltrative changes in the lung tissue are not reliably observed. In the subpleural sections of both lungs, single small foci of compaction of the bronchial walls are not thickened, the content in their lumen is not determined. Intrathoracic lymph nodes are not enlarged (Fig. 1).

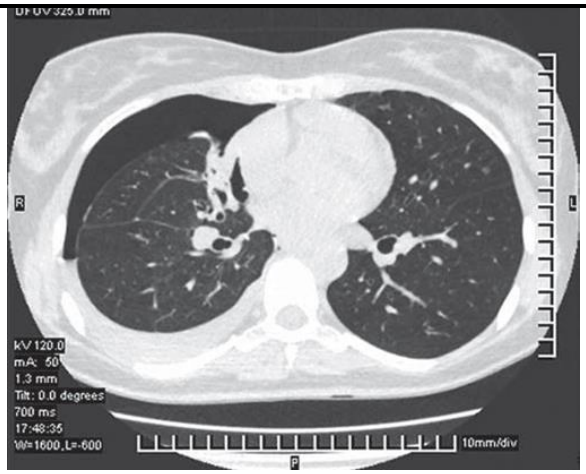

Figure 1. Computed tomography of the patient M., 11/27/20

According to the above clinical observations, the importance of a differentiated approach to coughing in the post-COVID period has been demonstrated. An acute cough may indicate not only an infectious pathology of the upper and lower respiratory tract, but also be a manifestation of spontaneous pneumothorax, pulmonary embolism, aspiration syndrome and other emergency conditions. When clarifying the origin of subacute or chronic cough, additional research and a multidisciplinary approach are often required, since this symptom is not always caused by pathology of the respiratory system.

Conclusion

The extent and severity of long-term complications after undergoing NCI COVID-19 remains to be seen, however, according to accumulated data, it has been shown that many patients experience persistent respiratory symptoms several months after an acute illness, due to various reasons. Particular attention is required in the management of patients with acute cough, as it may indicate a life-threatening situation.

References

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