

Case report



THE LONG ARM OF COVID-19

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ABSTRACT

Chickenpox is often described as a benign disease. However, patients with varicella and coinfection with COVID-19 may develop severe respiratory infection. The interest in the presented case arose from the unusual fast progress of the chickenpox which led to a lethal outcome in a patient with unsuspected COVID-19, proven by PCR after his death. The underlying disease – cancer of the tongue was in remission and wasn't a cause for immunosuppression which could be a reason for the clinical course of the disease.

Aim: To present an interesting case of a 44-year-old man with a previous diagnosis of oral cancer who died after he was diagnosed with varicella and tested positive postmortem for COVID-19.

Patient and method: A 44-year-old patient was admitted to the hospital urgently and stayed for 3 and a half hours in the clinic of infectious diseases of UMHAT "St. George", Plovdiv, with a diagnosis of varicella. The patient has accompanying diseases like oral cancer (root of the tongue) and hypertension. Epidemiological data are for contact and fresh infection with varicella, progressing rapidly and beginning of symptoms of respiratory insufficiency and lethal outcome. Due to the fulminant course and the short period of time, the positive PCR result for COVID-19 was proved after the patient died.

Conclusions: Undiscovered comorbidity of COVID-19 and varicella without any other reason for immunosuppression could induce unusual severe course of the chickenpox.

Keywords: chickenpox, Covid-19, lethal outcome, oral cancer,

INTRODUCTION:

It is more than three years since the beginning of the Covid-19 pandemic, and we haven't stopped being surprised by the potential powers of that virus. It is known that the course of Coronavirus disease 2019 is severe in patients with immunodeficiency due to different reasons [1, 2, 3]. Endogenous and exogenous nosocomial infections of COVID-19 shouldn't be underestimated in hospitals as a great threat for hospitalized patients [4]. There are cases which are misdiagnosed or masked by other leading diseases. There is no other case described in the available literature with a severe clinical form of chickenpox, comorbidity with unsuspected COVID-19 infection and oncological disease, which leads to a lethal outcome. Though the cause-effect relationship is a question of debate, it could be possible to reactivate varicella-zoster virus (VZV) after the application of different vaccines against COVID-19 [5].

COVID-19 is a new disease that can affect the respiratory system in adults. Though varicella is described as a benign disease, patients with varicella and coinfection with COVID-19 may develop a serious respiratory infection [6].

We present a 44-year-old man with a lethal outcome after comorbidity of COVID-19 and varicella and with an underlying disease - cancer of the tongue. A similar coinfection by the two viruses and development of pleuropneumonia in a child has been reported by Le Roux P, et al. [6], discussing the probability of modulation of the immune response due to the two viral infections.

The purpose of this review is to discuss the possibility of severe course and lethal outcome in varicella comorbidity with COVID-19.

CASE DESCRIPTION:

A 44-year-old man was hospitalized after emergency admission and stayed at the Clinic of Infectious diseases, UMHAT "St. George", Plovdiv, for 3 and a half hours with a diagnosis of chickenpox. The patient has un-

derlying diseases of oral cancer and arterial hypertension. Seven days before admission, the patient has a clinical manifestation of varicella. Epidemiological data reveal that he was in contact with his 5-year-old daughter, who was ill from chickenpox. The disease progressed rapidly with the expansion of intensive polymorphic, maculopapular, and vesicular exanthem with pustules, crusts and enanthem. The patient's condition worsened fast. He developed symptoms of respiratory failure, which were found during the emergency admission, like severe inspiratory dyspnea, total chest retractions, shallow breathing 40/min, O₂ Sat – 77% during oxygen supply of 15 l/

min with storage balloon mask 95%.

There were weak vesicular breath sounds bilaterally with no wheezes. The patient was hypotensive, his heart rate was 113 beats per minute with regular heart rhythm and muffled heart sounds. The abdomen was soft upon palpation without pain. No enlarged organs and neurological symptoms were found. After consultation with a reanimator, the patient was intubated and placed on invasive mechanical ventilation.

The basic abnormalities found during multiple laboratory tests are shown in Table 1.

Table 1. Laboratory test results

WBC	PLT	ESR	Fbg	D-Dimer	CRP	ALT	AST
2.86 10 ⁹ /l	70.0 10 ⁹ /l	47 mm/h	7.74 g/l	8.51 mg/l	645.0 mg/l	215.0 U/l	443.0 U/l

Chest X-ray was not performed due to objective reasons. An adequate therapy was performed, including oxygen, intravenous reanimation, Zovirax 750mg i.v. and afterwards, atropine 3 ampules i.v., adrenaline 1 ampule and intubation. Due to the short stay in the clinic, the positive PCR for COVID-19 was proved after the patient's death. That explains the severe clinical status of a patient with chickenpox, the pulmonary changes with respiratory failure and the laboratory results, which are typical for COVID-19.

DISCUSSION:

There is no such case with an adult patient in the available literature. We found a similar one in a 12-year-old boy with varicella and COVID-19 and a favorable outcome [7]. It is not a case of varicella-like rash in COVID-19, which is present in the literature [8, 9] but a combination of the two diseases. COVID-19 wasn't diagnosed at the beginning, while chickenpox started with epidemiological and typical clinical data. Although the patient's stay at the hospital was too short, the diagnosis of COVID-19 was suspected by the pulmonary findings and the paraclinical data. Later, after the patient's death, the diagnosis was confirmed with a positive PCR test. The case is interesting since the diagnosis of COVID-19, confirmed postmortem, is an additional, important background cause for the lethal outcome in this

immunocompromised patient. The presence of 'hidden' COVID-19 explains the heavy clinical status of the patient. Differential diagnosis was discussed with bacterial superinfection in immunocompromised patient. In favor of the latter were the pustulation of the rash and suspected but unconfirmed pneumonia. The laboratory data /leucopenia, thrombocytopenia, high D-Dimer, fibrinogen, CRP (C-Reactive Protein), ESR (Erythrocyte Sedimentation Rate) and liver enzymes were usual for COVID-19. The mechanism of infection with COVID-19 remains unknown because of a lack of epidemiological data. A nosocomial infection is possible during the previous hospitalization, which is in the time range of the incubation period of COVID-19.

Impaired, immunocompromised patients with uncertain, heavy course of another underlying disease should be suspected of COVID-19, which requires different therapeutic algorithms. In these cases, COVID-19 is a background disease and could be a reason for lethal outcome. It should be considered in all cases with appropriate clinical status and laboratory tests, including those not tested or even negative for COVID-19.

CONCLUSION:

Unsuspected comorbidity of COVID-19 and varicella without any other reason for immunosuppression could induce unusual severe course of the chickenpox.

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