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Case Report

Testicular Pain: an atypical presentation of COVID-19

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Abstract

The novel coronavirus (SARS-CoV-2) has caused widespread pneumonia in the world, with typical signs and symptoms of viral pneumonia such as cough, sore throat, fever, fatigue, and myalgia. Atypical signs and symptoms such as cardiac, gastrointestinal, neurological, and genital manifestations also have been reported. These atypical symptoms may initially be misdiagnosed and patients may not treat them properly; thus, it is important to consider these atypical symptoms in such cases. In this article, we report a patient with testicular pain, an atypical and rare sign and symptom of Covid-19.

Keywords: Angiotensin-Converting Enzyme 2, COVID-19, Testicular Pain, Testis

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Introduction

In December 2019, the widespread pneumonia was caused by the novel coronavirus, severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), originating from Wuhan, China, with clinical manifestations very similar to viral pneumonia. This disease was called coronavirus disease 2019 (COVID-19), which was introduced as a pandemic by the World Health Organization (WHO) in March 2020 (1). SARS-CoV-2, a non-segmented and positive-strand RNA virus, belongs to the Coronaviridea family, which mainly infects humans and other mammals (2).

The clinical signs and symptoms of COVID-19 are very wide and would range from asymptomatic to severe form and even cause death. It has been observed that patients with underlying health conditions such as diabetes, hypertension, cardiovascular diseases, etc.

are more prone to the severe form. Major and typical manifestations of COVID-19 are respiratory symptoms (dry cough, sore throat, dyspnea), fatigue, myalgia, and fever. Fewer patients show symptoms such as headache, dizziness, nausea, vomiting, abdominal pain, and diarrhea. However, in some cases, patients refer with complaints such as extrapulmonary, atypical, and nonspecific manifestations including hemoptysis, cardiac symptoms (myocarditis, pericarditis, pericardial effusion), neurological (Guillain-Barre syndrome, viral encephalitis, toxic encephalitis, epilepsy, neuralgia, ataxia), gastrointestinal, ocular (conjunctivitis, epiphora), cutaneous (skin rashes, erythematous rashes, urticarial lesions, chicken pox-like vesicles) and genital manifestations.

arterial or venous thrombosis also has been reported in some cases. These atypical symptoms may lead to delayed or lack of diagnosis. As a result, the lack of isolation and treatment of these patients causes the virus to spread as quickly as possible and transmit the infection to other people in the community (1). In this case report, we report a patient with positive COVID-19 polymerase chain reaction (PCR) test who has been hospitalized with severe testicular pain.

Case

A patient, a 20-year-old soldier, referred to the urology clinic complaining about pain in both testicles. Examination of testicles and scrotum were normal. Ultrasound study showed mild hydrocele in the scrotal sac on both sides. However, other primary investigations were normal. The patient was diagnosed with epididiyomo-orchitis hence painkillers (diclofenac) were prescribed for him. Seven days later, the patient referred to the emergency room due to exacerbation of pain in both testicles, along with low-grade fever, weakness, severe lethargy, and drowsiness. The patient showed no respiratory, gastrointestinal, or urinary signs and symptoms. Unsafe sexual contact, sexual-transmitted disease (STD), and contact with COVID-19 patients were not mentioned. However, he reported a history of traveling to his hometown. On physical examination, the patient had tachycardia (pulse rate, PR = 115) and a 38.5°C fever, and also lymph nodes, testicles, and scrotum was normal. The report of abdomen, pelvis, kidneys, and urinary tract ultrasound was normal. The patient was hospitalized in the urology ward of the hospital for further diagnostic and therapeutic measures. According to further investigations, the laboratory data was normal and no evidence of lymphopenia (WBC = 10.1, lymphocyte = 2.70) or increased inflammatory markers (CRP=7, ESR=10) was found. Second ultrasound examination was performed and no evidence of stones or hydronephrosis in kidneys was found. Furthermore, the testicles were observed with normal and symmetrical dimensions and echo-pattern. Also, testicular Doppler ultrasound reports normal vascular flow rate. On physical examination, the testicular consistency was normal, while both testicles had severe tenderness. The temperature of the patient ranged from 37-37.5°C. Wright and 2ME tests were negative. Due to, severe weakness and lethargy which were disproportionate to examinations, COVID-19 PCR test was performed which was positive. However, the spiral high-resolution computed tomography (HRCT) of the lung showed no ground-glass opacity or any other

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evidence suggestive of COVID-19. Finally, the patient was transferred to the infectious diseases ward; however, he refused to continue treatment and was discharged with personal written consent.

Discussion

The novel coronavirus (SARS-CoV-2) has caused a widespread pneumonia in the world, with typical signs and symptoms of viral pneumonia such as cough, sore throat, fever, fatigue, and myalgia, and also atypical signs and symptoms such as cardiac, gastrointestinal, neurological, dermal, ocular, and genital manifestations. These atypical symptoms may be initially undetectable (1). It is not entirely clear whether SARS-CoV-2 can directly infect testicles or male genitalia or be sexually transmittable. A study by Song et al. found that no positive PCR test was reported for semen and testicular tissue biopsies, which suggests that SARS-CoV-2 cannot be transmitted sexually. Recent studies by bioinformatics analysis have also shown that ACE-2 (angiotensin- converting enzyme 2) receptors are the major cell receptors for the SARS-COV-2 spike protein due to their very similar amino acid sequences to SARS-CoV-2. Besides, lung tissue, ACE-2 is widely expressed on cells of the nervous system, renal cells, Leydig cells, Sertoli cells, and spermatogonia in the human testis, and it has been concluded that the testes might be a target tissue for SARS-CoV-2 (1, 3).

Abobaker et al. conducted a study on 81 men who tested positive for COVID-19 and found that COVID-19 may decreased testosterone levels, increased luteinizing hormone (LH) levels, and decreased testosterone/LH ratios. These results suggest that the virus damages testicular tissue by interaction with Leydig cells. In fact, they make this conclusion that SARS-CoV-2 could damage testicular tissue both by binding directly to ACE-2 receptors and indirectly by inducing inflammatory reactions and immune responses in the testes. They also showed the decreased count and motility of sperms during three months after COVID-19 infection, using semen analysis in patients with positive COVID-19 PCR tests (1).

A study by Ediz et al. found that while there were no findings of increased inflammatory markers associated with testicular pain or epididymal-orchitis in hospitalized patients with COVID-19, patients had complaints of severe testicular pain. In fact, they concluded that the mechanism of testicular pain in patients with positive COVID-19 PCR tests is correlated with the presence of SARS-CoV-2 receptor (ACE2) in many tissues, including kidneys, bladder, and testicular cells. The binding of the virus to these cells and the subsequent damage to these tissues, especially testicular tissue, would cause pain. They also found that having a history of epididymo-orchitis increases the risk of future testicular pain in people infected with SARS-CoV-2. They also stated that another cause of testicular pain in COVID-19 patients may be the presence of a defect in the blood-testis barrier (4). According to a research by Cardona Maya et al., testicular damage and germ cell destruction have been clearly and extensively seen in cases of positive COVID-19 PCR test, but they claimed that it is not yet clear whether the virus can be transmitted by semen or not (5). Wang and Xu also found that SARS-CoV-2 might cause extensive destruction of germ cells, decreases spermatozoa in seminiferous tubules, increases the thickness of the basement membrane in the testis, and infiltrates leukocytes and subsequently, spermatogenesis be impaired (6).

In this case report, the patient who had a positive COVID-19 PCR test had no complaints of respiratory or gastrointestinal manifestations. On physical examination, swelling and stiffness were not found in both testicle. Laboratory findings did not report lymphopenia or increased inflammatory markers in favor of COVID-19. Also, the ultrasound was reported to be completely normal and the patient only complained of severe pain in both testicles.

Conclusion

In conclusion, due to the wide range of clinical signs and symptoms of COVID-19, it seems necessary to pay attention to the signs and symptoms

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of the disease, especially atypical ones to be able to diagnose, treat, and isolate the patients accurately and in an appropriate time in order to prevent the rapid spread of the virus. It is also recommended that further studies on the complications and other atypical symptoms of COVID-19 be performed.

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Conflict of interest

The authors declare that they have no conflict of interest.

References

1. Abobaker A, Raba AA, Alzwi A. Extrapulmonary and atypical clinical presentations of COVID-19. J Med Virol. 2020;92(11):2458-2464.
2. Huang C, Wang Y, Li X, Ren L, Zhao J, Hu Y, et al. Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China. Lancet. 2020;395(10223):497-506.
3. Song C, Wang Y, Li W, Hu B, Chen G, Xia P, et al. Detection of 2019 novel coronavirus in semen and testicular biopsy specimen of COVID-19 patients. MedRxiv.2020
4. Ediz C, Tavukcu HH, Akan S, Kizilkan YE, Alcin A, Oz K, et al. Is there any association of COVID-19 with testicular pain and epididymo-orchitis? International journal of clinical practice. 2021;75(3):13753.
5. Cardona Maya WD, Du Plessis SS, Velilla PA. SARS-CoV-2 and the testis: similarity with other viruses and routes of infection. Reprod Biomed Online. 2020;40(6):763-764.
6. Wang Z, Xu X. scRNA-seq Profiling of Human Testes Reveals the Presence of the ACE2 Receptor, A Target for SARS-CoV-2 Infection in Spermatogonia, Leydig and Sertoli Cells. Cells. 2020;9(4):920.

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