

Zona Zoster Infection and Lymphadenitis After mRNA COVID-19 Vaccine: Case Report*

mRNA COVID-19 Aşısı Sonrası Gelişen Zona Zoster Enfeksiyonu ve Lenfadenit: Olgu Sunumu

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ABSTRACT

The COVID-19 (SARS-CoV-2) pandemic, which started in Wuhan, China, in December 2019, caused the infection of millions of people around the world and the death of many people. Many countries started vaccine studies in order to reduce the speed of the pandemic, and the vaccines produced were given emergency use approval and were quickly administered in the countries. It is reported in the literature that axillary lymphadenopathy develops as an immune reaction following the COVID-19 vaccine. But in this case report, additional to that, zona zoster infection also developed after vaccination. The aim of this study is to contribute to the literature in terms of immune-mediated infection and immune response.

We presented a 36-year-old female patient who applied to the Family Medicine Polyclinic 3 days after the third dose of Pfizer-BioNTech. In physical examination, together with the inflammation of the lymph nodes in both axillae, there were also vesicles in the back region which were signs of Zona Zoster disease, a skin infection that develops due to the latent Varicella Zoster virus. Oral acyclovir was the main treatment but in addition to that topical administration for herpes zoster and antibiotherapy for lymphadenopathy were prescribed. The vesicles regressed three days after treatment and were fully healed within a week.

Keywords: COVID-19 vaccine , mRNA vaccine , SARS-CoV-2 , Lymphadenitis , Zona Zoster

Öz

Aralık 2019'da Çin Wuhan kentinde başlayan COVID-19 (SARS-CoV-2) pandemisi dünya genelinde milyonlarca insanın enfeksiyon kapmasına ve birçok insanın ölümüne neden oldu. Pandemi hızının azalması amacıyla bir çok ülke aşı çalışmalarına başladı ve üretilen aşılar acil kullanım onayı verilerek aşılar ülkelerde hızlı bir şekilde uygulandı. Literatürde COVID-19 aşısını takiben bir immün reaksiyon olarak aksiller lenfadenopatinin geliştiği bildirilmektedir. Bununla birlikte bildirdiğimiz vakada zona zoster enfeksiyonu da aşı sonrası gelişmiştir. Bu çalışmanın amacı bağışıklık aracı enfeksiyonu ve immün yanıt açısından literatüre katkı sağlamaktır.

Üçüncü doz Pfizer-BioNTech'ten 3 gün sonra Aile Hekimliği Polikliniğine başvuran 36 yaşındaki kadın hastayı sunduk. Fizik muayenede, her iki aksillada lenf düğümlerinin iltihabına ek olarak latent Varicella Zoster virüsüne bağlı gelişen bir cilt enfeksiyonu olan Zona Zoster hastalığında mevcuttu. Asiklovir oral ve dermal başlandı. Veziküller tedaviden üç gün sonra geriledi ve bir hafta içinde tamamen iyileşerek fonksiyonel statüsüne geri döndü.

Anahtar kelimeler: COVID-19 aşısı , mRNA aşısı , SARS-CoV-2 , Lenfadenit , Zona Zoster

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INTRODUCTION

Shingles or herpes zoster disease is a recurrent infection of the Varicella zoster virus, which remains latent in the dorsal root ganglia after the primary infection ⁽¹⁾. It is a skin infection that develops as a result of reactivation of the varicella zoster virus, which remains latent in the dorsal root ganglia, progressing with vesicular rash and dermatomal spread on the skin, usually causing pain and itching ⁽²⁾. Some of the risk factors for Zone Zoster are; oldness, diabetes mellitus, use of immunosuppressive drugs and malignancy ^(3,4).

In lymphadenitis, which is an inflammation of the lymph node, patient feels that the lymph node is warm, swollen and tender. It is possible that lymphadenitis may be a symptom of a wide disease picture but it usually occurs from a regional injury or infection. Immune system weakness is one of the most important causes ⁽⁵⁾.

In the SARS-CoV-2 pandemic, all healthcare workers must know possible side effects to treat patients and manage the outcomes. Also; it is really important to contribute to the literature about the effectiveness, side-effect profiles and widespread management of vaccines, which are vital against the disease, due to their newness. In this study, an effort has been made to contribute to the literature and physicians in their scope of application.

CASE REPORT

A 36-year-old female patient, who had no history of chronic disease applied to our Family Medicine Outpatient Clinic. She was suffering from a painful rash and itching in the left back region. Her symptoms started 3 days after the third dose of Pfizer-BioNTech COVID-19 vaccine. Also she was describing pain around the vaccine area, tenderness and painful swelling in the axillary area.

In physical examination there was visible inflammation of the lymph nodes in both axillae and also vesicular eruptions limited to the left back region, which were signs of Zona Zoster disease. She confirmed that she had chickenpox in the childhood and did not have any recent fever, gastrointestinal or upper respiratory tract disease. She had previously received two doses of Inactive Coronavac (Sinovac)

and two doses of Pfizer-Biontech COVID-19 vaccines and had lymphadenitis twice after mRNA COVID-19 vaccines.

Acyclovir 800 mg 5x1 was prescribed with B and C vitamin supplements. Additional to that; topical administration for Herpes zoster, Co-amoxiclav 1000 mg 2x1 for lymphadenitis and Naproxen 550 mg 2x1 to reduce pain also prescribed.

Lesions had crusted and disappeared in the follow-up three days after the treatment, and the patient completely recovered within a week and returned to her functional status.

DISCUSSION

During the pandemic, serious changes such as anaphylaxis, thrombotic thrombocytopenia, pericarditis, myocarditis and encephalomyelitis were reported after COVID-19 vaccines received separation and emergency use divorce through different technologies. However, serious allergic reactions have been reported to two messenger ribonucleic acid (mRNA) vaccines ⁽⁶⁾. For the adenoviral vector-based COVID-19 vaccine, its use was suspended for a while after six cases of cerebral venous sinus thrombosis (CVST) were detected ⁽⁷⁾.

A possible causal relationship between myocarditis and pericarditis was reported in 2021 with SARS CoV-2 mRNA-based vaccines, both the BNT162b2 vaccine and the mRNA-1273 vaccine, and there is increasing evidence that myocarditis and pericarditis occur as rare complications of mRNA vaccines ⁽⁸⁾.

In this article, we report our patient who developed zona zoster and lymphadenitis after Pfizer-Biontech vaccine. Understanding the mechanisms of mRNA COVID-19 vaccines is important to identify the complications. It is clear that; mRNA, a synthetic messenger, enters the cell after vaccination and produces the spike protein which is on the surface of the virus. Our bodies recognize this protein as an invader and produce antibodies against it. In some cases, this immune response causes immune dysregulation and triggers autoimmune events. During the safety studies of the vaccine, it was observed that the incidence of adverse events detected higher in those who received the vaccine compared to those who received placebo.

Sixty-four of vaccine recipients (0.3%) described lymphadenopathy, compared to 6 placebo recipients (<0.1%)⁽⁹⁾.

In order to fight against the negative effects of the pandemic, third and fourth doses has been included in the vaccine programs of multiple countries. That means millions of people going to get vaccinated, in a short amount of time. So; it is important for us, healthcare workers, to know side effects and complications due to vaccines.

In scientific studies on the subject, we can see that Zona zoster has been reported after inactivated COVID-19 vaccine too⁽¹⁰⁾. There are also previous case reports of zona zoster after inactivated influenza, hepatitis A and rabies vaccine⁽¹¹⁾. In addition to that; it has been observed that patients with COVID-19 also develop susceptibility to herpes zoster reactivation. COVID-19 patients are thought to have herpes zoster reactivation due to a tendency to develop an immunosuppressive state and a decrease in CD4+ T lymphocytes⁽¹²⁾.

It is clear that; there are other herpes zoster cases reported after mRNA vaccination, but in our case it was together with lymphadenitis and was seen after the third dose in our case will contribute to epidemiological studies.

CONCLUSION

Vaccination is a significant topic for all healthcare workers, especially after the pandemic. But it is much more important for physicians and nurses who work in family medicine field, which are the main vaccination centers in most countries, to know possible side effects and complications about COVID-19 vaccines as well as other vaccines.

We present the case of Zona Zoster infection and lymphadenitis developed after Pfizer-BioNTech vaccine to raise awareness and contribute to epidemiological studies. More comprehensive studies are needed to determine complications of COVID-19 vaccines.

Author contribution

Study conception and design: SG, AHBA, and MA; data collection: SG, AHBA, and MA; analysis and interpretation of results: SG, AHBA, and MA; draft

manuscript preparation: SG, AHBA, and MA. All authors reviewed the results and approved the final version of the manuscript.

Ethical approval

Informed consent was obtained from all participants in the study.

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Conflict of interest

The authors declare that there is no conflict of interest.

Yazar katkısı

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