

# Benign Fasciculation Syndrome Developing after COVID Vaccine (Sinovac/CoronaVac)

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## Abstract

Benign fasciculation Syndrome (BFS) is related with anxiety level; it is known as fasciculation anxiety syndrome. It may also be caused by long-term use of steroid or anticholinergic, as well as nicotine, caffeine, alcohol, and exposure to insecticides and pesticides. This paper presents a benign fasciculation syndrome case developing after CoronaVac vaccination.

## Keywords

Fasciculation, COVID, Vaccine

## 1. Introduction

The pandemic caused by the SARS-CoV-2, a new coronavirus, is the most important health problem of the 21<sup>st</sup> century. High communicability, its unprecedentedly negative effect on the healthcare systems of countries, and absence of treatments that might improve the prognosis of this disease indicate the importance of developing an effective and reliable vaccine for this disease [1]. CoronaVac is an inactive virus vaccine that has been developed in China by using conventional vaccine production technologies [1] [2]. The vaccination in Turkey has started with medical personnel in October 2020.

Benign fasciculation syndrome (BFS) is a condition having a good prognosis and characterized with the fasciculation of voluntary muscles in the body and it generally limits itself [3]. This paper presents a benign fasciculation syndrome case developing after CoronaVac vaccination.

## 2. Case Presentation

A 43-year-old male patient applied to our clinic with complaints of widespread fasciculation in the tongue and entire body developing 1 day after the vaccina-

tion. He had no known comorbidity or medication usage. He did not use alcohol, nicotine or caffeine. No muscle weakness or atrophy was found in neurological examination. Deep tendon reflexes were found to be normal. In routine blood tests, Ca, Mg, K, Na, B12, TSH, and T4 values were within the normal limits. Neural transmissions were observed to be normal in EMG (electromyography) examination. Using needle EMG, fasciculation was observed in resting position in all the muscles examined. Motor unite potentials (MUPs) obtained during voluntary contraction were within normal limits. Spinal cord imaging was normal. The patient was taken to follow-up and the fasciculations were completely recovered in 3 weeks by gradually decreasing. The fasciculations were re-started 2 days after the second dose of COVID vaccine and completely recovered in 2 weeks. He did not take any medication or psychotherapy. No relapse was observed.

### 3. Discussion

The new coronavirus disease (COVID-19), the first case of which has been reported in late 2019 and which is caused by a new-type coronavirus (SARS-CoV-2), has been announced as a pandemic by World Health Organization on 11 March 2020 [4] [5]. The communicable and life-threatening nature of the virus necessitated the vaccine studies.

Sinovac (CoronaVac) continued its third phase vaccine studies in countries including Turkey, Brazil, and Indonesia [2] [5] [6]. The prevalence of adverse effects in vaccinated group was found to be 33%, whereas the same parameter was found to be 22% in placebo group and no statistically significant difference was found with placebo, except for the pain at the point of injection. No severe adverse effect was observed and the adverse effects that have been observed include pain at the point of injection, fever, asthenia, diarrhea, and muscle pain [2] [4] [5] [6].

Benign fasciculation syndrome (BFS) is characterized with the fasciculation of voluntary muscles in the body [7]. Fasciculation may develop in any voluntary muscle group but the most remarkable ones are eyelids, arms, hands, fingers, legs, and feet. Tongue might be affected too. The fasciculation might be occasional or continuous [8]. Other common symptoms include generalized fatigue or asthenia, parasthesis, and muscle cramps or symptoms [7]. Anxiety and somatic symptom disorders and symptoms are widely reported [7]. BFS symptoms are generally not accompanied by atrophy or muscle weakness and they typically emerge when the muscle is rested. Fasciculations may pass from a part of body to another one. The exact reason for BFS is not known. It is not known if this is a disease of motor nerves, muscles, or neuromuscular endplate. It is related with anxiety level; it is known as fasciculation anxiety syndrome. Intense and long-duration exercises may cause or worsen the fasciculations [8]. BFS may also be caused by long-term use of steroid or anticholinergic, as well as nicotine, caffeine, alcohol, and exposure to insecticides and pesticides [8]. Thyroid disease

may cause similar symptoms. The other significant diseases that should be distinguished include amyotrophic lateral sclerosis (ALS) and other motor neuronal diseases, neuropathy, and spinal cord diseases.

#### 4. Conclusion

Benign fasciculation syndrome was found to have no association with any vaccine. Fasciculation finding was not reported as an adverse effect after COVID vaccine. It was aimed to present the case that was first in the literature.

#### Declarations

Ethical Approval and Consent to participate: Written informed consent was obtained from the patient for publication of this case report and any accompanying images.

#### Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

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